



Virtual Portal for Interaction and ICT Training for People with Disabilities

Unit 2 Training Handout

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2 Unit 2 Basic ICT Skills

2.1 (Higher) About Computers

2.1.1 Types of Computer

2.1.1.1 *Desktop*

A desktop computer is a personal computer intended for use at a fixed location. It is not portable. Early designs had a horizontally placed computer case on which a monitor screen could stand. This orientation was intended to save space. Modern designs often have a vertically mounted computer case intended to stand either on or under the desk. The computer case is usually linked to a monitor, speakers, keyboard and mouse by cables or wirelessly. Desktop PCs are usually designed with free slots on the motherboard in which extra hardware can be added, allowing the PC to be gradually upgraded by the user, adding drives graphics boards, extra RAM etc.



Figure 1 : A selection of desktop computers

2.1.1.2 *Laptop*

Laptop computers (smaller versions of which are often referred to as notebooks) are personal computers designed for portable use. The laptop incorporates the monitor, computer, keyboard, mouse (touchpad) and speakers into a single unit. The laptop has a battery on-board which is charged by means of an AC power adaptor. Laptops may have less processing power than desktop machines for equivalent prices, but the advantages in compactness and portability often outweigh this issue. A laptop is generally less user configurable in terms of hardware than the equivalent desktop, as there is not generally the space to add hardware within the device.



Figure 2 : A selection of laptop computers

2.1.1.3 *Netbook*

A netbook is a small, light, low-power notebook computer that has less processing power than a full-sized laptop but is still suitable for word processing, running a Web browser and connecting wirelessly to the Internet.



Figure 3 : An example of a netbook

2.1.1.4 *All-in-One*

All-in-one computers are becoming more popular, utilising developments in laptop technology to negate the need for a separate PC and monitor. An all-in-one PC is a personal computer mounted on the desk like a standard monitor, but with the computer built in to the back of the monitor unit. It is usually powered by an AC adapter and has USB ports for attaching a mouse, keyboard and other devices. All-in-one PCs often have a touch-screen capability built in, allowing users to interact with programs by touching the screen itself. They meet the needs of desk based comfort – whilst not requiring the space on or under the desk to place the PC box. They lack the possibilities for customisation of a standard desktop PC, which is usually designed with free slots to add extra hardware, such as drives, graphics cards etc.



Figure 4 : An all-in-one computer

2.1.1.5 Tablet

A tablet PC is a hand held device with a touch-screen. It may have sockets to connect other devices for interaction purposes. Tablet PCs may be lower powered than the equivalent laptop due to size restrictions, and therefore may be limited in the software that they can run. Some tablets are built to use leaner smartphone operating systems such as Android, Windows Phone or iOS, which are designed for less powerful machines. Some tablets are equipped with a stylus (or pointer) for ease of selecting finely.



Figure 5 : A typical tablet computer

2.1.2 Parts of a Desktop Computer

2.1.2.1 Overview

A desktop computer can be broken down into its key components, which are generally the computer, its monitor, its speakers, its keyboard and its mouse. These are shown in Figure 6. There are other peripherals which may also be connected.

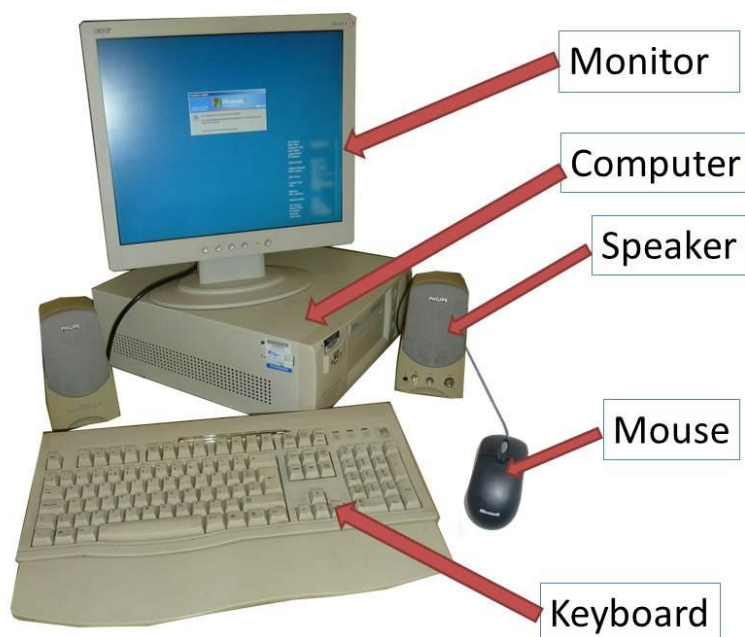


Figure 6 : A labelled diagram of the main components of a Desktop PC

2.1.2.2 *The Monitor*

The monitor is the computer's screen. Some have built in speakers, and some have touch screen functionality, but all monitors are means of visual display. Older versions tended to be big and heavy with a CRT (Cathode Ray Tube) build, but modern monitors use much lighter and less bulky LCD and plasma screen technologies.



Figure 7 : A selection of monitors

2.1.2.3 *The Computer*

The computer case (sometimes also known as the base unit or Central Processing Unit) usually consists of a plastic or metal box mounted in either an upright or horizontal position. It contains the computer itself, consisting of the mother board, processor, disk drives, graphics card, RAM and the power supply. It also usually has an on/off and a reset switch on the front. At the rear of the unit (see Figure 9) there will be a number of sockets to which the other parts of the computer and a power cable must be attached. There may also be a power switch at the rear. There are usually also a number of USB sockets, some of which may be on the front of the unit for ease of access.

Computers in this form allow for upgrades as they often have free slots and power connections for adding in new hardware.



Figure 8 : Some computer cases



Figure 9 : A view of the back of a PC showing the numerous sockets to connect the various peripheral devices

2.1.2.4 The Mouse

The mouse is a device that allows interaction with the pointer on the screen. Moving the mouse moves the pointer. The mouse also has two or more buttons and sometimes a scroll wheel. The functionality is explained in the Input devices section (Section 2.2.1). Most modern mice use a USB connector to link to the PC, they may however be wireless or use a PS/2 connection.



Figure 10 : Some mouse pointing devices

There are many device types which have the functionality of the mouse but may work in slightly different ways. A summary of types is given below.

- **Mechanical mouse:** Houses a hard rubber ball that rolls as the mouse is moved. Sensors inside the mouse body detect the movement and translate it into information that the computer interprets.
- **Optical mouse:** Uses an LED sensor to detect tabletop movement and then sends off that information to the computer for merry munching.
- **Infrared (IR) or radio frequency cordless mouse:** With both these types, the mouse relays a signal to a base station wired to the computer's mouse port. The cordless mouse requires power, which comes in the form of batteries.
- **A mouse with many buttons:** The extra buttons can be programmed to do specific things, such as navigate the Web or turn pages when you're reading a document. The typical button-ified mouse has about five buttons.

- **Trackball mouse:** Like an upside-down mouse. Rather than roll the mouse around, you use your thumb or index finger to roll a ball on top of the mouse. The whole contraption stays stationary, so it doesn't need a lot of room, and its cord never gets tangled.
- **Stylus mouse:** Another mouse mutation enjoyed by the artistic type is the stylus mouse, which looks like a pen and draws on a special pad.
- **Cordless 3-D mouse:** This kind of mouse can be pointed at the computer screen like a TV remote.

Further information can be found at <http://www.dummies.com/how-to/content/the-different-types-of-computer-mice.html>)

2.1.2.5 The Keyboard

The keyboard is a collection of keys with letters numbers and symbols on them for typing text inputs into the computer. Its full functionality is detailed in the inputs section (section 0).



Figure 11 : PC keyboards

2.1.2.6 Speakers

The speakers are the means of sound output on a desktop PC. There is usually a two speaker system – although there may be more than two speakers – or sometimes none at all. Speakers generally stand either side of the monitor and often have some controls to adjust the volume and balance and a power switch. It is also common for speakers to be built in to the PC base unit or the monitor.



Figure 12 : PC speakers

2.1.2.7 The Router or Modem

The router or modem is a device which allows your computer to have a connection to the internet. It may be connected to your computer by a wired or 'wireless' connection. These devices are very

varied in appearance, but have the common use of connecting one or more computers to the internet.



Figure 13 : A wired and wireless router

2.1.2.8 The Printer

The printer is used to print out copies of documents on paper. Some printers are only capable of printing in black and white, and some can do colour prints. Many printers have other functionality built in such as scanners, making them useful as photocopiers.



Figure 14 : A selection of printers

2.1.2.9 The Scanner

A scanner is used to get a copy of a document or picture saved on the computer. It can be seen as a sort of electronic photocopier. Some printers also have scanners built into them – known as all-in-one printer/scanners.



Figure 15 : A scanner

2.1.2.10 Webcams

A webcam is a camera device which can allow people on other computers to see you (if you allow them to). Some webcams have a microphone (see next section) built in allowing them to capture both images and sound. Some monitors (especially in laptop computers) have a webcam built in placed just above the screen (as in the right hand image in Figure 16).



Figure 16 : Webcams (left a USB webcam, and right a built in webcam in a laptop computer)

2.1.2.11 Microphones

The microphone is a device which plugs into your computer and allows you to speak to it. This can be useful for voice inputs to control the computer or for speech to text inputs. It is also useful for communications applications where you can speak to people on other computers. Some microphones stand on the desk or clip to the monitor. Others may be part of a headphone set. Some laptop computers have a microphone built in.



Figure 17 : Microphone for a PC

2.1.2.12 CD, DVD and Blu-ray Drives

Most computers have a built in drive to read and/or write CDs, DVDs or Blu-ray discs. In a desktop machine, it is usually located on the front of the unit. In a laptop or all-in-one machine it is often on one of the sides of the machine. The tray is opened by pressing the button on or next to the tray. On inserting the disc they will usually automatically run. The tray may be closed by gently pushing it back in or sometimes by pressing the open/close button again.



Figure 18 : DVD drives in a laptop, desktop and all-in-one machine

2.1.2.13 Cables and Connections

The parts of a desktop computer are connected up by a series of cables, each of which has a different purpose. This section will identify the cables and where they should be attached to make your computer work properly.

Power cable: The power cable is usually a thick cable with a large connector with three holes in it.



Figure 19 : Power connector

Monitor cables: There are three main types of display cables, DVI, VGA and HDMI. The first two, being quite large, often come with screw fittings to enable a secure connection to the socket. To connect them you must first push the plug into the socket, and then (using either fingers or a screwdriver) screw the screw fittings until finger tight. The HDMI cable is a more modern alternative and just pushes in.



Figure 20 : VGA display connector (left) DVI display connector (Middle) and HDMI (right)

Network cables: Network cables generally have a locking mechanism. A piece of sprung plastic clicks into place to ensure the network cable stays firmly in its socket. To release a network cable you must press down on the clip whilst pulling the plug from the socket.



Figure 21 : Network connection

USB cables: USB cables are the most common sockets for connecting peripherals such as cameras, mouse, keyboard, webcam, phone etc. to your computer. They are a standardised socket and should have a USB symbol (see Figure 22) on both the socket and the plug. If the symbols are aligned, the plug will fit the socket. A USB connector will not fit in the socket if it is the wrong way round.



Figure 22 : A USB plug and the USB symbol

Speakers: A speaker cable uses a connection similar to a headphone plug. These are often colour coded, with a green plug for a green socket.

Microphone: A microphone also uses a headphone type plug. These are often colour coded with a pink plug for a pink socket.



Figure 23 : A microphone connector

PS/2: This is an old style connector for the mouse and keyboard. It has commonly been replaced now with USB ports which allow much more general connectivity of devices. These were also often colour coded using a purple plug and socket for the keyboard and a green plug and socket for the mouse.



Figure 24 : A PS/2 plug for old style mouse and keyboard

Parallel ports: Some older computers may still have parallel ports for connecting up printers scanners and other peripheral devices, but again these have largely now been replaced with USB connections. A parallel port is a large long connector with 25 holes and often screw connectors like a monitor cable has.



Figure 25 : A parallel port

Serial port: Some older computers may also have serial ports which have again been largely replaced with the use of USB connections. Some older or more specialised hardware may still use a serial connection. To connect these to a modern PC with no serial port, a serial to USB convertor cable can be purchased.



Figure 26 : A serial plug connector

Firewire: This was introduced as a faster connection to replace USB 1, but since USB 2, firewire has been largely replaced by USB which can transfer data at almost equivalent speeds. Firewire was commonly used in video equipment and external hard drives, and by Apple Inc. (who originally developed the technology), where speed of data transmission is key.



Figure 27 : A firewire plug

Each of the connections above has its own socket type. The socket types available and their positions vary from PC to PC. In Figure 28 a typical PC is shown from the rear. Each of the connectors is labelled. The majority of connections are grouped as they are mounted directly on the motherboard of the computer. There are however separate positions for the power input (a part of the power supply unit) and the extra display outputs (mounted in an optional graphics card).

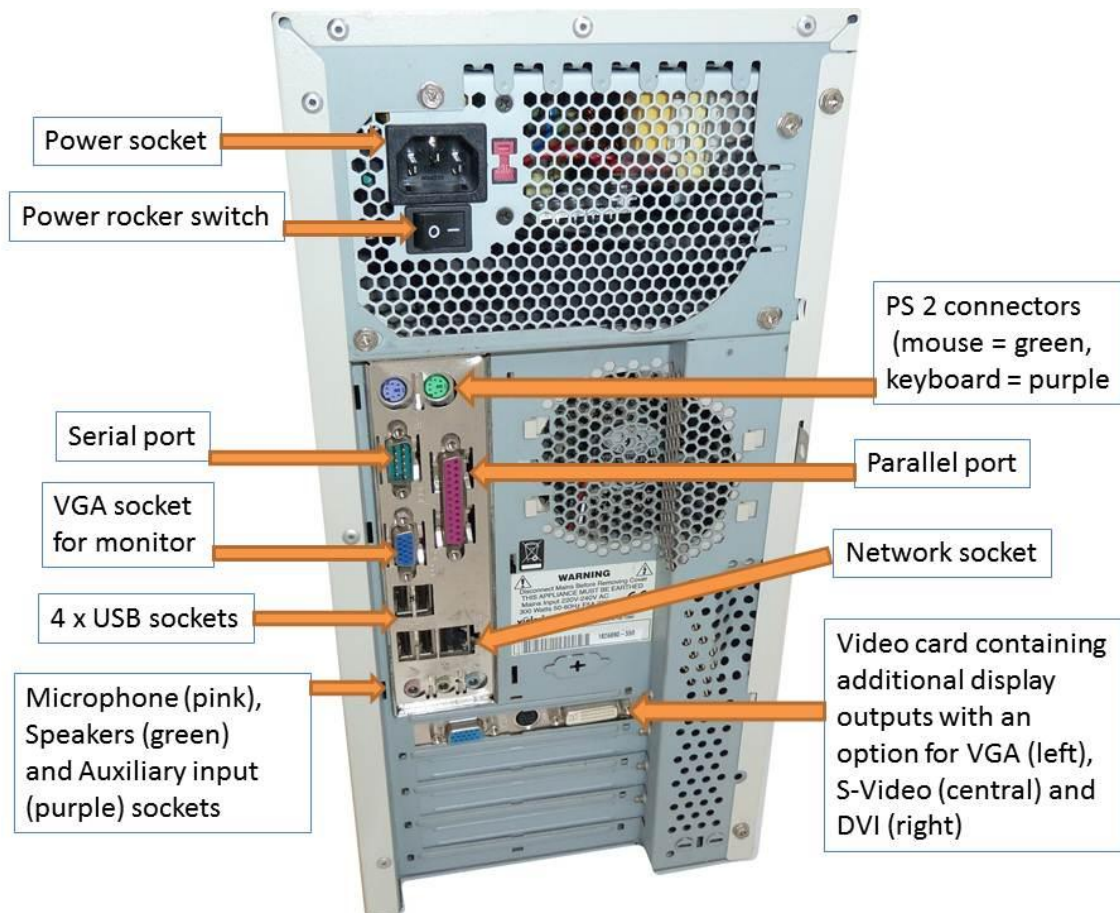


Figure 28 : A labelled diagram of the back of a PC unit showing the various sockets for connection

2.1.2.14 Assistive Hardware

This material will be provided by the ATLEC project (www.atlec-project.eu) that focuses on assistive technologies training.

2.1.3 Parts of a Laptop Computer

2.1.3.1 The Laptop

The laptop contains the main five parts of a desktop computer in one portable unit. It has a monitor, speakers, a computer, a keyboard, and a touch pad pointing device (which works like a mouse). A laptop may also have a microphone and webcam built into it.

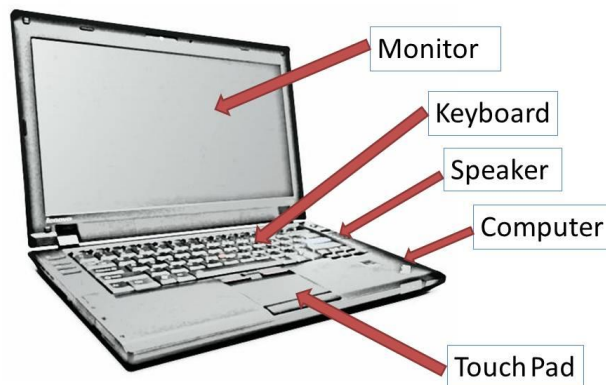


Figure 29 : A diagram showing the key parts of a laptop computer

2.1.3.2 The Power Supply

The power supply acts as a recharger for the battery which is usually mounted under the back of the laptop. The power supply will need to be connected to the mains and plugged into the laptop if using it for prolonged sessions or if the battery is low.



Figure 30 : a power supply for a laptop computer

2.1.3.3 The Mouse

A mouse is often plugged into the laptop to control the pointer as this may be easier to use than the laptop's built in touch pad device. Laptops rarely have a PS/2 connection, and so USB is the usual means of connecting a mouse.



Figure 31 : A selection of mouse pointing devices

2.1.3.4 *The Touchpad*

Most laptop computers have a touch sensitive device to perform the operations of the mouse. It is usually mounted close to the front edge of the laptop. A touchpad is shown in Figure 32. It can be used in a similar way to the mouse. Dragging a finger across the surface of the pad moves the mouse pointer across the screen. Clicking the left button acts a left mouse click. Clicking the right button acts as a right mouse click. All drag and double click options behave as in a normal mouse (See section 2.2.1.2 – ‘Using a mouse’). There is a portion on the right hand side of the touchpad that acts as a scroll wheel. Dragging the finger up and down on this portion of the touchpad will scroll the current window up and down.



Figure 32 : A touchpad on a laptop computer

2.1.3.5 *Assistive Hardware*

Add items here specific to user group

2.1.4 Turning the computer on and off and logging in and out safely

2.1.4.1 *Starting Up the Computer*

The ‘Power’ Button

The first step in turning on a computer is locating the ‘Power’ or ‘On/Off’ button. It will usually have a symbol like the ones on the buttons in the pictures in Figure 33.



Figure 33 : A selection of power buttons showing the power symbol

To turn on a **desktop** computer, you will need to press the one on the computer case and also the button on the monitor with the same symbol. First press the on button on the monitor. It should come on, but not be displaying anything meaningful. Next press the on button on the computer case. It will probably make a beep and a whirring noise, and some lights may come on. On the monitor,

you will then see a number of messages flashing on and off as the computer loads up. This process can take a minute or two. You need to wait until you see the log in screen.

To turn on a **laptop** computer, you will first need to open it. Some laptops will just fold open, others will have a push or sliding clasp holding the laptop closed. To open these you will need to slide the catch or press the button prior to opening the laptop. Next locate the power button, which is usually found above the keys of the keyboard and will be denoted by a symbol like those in Figure 33 : A selection of power buttons showing the power symbol, and press it firmly once. It will probably make a beep and a whirring noise. The monitor and some lights may come on. On the monitor, you will then see a number of messages flashing on and off as the computer loads up. This process can take a minute or two. You need to wait until you see the log on screen.

Logging On

Depending on your computer system, the log on screen may look different, but most log on screens only require you to put in two things, a user name, and a password. The user name may already be stored in a list or as an icon. If there is an icon with your log on name click it and then enter the password. If there are two text boxes, type your username into the first and your password into the second. These will both be case sensitive – which means that you must use capital letters and small letters correctly. When you have entered the password click the log on button and the computer should continue to load the software. After a minute or two the computer should be ready to use.

An example boot

There follows an example of booting up a laptop PC into Windows 7. The first thing to do is open up the laptop. Some simply fold open others have a slider or button catch to keep them locked. Once the laptop is open, locate the power button. This can be seen in Figure 34 as the silver central button with the blue light under it. On pressing the power button, the machine begins to boot. It first shows a splash screen for the manufacturer (as shown in Figure 34), and then goes on to say that it is 'Starting Windows' (as in Figure 35).



Figure 34 : Initial screen



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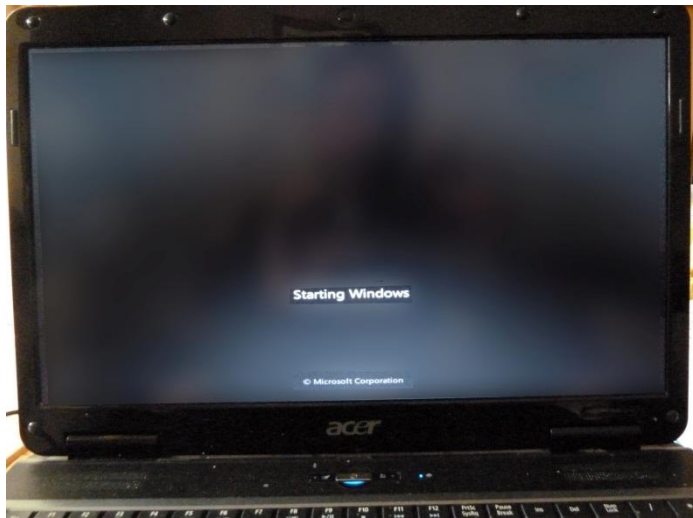


Figure 35 : The machine is 'Starting Windows'

After a minute or so it will reach the login screen as shown in Figure 36. The login screen in this instance has 3 users set up, Andy, Emily and Jack. In order to log in a user must click on their icon. There are also some other options on the login screen. The blue icon in the lower left of the screen is a shortcut to the 'Ease of Access Centre'. When clicked, this displays some of the ease of access options (see Figure 37) that can help a user to log on and use Windows.



Figure 36 : Windows 7 login screen



Figure 37 : The ease of access centre from the login screen

When one of the user icons is clicked, in this instance 'Andy', a password box appears (as seen in Figure 38). The user must type their password using the keyboard, and then click on the arrow next to it. As can be seen in Figure 39, as the password is typed, the characters appear as a black circle. This is to hide the user's password on the screen and is not an error. It serves to give the user a guide to how many characters they have typed without giving away the password to bystanders. When the password is entered, the user clicks on the arrow next to the password box (or presses the Enter key) to continue.

Some login screens will not have a list of users, but will have two boxes. One to input a username and the other to input the password. If this is the case the user must type their username and password into the boxes and click on the arrow or press enter.



Figure 38 : The password entry screen for user 'Andy'

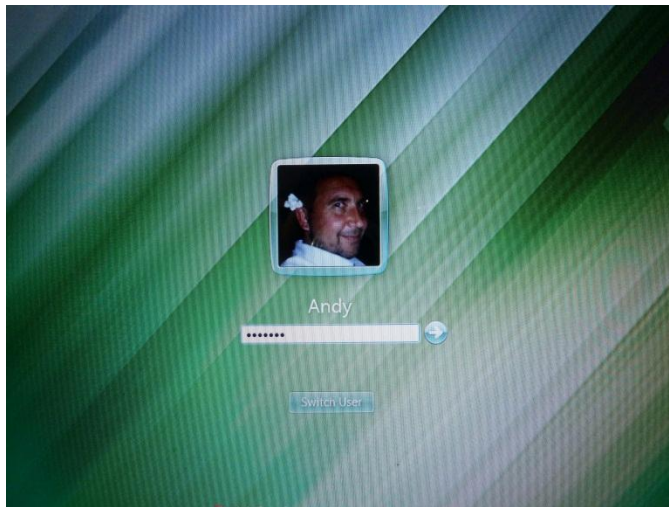


Figure 39 : Typing the password

After the password is typed correctly Windows will continue to load into the user's log on. If the password is typed wrongly the machine will prompt them to try again. Once a correct password is given, the 'Welcome' screen will load (as in Figure 40) which indicates a successful login. After a short wait, the desktop should appear with its familiar icons. On some slower computers it is advisable to wait until the system has fully loaded and settled down before attempting to work with the machine. The machine is ready to use when the lights indicating drive activity stop flashing on and off.



Figure 40 : Welcome screen

2.1.4.2 *Shutting Down the Computer*

A) Exiting Programs

When preparing to turn off the computer, prior to shutting down the machine it is important to make sure all work that has been done is saved. From the file menu click save on any documents you are working on. After this click the 'x' cross icon on the top right of the window. This should close the application. There is more on this in the 'Using the Computer' section.

B) Software Shutdown from the Start menu

Once the applications are closed you can begin shutting down the machine. This is usually done using the mouse, but can also be done with keyboard only.

Using the **Mouse** to shut down:

Click on Start in the task bar (if the task bar is not present move the mouse to the bottom edge of the screen to make it appear).

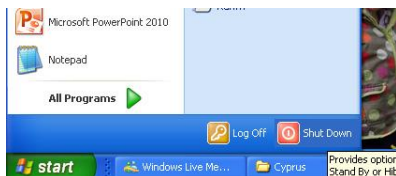


Figure 41 : Clicking the start button brings up the Shut Down button

In **Windows XP** there is a 'Log off' and a 'Shut Down' button in the start menu (Figure 41). Log off will take the user to the log in page (it will first ask for confirmation that the user wants to log off). Shut down will offer a list of options (Figure 42). Shut Down should be selected to shut the computer down completely. Out of interest here is what the other options do:

- Shut Down - shut the computer down completely.
- Restart – shut the computer down and restart it again immediately
- Standby – a power saving mode that leaves your computer ready to be used again immediately
- Log Off Username – takes the computer back to the login screen
- Hibernate – a shut down mode that will bring your desktop back as it was on restarting

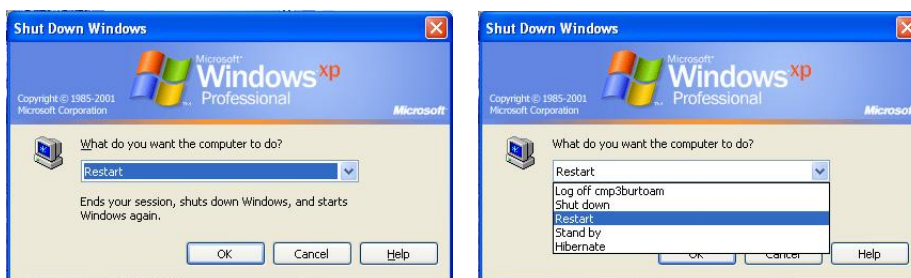


Figure 42 : The Shut Down button brings up this window (left), and clicking the dropdown reveals the menu shown right.

Using the **Keyboard** to shut down:

On the keyboard the user should press the 'Windows Key' - it will have a symbol like  or  and is placed at the bottom of the keyboard close to the ctrl and alt keys. Using the arrow up key the user can step the highlight onto Shut Down. Hitting the 'Enter' key performs the operation. The up and down arrows move the user through the same dropdown options as described above. The user should select the option they require, and hit 'Tab' to move the focus to the OK button. Hitting 'Enter' again will activate the shutdown.

In **Windows 7**, there is a single button in the start menu called 'Shut Down' (see Figure 43 : The 'Shut down' button from the Windows 7 task bar / Start button Figure 43).

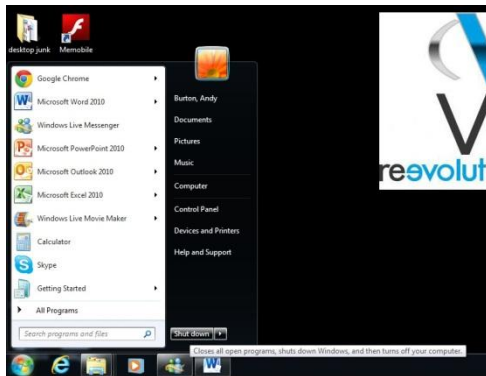


Figure 43 : The 'Shut down' button from the Windows 7 task bar / Start button

C) Turning off the Monitor

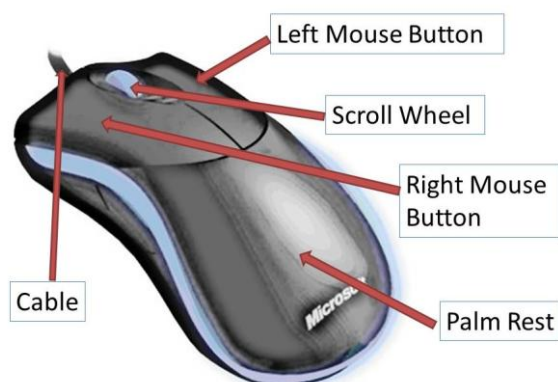
After shut down, the computer will in most cases turn off automatically. If it reaches a screen that states 'It is now safe to switch off your computer', the power button may be pressed to turn it off. On a laptop, the built in monitor will also shut down automatically. The monitor on a desktop machine will however stay on standby, and can be turned off by pressing the power button again. This is the same button as was used to turn it on previously.

2.2 Higher Input Devices

2.2.1 The mouse/touchpad

2.2.1.1 *Parts of the mouse*

A mouse is a device controlled by the user's hand on a surface, usually a desk. It has a sensor underneath (using either a ball or a light) to track its position on the desk. As you move the mouse it moves the pointer on the screen. The mouse will usually have at least two buttons (known as the left and right mouse buttons) and will also often have a scroll wheel between them. A mouse may also have more buttons and features than these, but most of the functions can be achieved using only those controls previously listed.



2.2.1.2 Using a mouse

A) Moving the pointer

To move the pointer on the screen, move the mouse around on the desk.

B) Left Mouse Click

A left mouse click is a single press and release of the left mouse button. It is called a click because of the sound it makes. A left click will usually select an item on the screen.

C) Right Mouse Click

A right mouse click is a single click of the right mouse button. A right mouse click will usually bring up a menu of choices of different things you can do.

D) Double Click

A double click is the term for clicking the left mouse button twice in quick succession. A double click will select and then activate an action. For example double clicking on an icon on the desktop will open a file or application.

E) Dragging

Dragging is where the user clicks the mouse button and holds it down. The user then moves the mouse across the desk. This process 'dragging' enables an object to be selected and moved across the screen.

F) Scrolling

Scrolling is the term used for turning the scroll wheel. This is often used to scroll through the contents of a window with a scroll bar at the side of it. Rolling the scroll wheel away from you will move the document up, and rolling it towards you will scroll down the document.

2.2.1.3 Touchpads

Laptop computers are designed with a touchpad device that acts as a mouse when use of an actual mouse is impractical. It has a touch sensitive area, dragging a finger on which moves the mouse pointer. It also has left and right buttons as in a mouse. Some mouse pads will have a small thumbstick device, which can be used for scrolling between items or mouse pointer movement. The touchpads also often have a scroll area on the right hand side of the pad to allow scrolling in windows (similar to a scroll wheel on a mouse). Some touchpads will have a central button to represent clicking down on the mouse scroll wheel. Functionality will generally behave as in the mouse – see section 2.2.1.2.

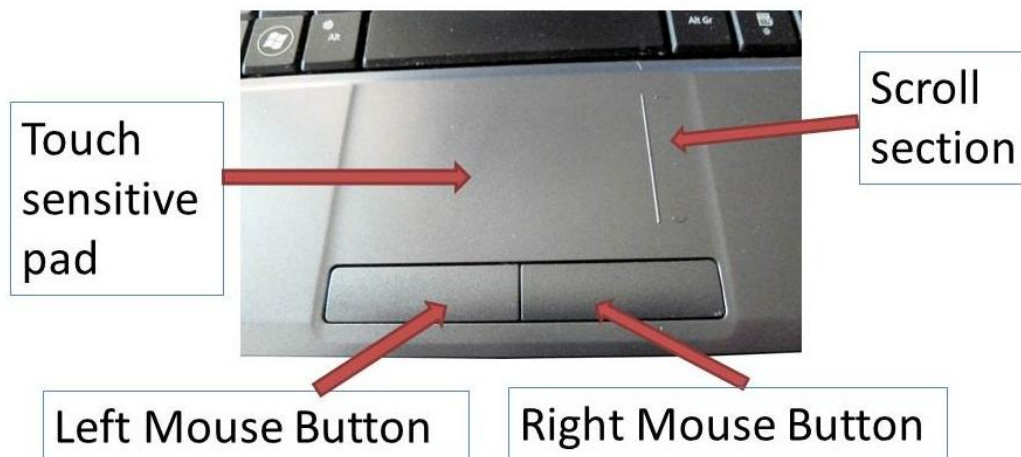


Figure 44 : A labelled photo of a touchpad

2.2.1.4 *Accessibility assistance for the mouse*

In Windows there are a number of software tweaks which can make the mouse more accessible for particular users. They can be turned on and off using the 'accessibility wizard' available from the accessibility menu under accessories.

- Use numeric keyboard instead of a mouse – allows the numeric keyboard to double up as a mouse
- Mouser cursor – change the colour or size of the mouse pointer
- Mouse button settings – switch the mouse for a left handed user
- Mouse pointer speed – change the speed of the mouse pointer

Different designs of mouse may increase the ease of use for particular users. A wireless mouse could prevent problems caused by wires, or a track ball could be useful where a user has limited movement.

2.2.2 The Keyboard

2.2.2.1 *The keys*

The keyboard is a device designed to allow a user to input data and information into a computer. It consists of a device with multiple buttons (or keys) connected to the computer by a cable – or sometimes wirelessly. The keys are often grouped to improve the functionality of the keyboard. The groupings of the keys are shown below:

The letter keys are grouped, and usually presented in the 'QWERTY' format (shown in blue on Figure 45). This is a standard layout that once learned allows fast typing speeds. The long bar below them is called the space bar, which adds a space between typed words.

Some keyboards have a number pad to the right (shown in Figure 45 in green) which contains the numbers and the most common mathematical operators. This allows for fast number work. Some keyboards do not have a number pad in order to make the keyboard more compact. This is common on laptops or portable keyboards. All keyboards however have the numbers above the letters (shown in Figure 45 in red). There are a set of navigation keys in the centre (shown in Figure 45 in purple),

consisting of arrow keys, home and end, page up and page down, insert and delete. The remaining keys are also important, and below their respective uses are listed.

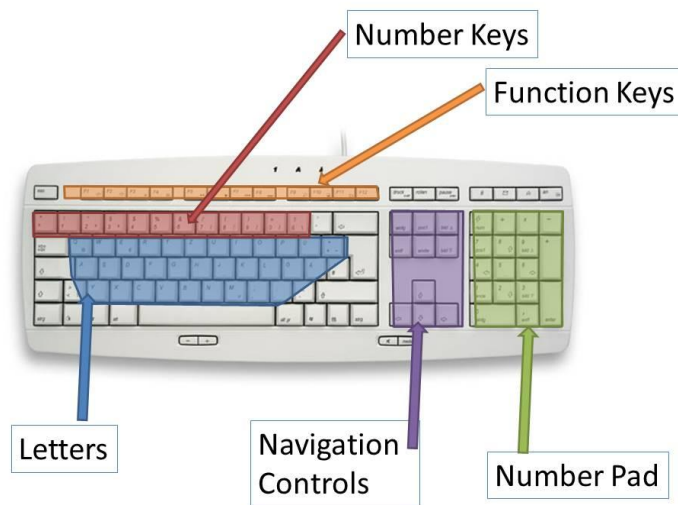


Figure 45 : The key groupings on a keyboard

On the keyboard there are also a number of special keys. These are as follows:

Shift: ↑ This is a modifier key. When this key is held as another key is pressed, it makes the alternate 'upper' character be displayed. When used with a letter key it will alter the case of the letter. When used with one of the keys with lower and upper options (e.g. '{' or '[') the upper option will be displayed.

Control: ctrl This is also a modifier key. It performs special operations when pressed in conjunction with other keys. The ctrl key allows many useful shortcuts to be performed. Some of the most commonly used are:

- CTRL and X – cut
- CTRL and C – copy
- CTRL and V – paste
- CTRL and Z – undo
- CTRL and A – select

There are many others and the functionality often changes dependent on the program that is being used at the time.

Alt: This is a modifier key used to 'alternate' the function of the key. The functions performed by the alt key combinations vary depending on the program being used. Commonly they will allow shortcut (or non-mouse-user access) to menus.

Caps Lock: Caps lock is a toggle switch. Press it once and the case of all characters typed will switch. Press it again to switch the case back again. There is often a light on the keyboard which denotes whether or not the caps lock toggle is on. Caps lock can also be used to capitalise letters by a user without the sufficient two-handed motor control to hold shift whilst typing.

Windows:  The windows key is a shortcut to the start menu or a means of accessing the menus without using a mouse. It also allows a number of shortcuts relating to the movement and

maximising/minimising of windows. These shortcuts are listed in Section 0 'Higher Using the Computer'

Tab: → Tab is a key used for aligning text into a tabular form in a document. It is also used in windows to cycle between links in html browsers. Tab shifts the highlight to the next link. Shift and tab moves the highlight back to the previous link. This is useful for hyperlink selection by non-mouse-users.

Enter: ↵ There are two enter (sometimes called return, or carriage return) keys. There is one to the right of the letter group, often marked with an arrow pointing down and to the left. There is also one on the bottom right hand side of the number pad – usually marked 'enter'. Both keys perform the same function, which is usually to finish and entry and perform a process. It is often the keyboard equivalent of clicking an OK button with the mouse. When using a word processing package, the enter key will act as a carriage return – beginning a new paragraph.

Backspace: ⇐ The backspace key allows a user to delete the last character they typed. Holding the backspace key will repeatedly delete characters.

Delete: The delete key (sometimes marked 'del') serves to delete the character in front of the cursor point. It can also be used for such functionality as deleting media from documents or deleting a file from a folder.

Escape: (sometimes labelled 'esc') the escape key is a shortcut for exiting or ending programs. It is often the keyboard version of pressing an exit, no, quit or cancel button. It is also used as a keyboard shortcut for the stop button in many html browsers.

There are also twelve function keys across the top of a standard keyboard, which allow the user to perform shortcuts to functions (these are shown in orange in Figure 45). An example of this in windows is the F1 button which typically calls up the help system for the current application.

A number of more accessible keyboard options are available, including large text, large keys, high contrast, colour coded keyboards and simplified keyboards.

2.2.2.2 *Assistive keyboard approaches*

In Windows XP there are a number of software tweaks which can make the keyboard more accessible for particular users. They can be turned on and off using the 'accessibility wizard' available from 'start menu/All Programs/Accessories/Accessibility' in Windows XP .

In Windows 7, the controls for these tweaks are found in the 'Ease of Access Centre' which is located under 'start menu/All Programs/accessories/Ease of Access/Make the keyboard easier to use' or by pressing the Windows Key + U together and then selecting 'Make the keyboard easier to use'.

- Press keys in combinations one at a time - helps with the use of shift, ctrl alt and windows keys.
- Ignore repeated keystrokes – prevent you accidentally pressing a key too many times.
- Play sound on pressing caps lock, number lock, or scroll lock – prevents accidental pressing of the lock keys
- Extra keyboard help – displays extra keyboard help whenever it is available, useful to non-mouse users.
- Use numeric keyboard instead of a mouse – allows the numeric keyboard to double up as a mouse

- On-screen keyboard – there is an on-screen keyboard available for use where physical disability prevents the use of a physical keyboard. A capture of the on-screen keyboard is shown in Figure 46. In Windows 7 the On-Screen Keyboard is available through the ‘Ease of Access Centre’. This can be accessed by pressing the Windows Key + U together. Then select ‘Start On-Screen Keyboard’. In Windows XP, the On-Screen Keyboard can be turned on from ‘start menu/All Programs/Accessories/Accessibility/On-Screen Keyboard’. A useful shortcut in Windows XP is also Windows Key + U which brings up the Utility Manager with controls for the On-Screen Keyboard, Narrator and Magnifier. There is also a setting in the Utility Manager to run these at start up.



Figure 46 : A screen capture of the Windows XP on-screen keyboard

Scanning Keyboards - A scanning on-screen keyboard can be used with a switch controller to allow users with limited physical ability to be able to type accurately into a keyboard. Scanning keyboards such as the ‘Tecla’ scanning keyboard, operate by means of iterative scanning of the keys. First the keyboard scans down highlighting each row at a predetermined interval (approximately 1s). The user hits the switch when the row containing the character they want is highlighted. The software then scans along the row highlighting each key in turn. The user hits the switch to trigger the key they want. Tecla is available for both PC and android devices.

Predictive Text – Predictive text was commonly used on old style mobile phones (with a number pad only) in order to speed up the ability to type alphabet characters. It uses a built in library of words to predict which words are possible from pressing each of the letter keys only once. When there is more than one possible word formable, it offers a list which the user can scroll through to get the word they desire. So for example the 6 key has MNO and the 3 key has DEF, so the combination 6,3 could be ‘me’ or ‘of’. In most instances the number code forms the unique word that the user wanted to type without the need for a list. This style of input can allow for larger buttons providing similar typing speeds to full keyboards. In a similar vein, in Microsoft Word and on modern mobile phones, the auto-proof function can spot badly spelt words and make suggestions for correction, limiting the number of keystrokes required and the need for accurate typing.

Speech Recognition – From the release of Windows Vista, speech recognition has been built into Windows and allows a user to control the machine, and to type using voice (speech-to-text or STT) and voice commands. Some of the more recent smart phones have similar tools inbuilt to allow voice commands and dictation or quick internet searching by means of voice. Speech recognition obviously requires a microphone, and can be found from ‘start menu/Control Panel/Ease of Access/Speech Recognition’ in Windows 7. It is not available by default with into Windows XP.

2.2.2.3 Keyboard shortcuts

In Windows there are a many shortcuts that can be used. Some are operational and used for manipulating windows or accessing programs and tools. Some are general and perform a similar task in windows and inside applications (like Microsoft Word or LibreOffice’s Writer). Some are specific to

a particular software package. Here we list the most frequently used shortcuts. For a complete list please refer to Appendix A.

Most Common Keyboard shortcuts for use with Windows:

- **F1:** opens the 'Help' for windows – or the application you are currently using.
- **CTRL + ALT + DELETE:** Bring up log off /task manager options
- **ALT + TAB:** Switch between open programs
- **ALT + F4:** Quit the program you are using
- **SHIFT + DELETE:** permanently delete and item (bypassing the recycle bin)
- **WINDOWS KEY:** brings up start menu (NB for this you can also use CTRL + ESC)
- **WINDOWS KEY + L:** Lock the computer
- **F10:** Activates menu bar options (gives good access to menu commands from the keyboard)
- **SHIFT + F10:** Opens a shortcut menu on the selected item (similar to a right click of the mouse)
- **CTRL + SHIFT + ESCAPE:** opens windows task manager
- **ALT + ↓:** Open a dropdown list
- **SHIFT:** Hold down shift whilst inserting a CD bypasses the Autorun feature.
- **ALT + SPACE BAR:** Displays menu allowing window manipulations (restore, minimise, maximise, close, move or resize the window)
- **CTRL + TAB:** Move between tabs in a Multiple Document Interface program (e.g. between open tabs of an internet browser)
- **ALT + F6:** Switch between multiple windows running in the same program.
- **CTRL + S:** Save

Most Common Program shortcuts in Windows:

- **CTRL + A:** Select All
- **CTRL + C:** Copy
- **CTRL + X:** Cut
- **CTRL + V:** Paste
- **CTRL + Z:** Undo
- **CTRL + Y:** Redo
- **CTRL + B:** Bold toggle



- **CTRL + P:** Print
- **CTRL + I:** Italics toggle
- **CTRL + U:** Underline toggle
- **ALT + 'an underlined letter from a program menu':** Opens that menu
- **CTRL + F:** brings up the find window

Most Common Folder and Explorer shortcuts:

- **F2:** Rename object
- **F3:** Brings up Windows Search
- **ALT + ENTER:** Show properties window

Most Common Internet Browser Shortcuts

- **F5:** refresh current page (also CTRL + R)
- **TAB:** cycles down from the URL bar to each link, dropdown or text input box on a web page.
- **SHIFT + TAB:** cycles back up the links, dropdowns and text input boxes
- **CTRL + TAB:** switches between open tabs
- **CTRL + +:** Zooms in
- **CTRL + -:** Zooms out
- **CTRL + N:** opens a new window
- **CTRL + T:** Opens a new tab
- **ENTER:** Selects the current link or dropdown or enters text inputted
- **CTRL + W:** closes the current tab
- **CTRL + U:** View Source code
- **CTRL + P:** Print
- **CTRL + D:** Add a bookmark
- **CTRL + H:** Show search history
- **CTRL + J:** Show downloads

Most Common Accessibility Shortcuts:

- **SHIFT (press 5 times):** Toggle Stickykeys
- **Right SHIFT + ⇩:** Toggle FilterKeys

- **NumLock** (Hold for 5 seconds): Toggles ToggleKeys
- **Left ALT + Left SHIFT + NumLock**: Toggles MouseKeys
- **Left ALT + Left SHIFT + PrintScreen**: Toggles high contrast

Most Common shortcuts using the special Windows keys:

- **Windows Key + R**: Run dialogue box
- **Windows Key + M**: Minimise all
- **SHIFT + Windows Key + M**: un-minimise all
- **Windows Key + E**: Open Windows Explorer
- **Windows Key + F**: Find files or folders
- **Windows Key + D**: Minimise windows to show the desktop
- **Windows Key + TAB**: Cycle through taskbar buttons
- **Windows Key + U**: Open the 'Ease of Access Centre'
- **Application Key**: shows a shortcut menu for the selected item

In Appendix A you will find a complete list of the shortcut key combinations available in Windows.

2.2.3 Touchscreens

Some PCs and in particular mobile devices such as smartphones and tablet computers, and all-in-one computers come equipped with a touchscreen. A touchscreen can detect the presence and location of a touch on its display. This allows direct interaction with the display without a requirement for an intermediate mouse or track ball type device.

In use, a touch screen works similarly to a mouse. The mapping of touchscreen to mouse is usually set to these standard options, although this is often configurable in software:

- Touch the screen = Left Mouse Click
- Touch the screen twice quickly = Double Left Click
- Touch the screen and hold = Right Mouse Click
- Touch and drag finger on screen = Click and Drag
- Touch and flick up/down/left/right = Scroll Page Up/Down/Left/Right (a flick is a short drag in that direction followed by a release)

Some touchscreens are capable of registering multiple touches simultaneously. This opens further options for interaction. On multi-touch devices there are further possibilities, including:

- Touch with finger and thumb and bring them together (pinch)= Zoom Out
- Touch with finger and thumb and drag them apart (spread)= Zoom In
- Touch with one finger then a second = Right Click

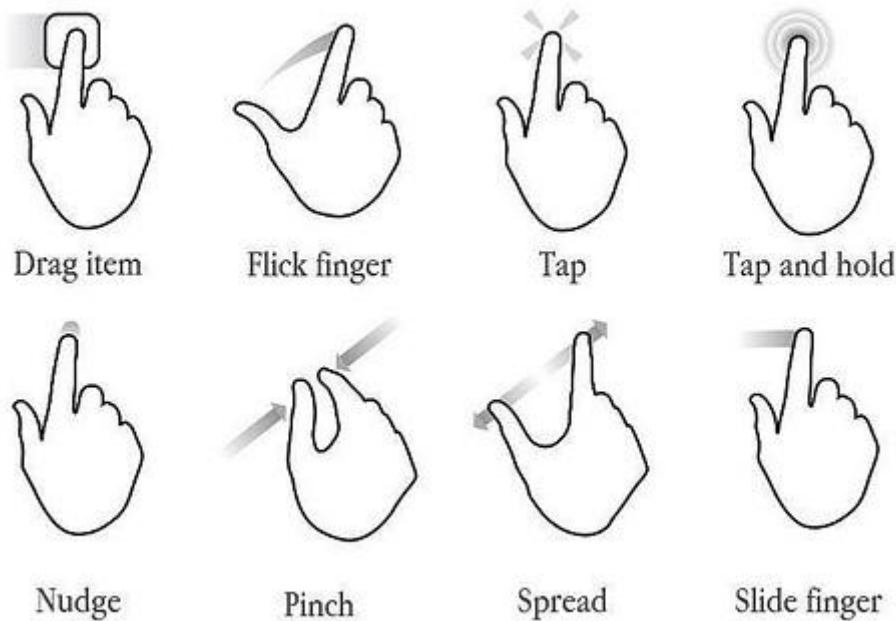


Figure 47 : Diagrams showing the modes of interaction with a touchscreen (Original works by Rachel Graves. Converted to Pencil by Frédéric Vandaele. URL: <http://evoluspencil.googlecode.com/files/touchscreen.zip>)

2.3 Output Devices

2.3.1 Display settings

2.3.1.1 Screen resolution

The screen resolution represents the number of separate pixels that can be displayed in each dimension. It is generally represented as two numbers, *width x height* (e.g. 640 x 480). If items on your screen appear too small, one simple way of increasing the size is to decrease the screen resolution.

In Windows XP to access the screen resolution settings, a right mouse click on the desktop background brings up a menu. Select 'Properties' from the menu, and then select the settings tab. This will bring up the dialogue shown on the left in Figure 48. (Note the shown dialogue is for a two screen system. If your setup has multiple screens you can click on the blue screens numbered 1 and 2 and edit their resolutions separately). Under this there is a slider bar for 'Screen Resolution' with a number of possible options. The available options will vary and be dependent on the graphic capabilities of your computer, but it is usually possible to drop the resolution, thus increasing the size objects appear on your screen.

In Windows 7 right click the desktop background and select 'Screen Resolution'. This will bring up the dialogue shown on the right in Figure 48. On this dialogue there is a dropdown slider bar for 'Screen Resolution' with a number of possible options. The available options will again vary and be

dependent on the graphic capabilities of your computer, but it is usually possible to decrease the resolution, thus increasing the size objects appear on your screen.

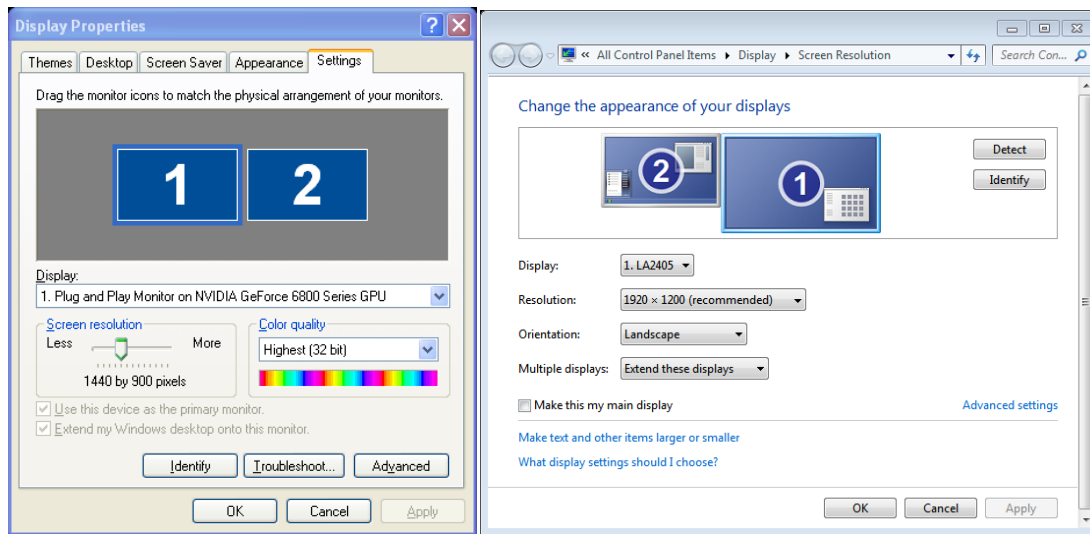


Figure 48 : The 'Display Properties' dialogue in Windows XP (left) and Windows 7 (right)

2.3.1.2 Display optimisation

The software controlling the graphics on your computer should also allow adjustment of brightness and colour. Depending on what graphics hardware your machine uses, the ways to access the settings will vary. A typical NVIDIA control panel running on Windows XP is shown in Figure 49, and as can be seen there are sliders to adjust brightness, contrast, digital vibrancy, gamma and image sharpening. This control panel can be selected from the Advanced tab in the 'Display Properties' window. This is where you should find specific driver software for your specific graphics card if available (there may also be a direct shortcut to it from the dropdown list found by right clicking on the desktop background).

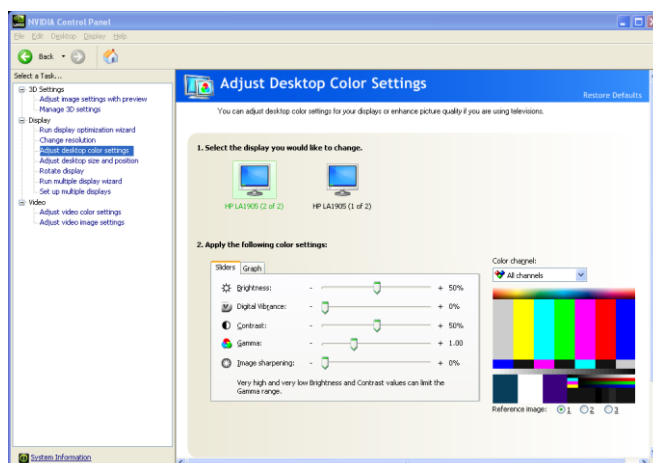


Figure 49 : the NVIDIA control panel

Windows 7 provides a 'calibrate colour' routine which allows a step by step adjustment to get your colour brightness, contrast, gamma etc set up to be optimised for your preferences. To access this right click the desktop background, select 'Personalize' and then 'Calibrate color'. You will then need to follow the on-screen instructions.

2.3.2 Monitor settings

Most modern monitors allow adjustments to be made to the brightness, contrast and colour using the monitor's menu. The means of adjusting these is individual to each monitor make and model, and so describing access to these menus here can only be generalised. An example of the button set on an HP monitor is shown in Figure 50, and an example capture of the menu that it brings up is shown in Figure 51.

There is usually a menu button, a pair of + and – buttons, and an OK button. The menu button should bring up the menu. The plus and minus buttons should allow you then to scroll through the options, and the ok button should allow you to access menu items. Sub menus are then navigated in the same method until the desired settings have been achieved. If no buttons are pressed on the monitor for a prescribed time period (often around 30 seconds), the on-screen menu will close.



Figure 50 : An example of the buttons that may be found on a monitor



Figure 51 : An example of the menu of options that may be available from the monitor settings menu

2.3.3 Software display settings

Windows settings:

In windows you can alter the appearance of the pages you view. It is possible to increase the size of text in title bars, dropdowns and menus across your Windows programs. This is done in Windows XP from the 'Display Properties' 'Appearance' tab. To access this, right click on the desktop background and then select the appearance tab. There is a dropdown here which has the options 'normal', 'Large Fonts' and 'Extra Large Fonts' as shown in the left hand capture in Figure 52. In Windows 7 this setting can be accessed by selecting 'Control Panel' from the Start Menu and then selecting 'Display'. You will be presented with radio buttons for smaller, medium or larger text as shown in the right hand capture in Figure 52.

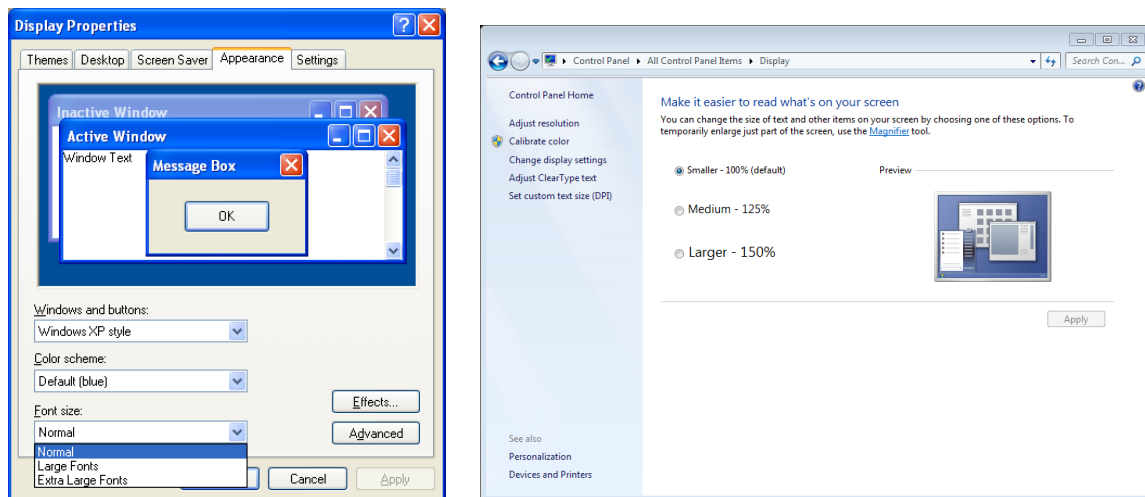


Figure 52 : The display properties appearance box in Windows XP (left) showing the font size dropdown, and the Display control panel item in Windows 7 (right) showing the text size radio buttons

Application specific settings:

Some applications allow you to switch settings to within them to make the page clearer by zooming either the window (text and graphics are enlarged) or the text size (text only is enlarged).

- **Window Zoom**

Within the View menu of many applications you will find the zoom level. Increasing the zoom percentage will make the text and images larger, decreasing the zoom percentage will make the text and images smaller. Within a web browser window, you can use the view or settings menu or by using **CTRL + +** will zoom in, and **CTRL + -** will zoom out.

Internet Explorer provides these settings under the Page/Zoom menu

Google Chrome provides these settings under the spanner (customise and control) menu

Mozilla Firefox provides these controls under the View/Zoom menu.

- **Font Size**

It is also possible in some browsers to zoom the text without zooming other content.

Internet explorer provides these setting under the Page/Text Size menu.

Google Chrome Provides these settings under the spanner (customise and control)/Options/Under The Bonnet/Web Content/Font Size option.

Mozilla Firefox provides these controls under View/Zoom/Zoom Text Only. This is a toggle which switches the normal zoom control to zoom text only when checked.

2.3.4 Sound settings

Adjustment of volume/mute from software

To adjust the volume using the software, you can access the control from the task bar. The volume is controlled by selecting the speaker icon (as shown in Figure 53). Clicking on the icon opens a volume

scroll bar which can be slid up and down with the mouse or up/down keyboard arrows. There is also a mute button on this control which when clicked will mute all sounds from the computer and show the volume muted icon (also shown in Figure 53). Clicking the button again will unmute the sound. When the sound is muted, the speakers icon on the task bar itself will also show as the volume muted icon.

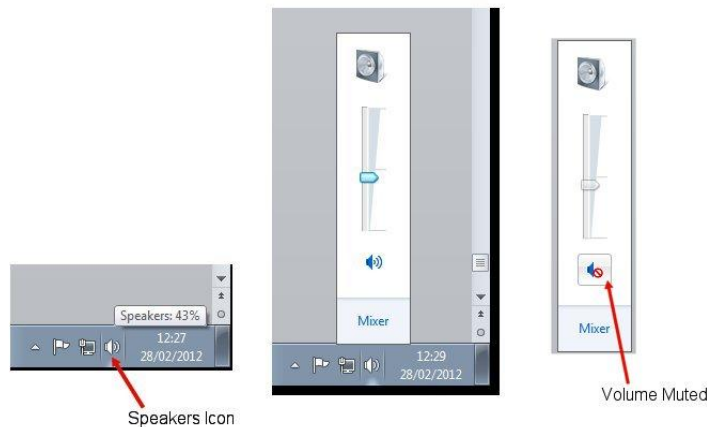


Figure 53 : Adjustment of the sound volume from using Windows 7

Some applications have volume controls built in on top of the overriding Windows volume level. Media players often have a built in volume control within the media window. These are often represented in a very similar way to the standard windows controls.

Adjustment of the volume using hardware

Hardware adjustments of the volume are usually made by means of dials and buttons on the speakers themselves. The speakers will often have a volume dial and a power switch allowing control of the volume directly from the sound source. If the volume is up on the speakers and you are experiencing a loss of sound, it is worth checking that the sound is not muted or turned very low in the software (see Figure 53).

2.3.5 Introduction to assistive output technologies

Both Windows 7 and Windows XP have some accessibility features.

To access the 'Ease of Access Center' in Windows 7 go to 'start menu/Accessories/Accessibility/Ease of Access Centre', or by pressing the Windows Key + U. This will bring up the dialogue shown in Figure 54. The dialogue is accompanied by audio narration of its content. Its main options are to start the Magnifier, Narrator and High Contrast functions.

To access the 'Utility Manger' in Windows XP, press the Windows Key + U (This brings up the dialogue boxes shown in Figure 55). This allows access to the Narrator, Magnifier and On-screen Keyboard functionality. Use 'Start/Control Panel/Accessibility Options' to access further accessibility aids, such as Keyboard settings, sound settings, high contrast mode, mouse settings etc. (as seen in Figure 56) There is also an Accessibility Wizard which allows you to configure Windows XP to suit

your needs. Find this under 'Start/Control Panel/Accessibility Options/Configure Windows to work with your vision, hearing and mobility needs'.

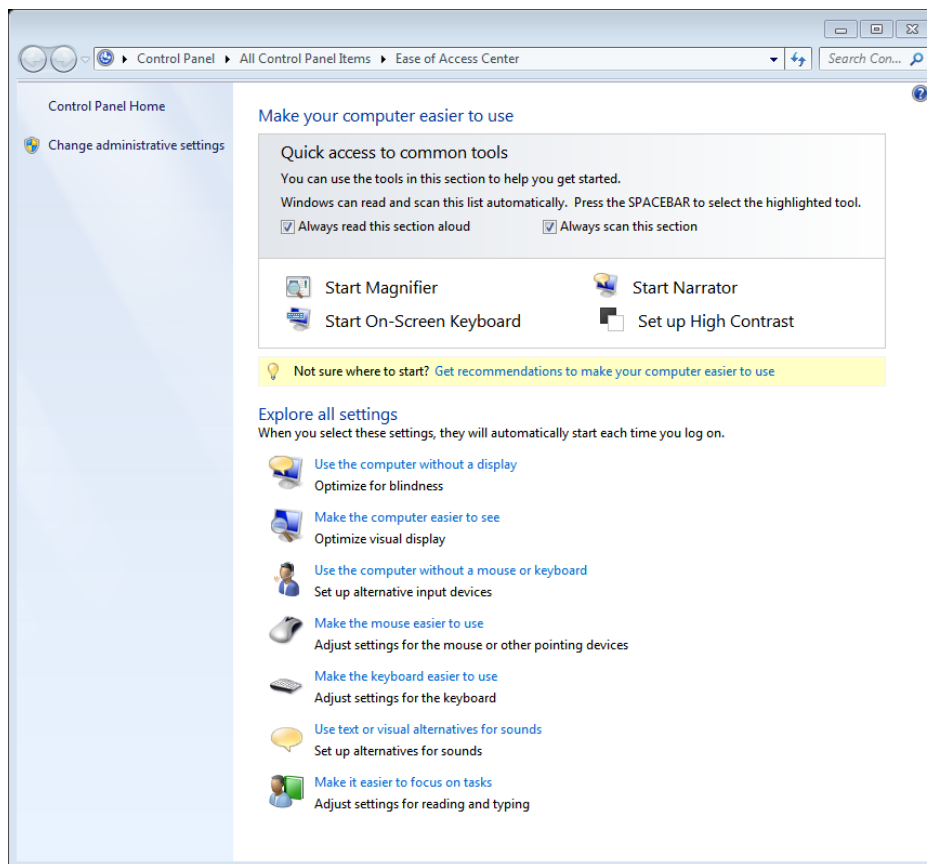


Figure 54 : The 'Ease of Access Centre' window in Windows 7

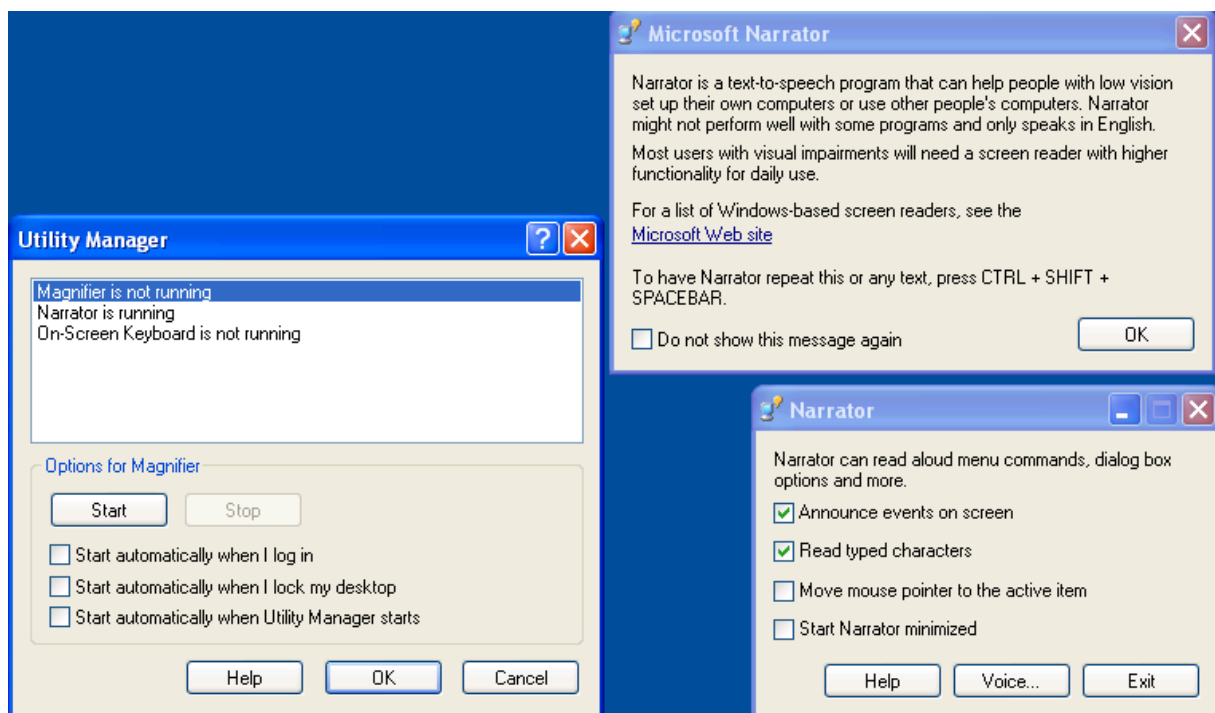


Figure 55 : The Utility Manager brought up by Windows Key + U in Windows XP

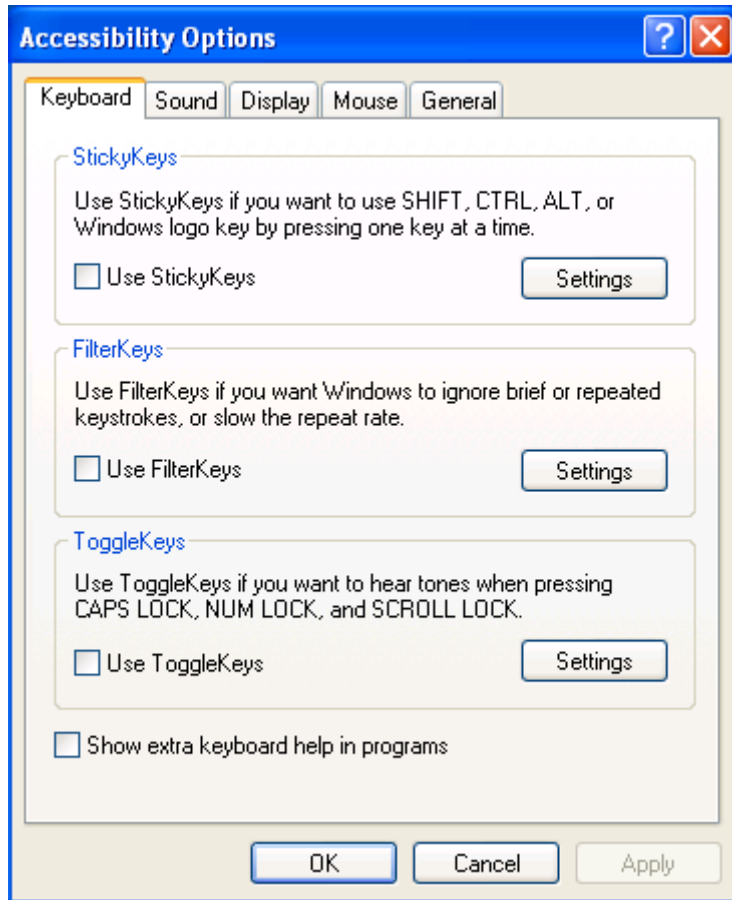


Figure 56 : Accessibility options accessed on a Windows XP machine

The Screen Magnifier

The Screen Magnifier when opened places a strip at the top of the screen where a larger version of part of the screen (initially following the mouse pointer) is displayed. An example of this is given in the photograph in Figure 57. The strip can be resized by dragging its lower edge. In Windows 7, if the magnifier strip is dragged with the mouse it becomes a free floating magnifier box which magnifies what it is dragged over. In Windows XP the box can be moved and resized, but does not magnify whilst being dragged.

If the settings button is clicked the way the magnifier behaves can be altered. It can be made to follow the mouse pointer, the keyboard focus, or the text insertion point. It also has a colour inversion option. The magnifier options have similar functionality in both Windows XP and Windows 7.

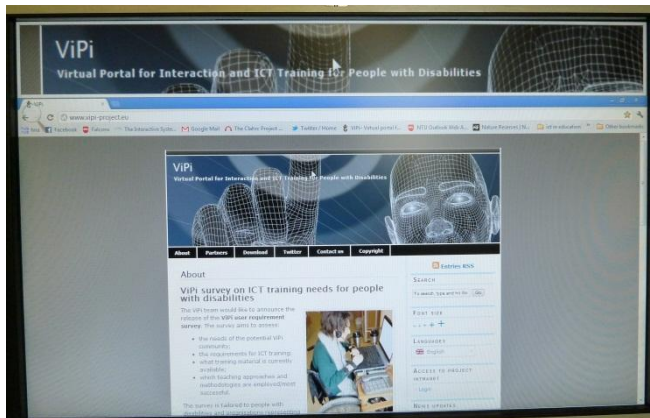


Figure 57 : A screen magnifier in use – showing the magnifier strip at the top of the display

Microsoft Narrator

The Narrator – also started from the ease of access menu – will read aloud the screen contents in focus, and also voice the inputs used from the keyboard. It is in essence a screen reader but with fairly limited functionality. Though much less sophisticated than a full on screen reader program, it is available by default on all Windows machines allowing a quick and easy screen reading option when specialised and often expensive software is unavailable.

High Contrast

High contrast settings are available from the Ease of Access Centre, and can be set up to a user's personal preference using the 'Personalization' window. The theme can then be turned on and off with the shortcut 'Left ALT + Left Shift + PrintScreen' or using the check box in the Ease of Access Centre. There is a selection of high contrast themes available in Windows 7 with variations of white on black, black on white and with different colour variations. There are also options to change the desktop icons, mouse pointers and task bar settings available from the Personalisation window.

Text-to-speech programs

Although not provided by default with a Windows installation, there are many bespoke text-to-speech (or TTS) applications available varying from free to expensive with a multitude of voices, accents, languages and settings. For a user that relies on audio output such a program may be a worthwhile addition.

For further information on free text to speech software, the following resources may be useful:

- <http://www.naturalreaders.com/index.htm>
- <http://www.dyslexia.com/helpread.htm>

Screen readers

Again, although not provided in a Windows installation by default, it is worth mentioning in this course that additional Screen Reader software is available, both commercially and non-commercially. Screen readers are even more versatile than Text-to-speech programs providing additional functionality through shortcuts to allow different modes of use. They aim to both identify and

interpret what is (or would be displayed) on-screen. The interpretation is imparted on the user via text-to-speech. Screen readers can be of use in situations where the user is blind, visually impaired, has a learning disability, or cannot read.

Examples of screen readers shipped with some specific operating systems are: Microsoft Narrator, VoiceOver, EmacSpeak, Yasr, SpeakUp, Gnome ORCA (Linux environments) and NVDA (Non-Visual Desktop Access). There are also commercial packages – which are more widely used – such as JAWS, Window-Eyes, Dolphin and ZoomText Magnifier/Reader.

Refreshable Braille displays

For Braille readers there is the possibility of using a refreshable Braille display. Although expensive and limited to low numbers of Braille cells (18-40) these displays can allow screen reader output to be displayed in Braille.

2.4 Using the Computer

2.4.1 Desktop Icons

The desktop will usually contain a number of shortcuts (and example is shown in Figure 58). Double clicking these icons with the mouse is the quickest way to open a program or file on your computer. The programs you use most regularly should have a shortcut on your desktop, and if they don't you can make one by either dragging an item from your start menu onto the desktop, or by dragging a folder or file onto the desktop whilst holding the 'Alt' key.



Figure 58 : A capture of a desktop showing a number of shortcut icons which can be used to open programs, files and folders.

2.4.2 The Task Bar

The task bar is another fast way of opening a program, or switching between programs, and should also present you with a more comprehensive list of the programs available on your PC. The task bar is most often found at the bottom of the screen, although it can be repositioned at the sides or top. Some computers are set so that the task bar is visible all the time, but on others you must reveal it by either:

- Pressing the Windows key on the keyboard
- Dragging the mouse to the bottom of the screen (or the edge of the screen where it has been repositioned).

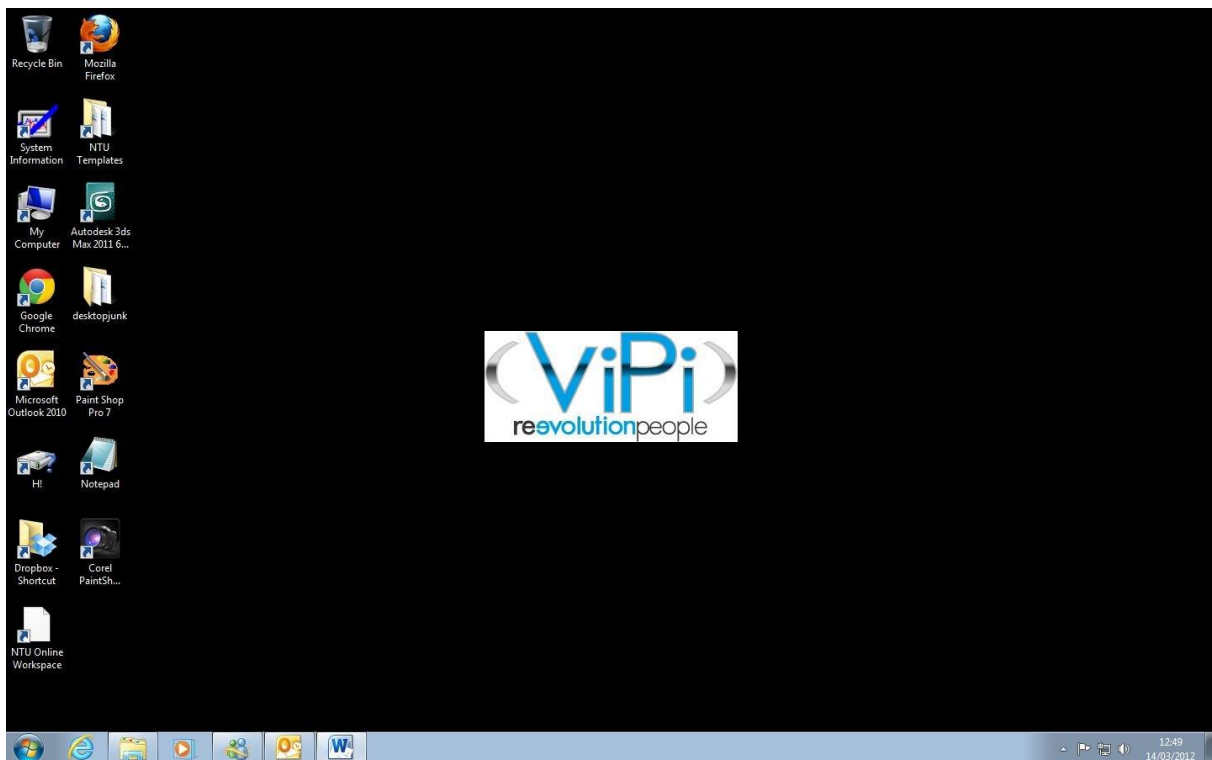


Figure 59 : A screen shot of the desktop with the task bar visible

The task bar gives access to a number of items:

- The start menu – in Windows 7 click on the windows symbol at the left hand side of the menu. In Windows XP click on the word 'Start'. This menu contains a list of program shortcuts as well as shortcuts to access the folder system, control panel, devices and printers and help and support.
- Panels representing programs that are already open. Clicking on the outlook icon for example would toggle between showing the open Outlook window and hiding it. In order to bring an open program to the foreground of your desktop, simply click its icon on the task bar.
- The time and date can be found on the right hand side. Clicking on this brings up a calendar and clock.
- A speakers icon – which gives access to the volume control and mute control in order to quickly adjust the computer's sound settings (see Section 2.3.4).

- Other shortcuts – there may be other shortcuts pinned to the task bar allowing access to controls or programs. These may have been placed there by you, or by the program itself during installation.

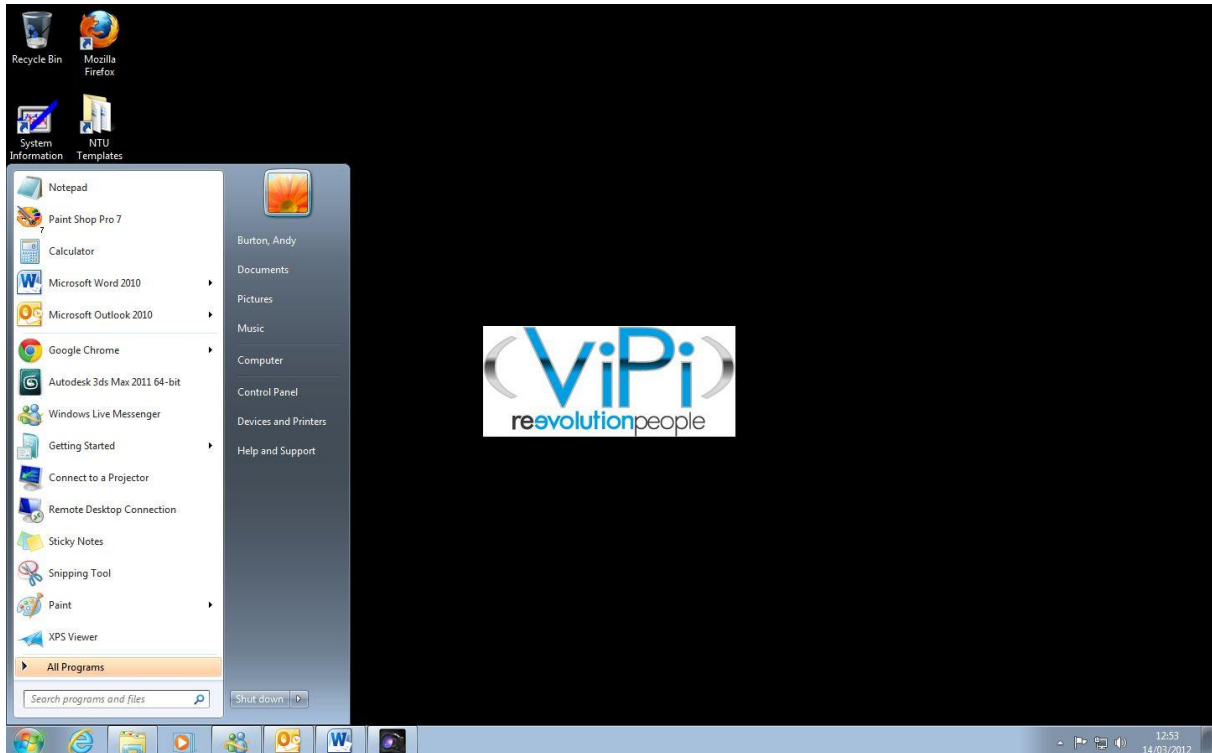


Figure 60 : A capture of the desktop with the task bar and start menu visible

2.4.3 The Start Menu

The Start Menu (shown in Figure 60) provides the main means for starting programs. First bring up the task bar and then press start, or simply hit the Windows Key on the keyboard which will automatically open the task bar and Start menu.

Many of the items in the Start menu are simply shortcuts, but some of the items are lists. The prime example of a list is the 'All Programs' option. You can tell it is a list as it has an arrow by it. Clicking on 'All programs' opens a list of all the programs and program groups available. Some actual programs do not show up in the initial list, but in a sub-list. For example to find the calculator program you must select 'All Programs' and then 'Accessories' where you will find the calculator shortcut.

2.4.4 Windows

Windows are the containers for the programs you have running on your desktop. You can manipulate them so that the ones you want are visible and the ones you do not want to see are hidden or closed.

To close a window you must click on the 'x' icon in the top right hand corner (see the example window in Figure 61). Doing this will permanently close the window. If you have unsaved work, you will be prompted to save it before the window closes. To maximise the window (which will cause the window to fill the screen) click on the square icon next to the x. In a maximised window this icon will

then change to a 'restore down' icon (two boxes one in front of the other) which when clicked will cause the window to return to its previous size. To minimise the window click on the line icon next to the restore/maximise icon. Doing this keeps the window available to you, and in order to reopen it you click the relevant icon which appears on the task bar.

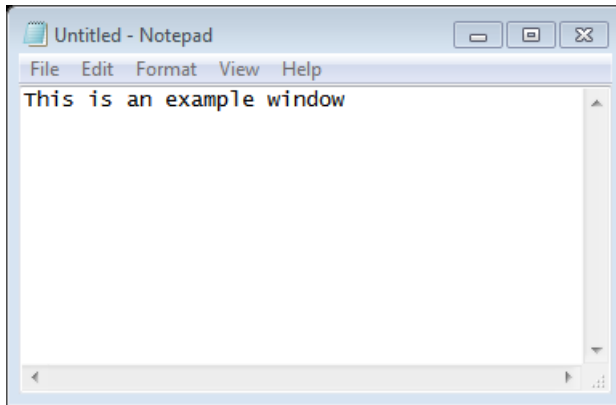


Figure 61 : An example of a window

To move a window, the user needs to click and drag on the title bar of the window. Windows can also be resized by clicking on the borders of the window and dragging. Windows 7 offers some special functionality of maximising by dragging a window to the top of the screen, or maximising over half of the screen by dragging the window to the left or right of the screen. Many windows will have a list of dropdown menus at the top of the page below the title bar. In this case we have File, Edit, Format, View and Help. Clicking these opens further menu options.

Often the contents of a window are too long or wide for the available screen area, and in such cases a scroll bar often appears on the right hand side and/or bottom of the window (as shown in Figure 62). In this case the content can be viewed by clicking on and dragging the scroll bars with the mouse, or by using the arrow keys on the keyboard.

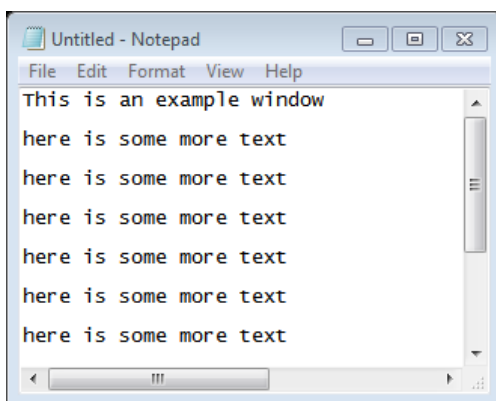


Figure 62 : A window showing scroll bars due to oversized content

2.4.5 Help

Computers contain a lot of information to help you use them built into their operating systems. An important and useful feature in Windows is the Help system. The operating system itself and most programs will have built in help files that allow users to find answers to questions they may have.

In order to access the help system, you can press F1 on the keyboard or click 'help' from the program's menu system, or there is also the 'Help and Support' link in the Start menu. If you press F1 whilst using a program it will bring up help files for that specific program. If you click first on the desktop background it will bring up general Windows help (as shown in Figure 63 for Windows 7 and Figure 64 for Windows XP). One of the first links it brings up is that of 'Learn about Windows Basics' (in Windows 7) and 'Windows Basics' in Windows XP. This help section provides a lot of help relating to the sorts of topics about which we are learning here, and provides hands on practice and experience in using the features of Windows. It may be advisable to have a read through some of the material there in order to familiarise yourself further with using a PC.

When you open the help system there is usually a list of menu options and also a search bar. If you type a query into the search bar and press return – or click on the magnifying glass, the help system will search for results that will help you. You may also navigate to the correct area of help by double clicking the links provided in the help menus.

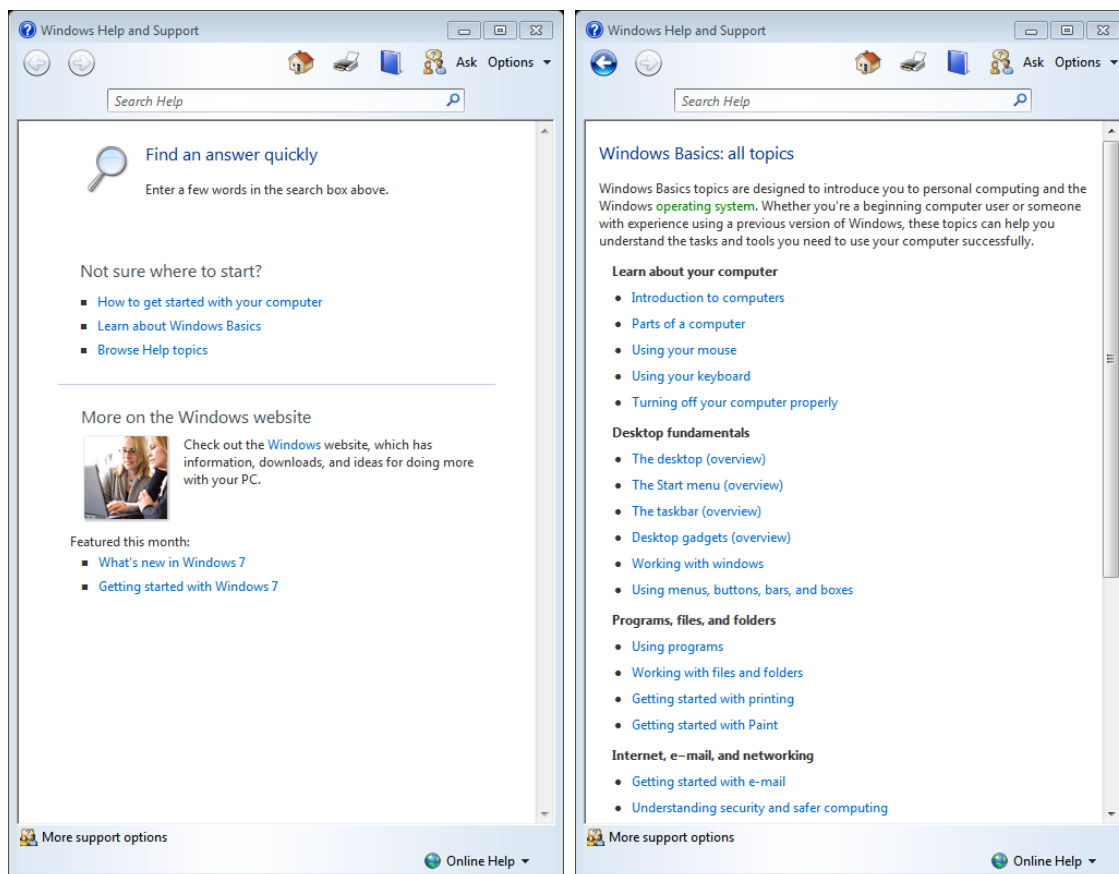


Figure 63 : The Windows 7 Help menu (left) and the window having clicked 'Learn about Windows Basics' (right)

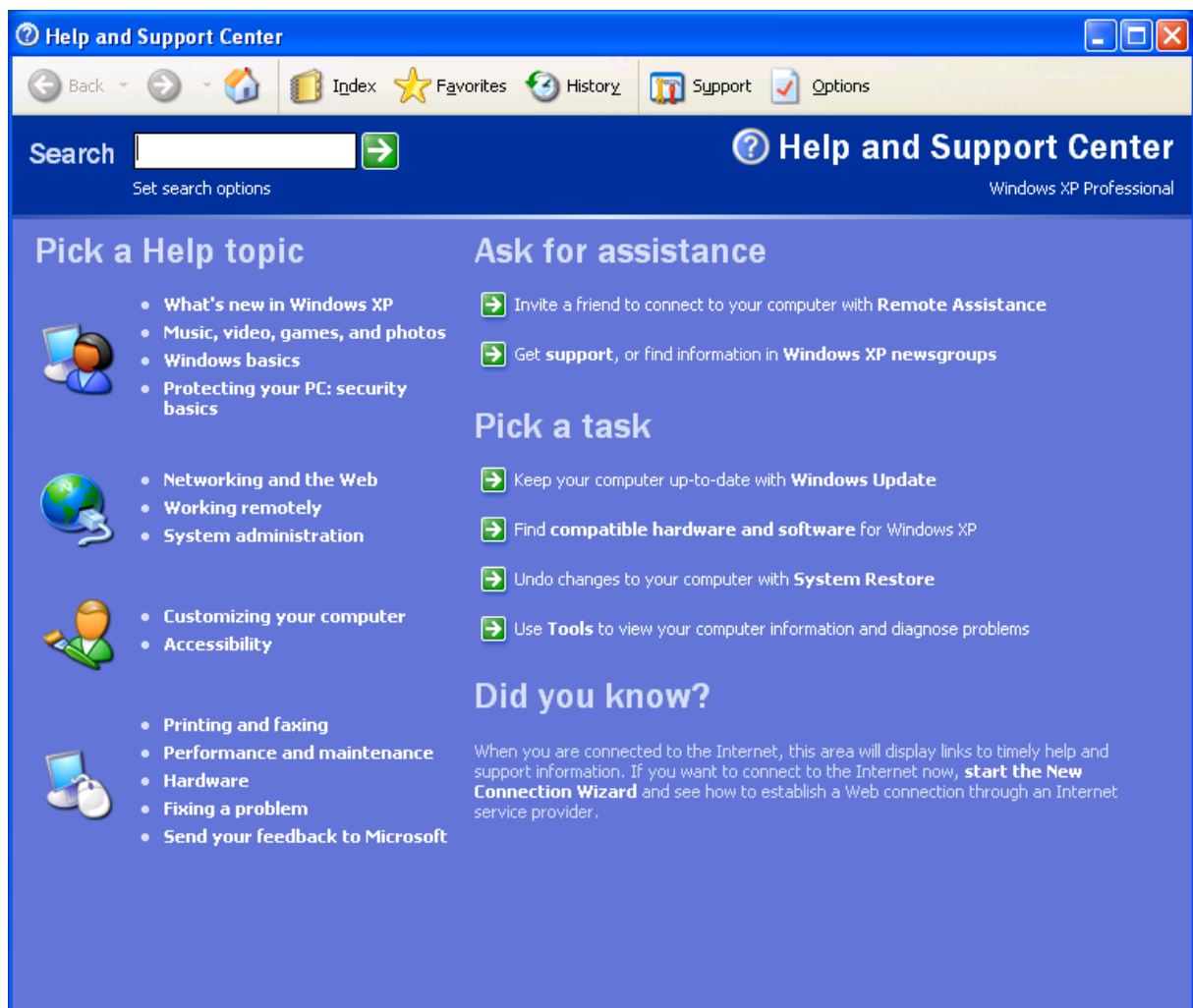


Figure 64 : The Windows XP Help system window

2.4.6 Files and Folders

It is important to have some understanding of files and folder structures. Mostly our documents will be saved in the Libraries folders available from the Windows Start menu (in Windows 7 they are called Documents, Music, Pictures and Videos). Within these folders, we can create sub folders. This can be done by right clicking in any open folder and selecting new and then folder. Clicking twice (slowly – not a double click!) on the folder you have created will allow you to rename it. You can then move files into the folder by dragging them onto it.

In Figure 65 the user has created a folder called 'Folder' in his documents folder. In this the user has created three sub-folders (called sub-folder1, sub-folder2 and sub-folder3). In sub-folder1 the user has saved 3 image files. We can tell they are image files because of the .jpg file type. We can see that folders are shown with a yellow folder icon. If the view is changed to medium, large or extra large icons (by using the right click menu), we can get a preview of the contents of the folders (shown in Figure 66). With this view, the files may also show a preview of what is contained in them.

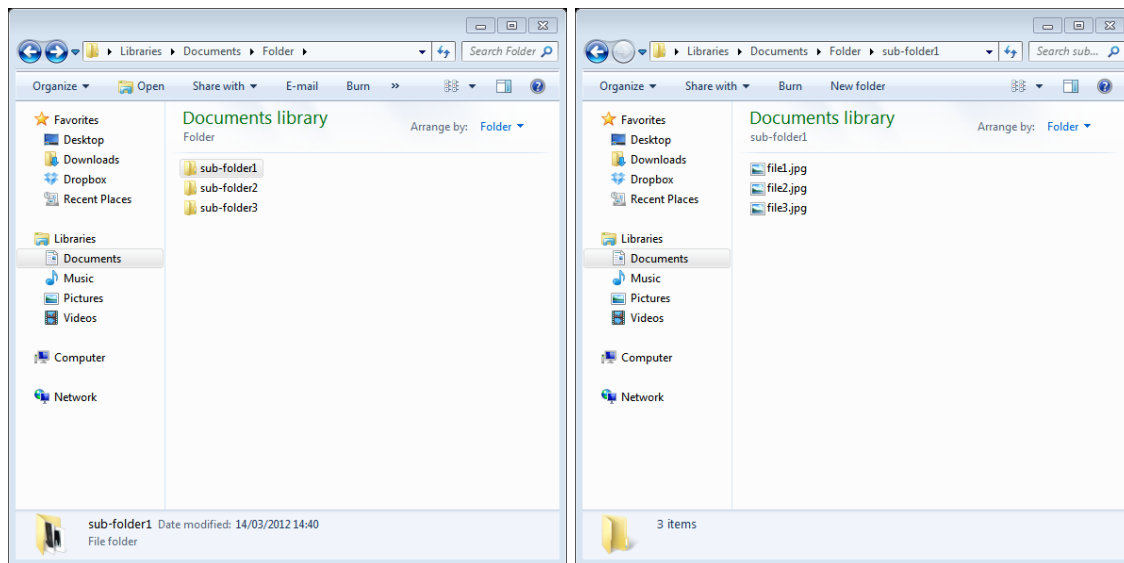


Figure 65 : Some example folders showing a structure where files are saved into a sub-folder

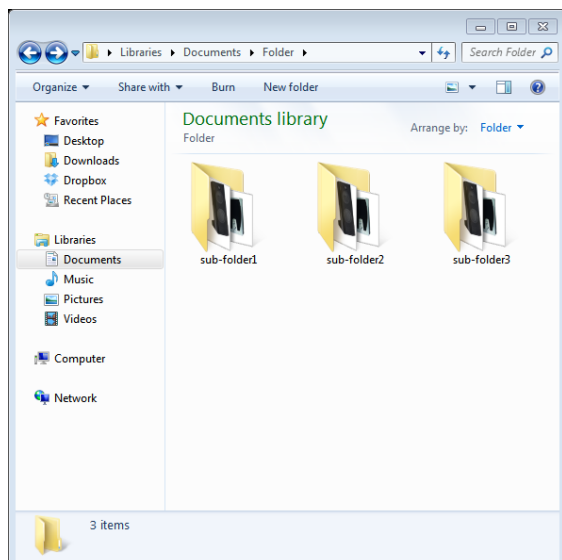


Figure 66 : Folders in the Large icons view give a preview of their contents

2.4.7 File Types

Windows can be set up to show what are known as file extensions. These are the (usually 3 or four character) suffixes that come after the dot in the file name. Jpg is the example given in the folders in Figure 65, which is an image file. The setting to show file extensions can be found from start menu/control panel/folder options/ and in the View tab uncheck the 'Hide extensions for known file types' box.

What follows is a non-exhaustive a list of common extensions.

Text files and documents – these are documents that may be edited in a word processor or notepad type application

- .doc or .docx - Microsoft Word document

- .odt – LibreOffice Writer document
- .txt – plain text file
- .rtf – rich text file
- .pdf – Adobe portable document format

Spreadsheets and databases – these are files created by a spreadsheet or database program such as Microsoft Excel or Microsoft Access

- .xls or .xlsx – Microsoft Excel spreadsheet
- .ods – LibreOffice Calc spreadsheet
- .db – database file
- .mdb – Microsoft database file
- .csv – commas separate values file
- .xml – Extensible markup language file

Web pages – these are internet page files

- .htm or .html or .xhtml – hypertext markup language
- .css – cascading style sheet (applies formatting to html documents)
- .php – hypertext pre-processor file
- .js – javascript file

Images and pictures – these are image files, they may be photos, logos, graphs or charts, clip art etc..

- .bmp – bitmap (uncompressed)
- .tga – Targa graphic
- .jpg – compressed image
- .gif – graphical interchange format file
- .tif – tagged image file
- .eps – encapsulated postscript file (a vector image format)

Sound and music files – these may be music files, system sounds, audio recordings etc.

- .mp3 – compressed music file

- .wav – uncompressed (lossless) sound file
- .wma – Windows Media audio format

Video files – these are video and sound combined, the likes of tv programs, films, and camcorder recordings. There are many different formats for this type of file.

- .mp4 - MPEG-4 multimedia file
- .mov – Quicktime movie
- .wmv – Windows Media video file
- .mpg – standard compressed video file
- .flv – Flash video file
- .avi – audio/video interleave file

Program files – these are executable files which means they are programs that can run on your machine. You should be wary of running any files with these extensions if they have come from an untrusted source such as email or internet.

- .bat – DOS Batch file
- .exe – Windows executable file
- .com – DOS command file
- .jar – Java archive file

System Files – these files are used by your computer and its programs while they are working. You should not need manually edit, move or remove these files.

- .dll – dynamic link library (precompiled code)
- .drv – device driver
- .ico – an icon file
- .sys – a Windows system file
- .cab – a Windows cabinet file

Compressed files – these are archive files – often used when backing up work or transferring work between machines via stick, email or internet. The files will contain either a single file or lots of files compressed into a smaller file, but still containing all the data of the original files. An unzip program is required to decompress them and use the files they hold.

- .zip – a zipped archive
- .rar – WinRAR compressed archive

Slideshow files – these are files created by a presentation application such as PowerPoint

- .ppt or .pptx – Microsoft PowerPoint presentation
- .pps – Microsoft PowerPoint show
- .odp – LibreOffice Impress presentation

2.4.8 Moving and Copying Files

It is important to be able to easily find your files on your computer, and to enable this it is important to be able to store your files in a neat and tidy structure. To achieve this it helps us to be able to move files around and group them together in folders. There are several ways to achieve moving files.

2.4.8.1 *Moving and copying with the mouse*

Moving files and folders with the mouse can be achieved using a process of ‘drag and drop’. Firstly the user needs to open the location of the file they want to copy or move. Secondly the user needs to open the location they want the file to end up. To move the file to the new location (on the same drive) simply select the file by clicking on it, and then drag the file to the new location, and drop it there. To move multiple files, select them one at a time whilst holding CTRL (this will allow the user to select multiple files). Or to select many files in a list select the top one, hold Shift and then select the bottom one (this will select the top and bottom files and all files in between). Once all the files are selected, perform a drag and drop on the group. To create a copy of the file in the new folder and to leave the original in the original folder, hold CTRL when you drop the files. It should be noted that if the desired location is on a separate drive this process will copy the file rather than move it by default. To move the file between drives (removing the original) hold Shift when dropping the files.

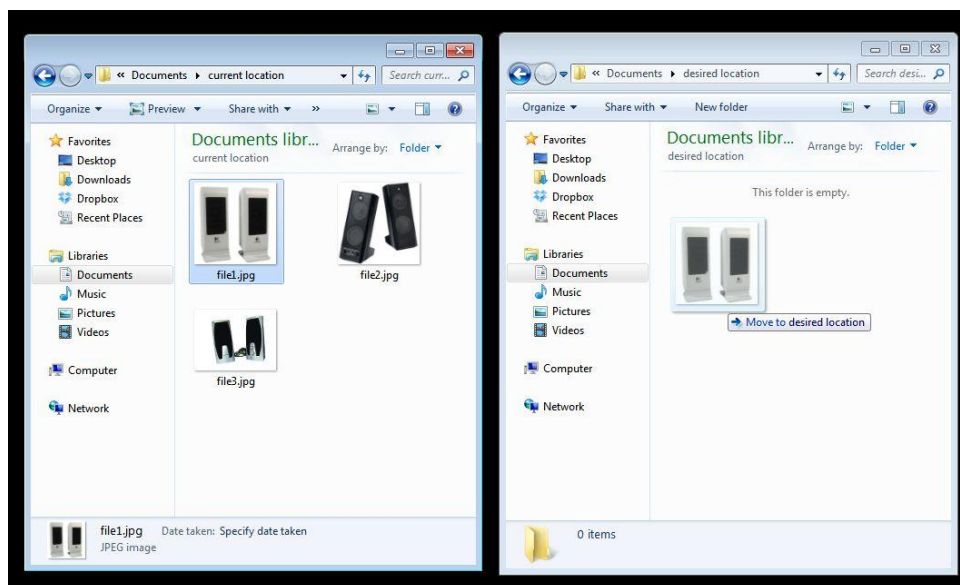


Figure 67 : dragging and dropping a file (file1.jpg) from its current location to a new desired location

2.4.8.2 Moving and copying with ‘cut’, ‘copy’ and ‘paste’

If preferred, moving and copying files can be performed using cut, copy and paste commands (or their shortcuts CTRL + X, CTRL + C and CTRL + V respectively). First the files that are required to be moved must be selected using the mouse or the keyboard. Next the user presses CTRL + C to copy the files or CTRL + X to move the files. The user then selects the location to which the files need to be moved. CTRL + V will complete the copy or paste.

2.4.8.3 Deleting (and undeleting) Files and the Recycle Bin

Files can be deleted from a directory by first selecting, and then pressing either:

1. Delete key
2. Right click the mouse on the file and select ‘Delete’ from the menu.
3. CTRL + D

All of the above will prompt the user ‘Do you really want to delete the file?’. A Yes reply will move the file to the ‘Recycle Bin’. A no reply will cancel the action. To avoid using the recycle bin, a combination of SHIFT with 1 or 2 above can be used. This will prompt the user as to whether they want to permanently delete the file. A file that has been moved to the recycle bin can be retrieved by double clicking the ‘Recycle Bin’ icon from the desktop, right clicking on the file that was deleted and selecting ‘Restore’. The item should reappear where it was deleted from. The recycle bin can be emptied to permanently remove files from the machine and to free up disk space. This is done by Right clicking on the Recycle Bin and selecting ‘Empty Recycle Bin’ from the menu. This action will permanently delete all of the items currently in the recycle bin.

2.4.8.4 Backing up data

It is generally a good idea to back up your important data. Computer disks can become damaged over time, or by impact or fire, and sometimes data gets corrupted and becomes unreadable. It is sensible therefore to make copies of important files (known as backing up files) onto a separate disk, external drive (USB hard drive or pen drive) or a network drive (e.g. Dropbox, SkyDrive, etc.) on a regular basis.

Some desktop computers will have multiple disks in them where files can be stored on both to ensure protection from a disk failure. A portable drive stored in a different location, or the use of a network drive will protect also from local environment hazards such as flooding or fire which could destroy all local drives.

2.5 Making and Saving a simple Document and a simple Spreadsheet

A word processor is one of the most useful programs on your computer. It enables you to create, modify and read all kinds of documents, such as letters, reports, and even courses like this. Before PCs became commonplace, most business communication had to be written on typewriters. Today, typewriters have largely been replaced by word processing software. Some of the advantages of using a word processor:

- you can correct what you have written or insert extra text;
- you can move text from one part of the document to another;
- you can print your document easily using a printer connected to your PC;
- you can save your document on the computer and re-edit it later;
- you can read documents written by other people.

Good examples of word processors are MSWord and LibreOffice Writer. Both will be explained in the following chapters.

2.5.1 Making, saving and printing a document in MSWord

2.5.1.1 The Basic Layout

MSWord can be downloaded at <http://office.microsoft.com>.

Note: it is NOT free.

To launch MSWord using a mouse (See Figure 68)

- Click the **Windows logo start button on the task bar** to display the Start menu (normally located at the bottom left on the PC screen).
- Click the All **Programs** submenu.
- Find **Microsoft Office** in the list of software programs that will appear and click on it.
- Then you click on **Microsoft Word** in the list of software programs that will appear and MSWord will start.
- MSWord will open with a blank document. You will see the flashing cursor at the top left corner of the page, ready for you to start typing.

To launch MSWord using the keyboard (See Figure 68)

- Hit the Windows Key to bring up the program menu
- Use the up arrow key to scroll to all programs
- Hit return to select
- Use the up and down arrow keys to locate Microsoft Office in the list
- Hit return to select
- Use the up and down arrow keys to locate Microsoft Word
- Hit return to run the program

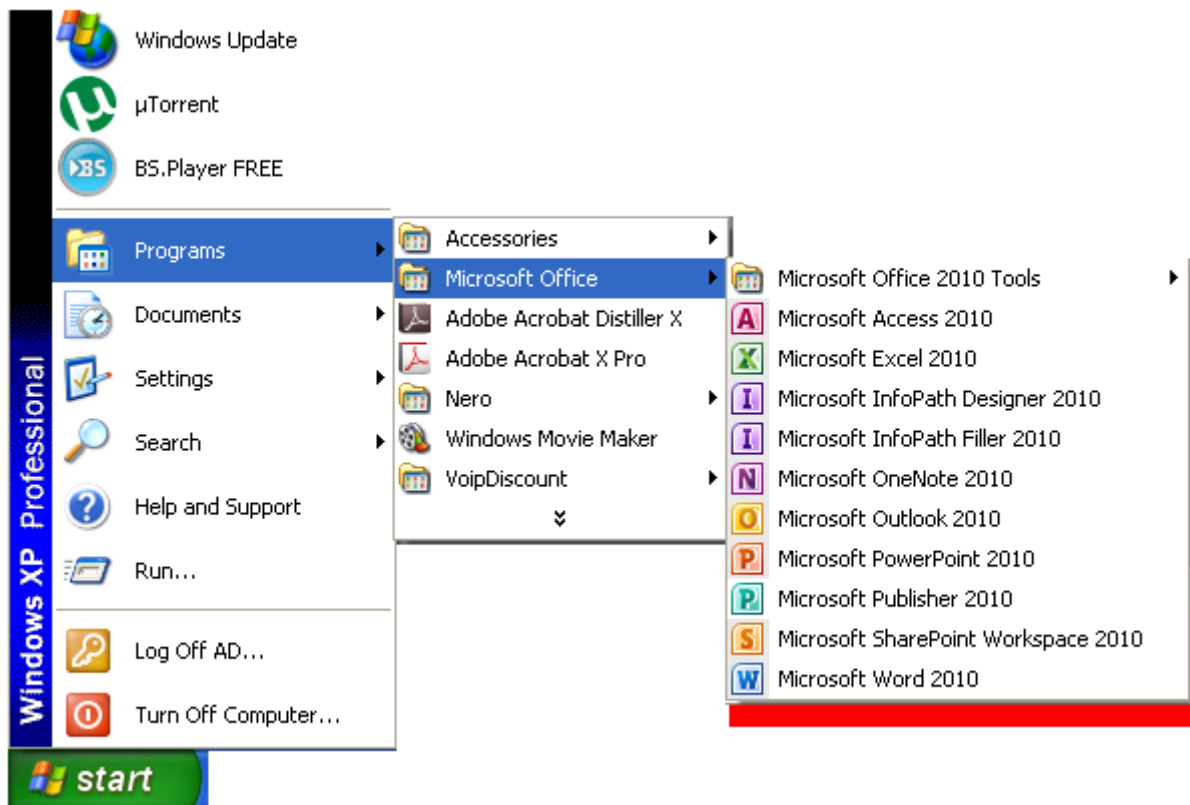


Figure 68: Start Menu – Word 2010

At the top of every program that runs on Windows you'll find the title bar. The title bar tells you the name of the program and the name of the current open file, for example Document 1 - Microsoft Word. Figure 69 shows the names of the different elements.

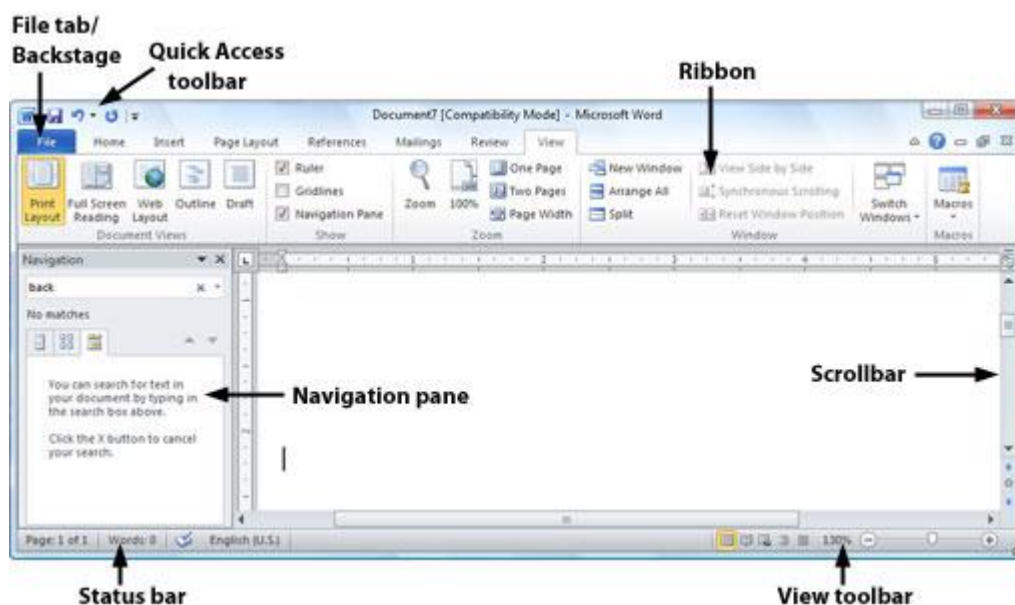


Figure 69: Word 2010 opening screen

The Quick Access Toolbar is in the top-left side of the window. To begin, click the Customize button as shown in Figure 70.

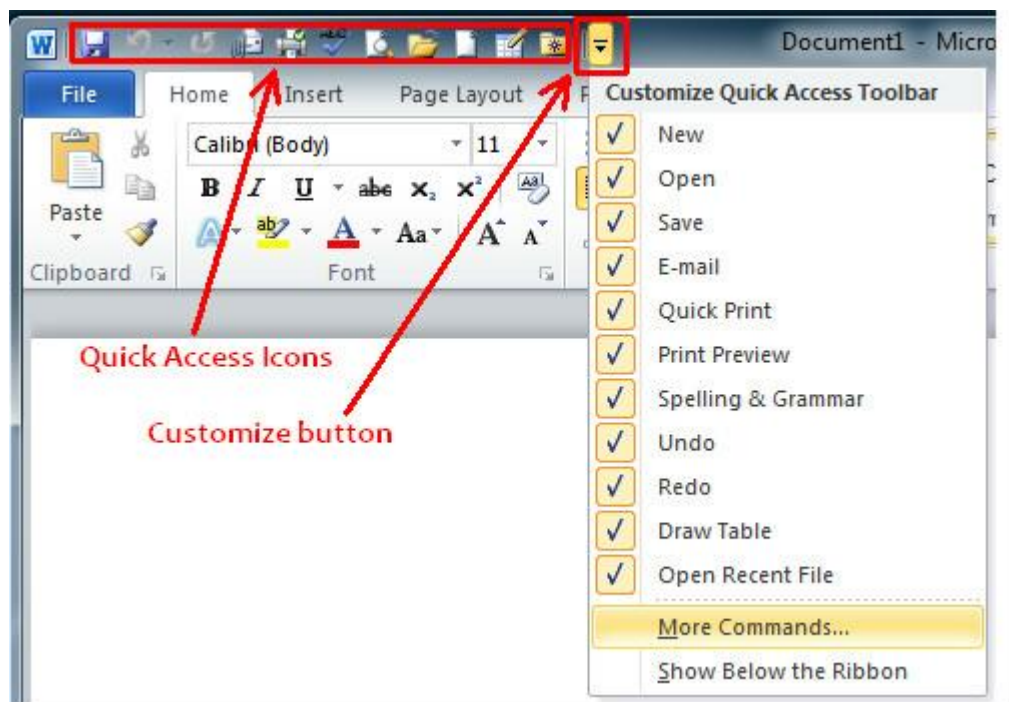


Figure 70: Customizing the Quick Access Toolbar in Word 2010

By default, there are only three quick access icons enabled, save, undo, and redo. You can enable other commands from the Customize Quick Access Toolbar menu. Once enabled, you will find their icons in the Quick Access Toolbar. Quick Access Toolbar was included in Office 2003 and 2007 as well, but plays a bigger role in Office 2010.

Some people find the default position of Quick Access Toolbar to be inconvenient. To move it below the Ribbon, click on the down pointing arrow icon at the right of the Quick Access Toolbar, and then click Show Below the Ribbon option in the context menu which is just under the More Commands option.

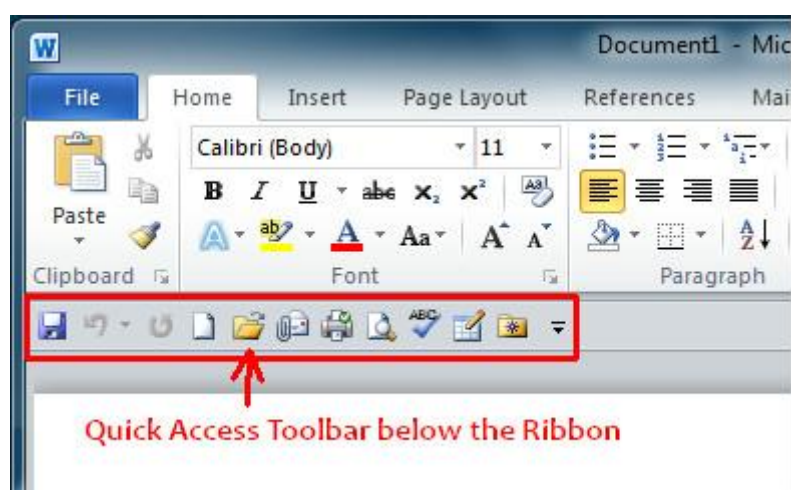


Figure 71: Quick Access Toolbar below the Ribbon

The next important set of tools is located in the menu ribbon (shown in Figure 72) and its different tabs. Each tab has a list of options that allows you to perform different tasks within the program. To activate the different menus, you can either select them by clicking on them using the mouse, or via keyboard by pressing the Alt key once. Numbers and letters will appear on each menu tab, and once

selected characters will appear to activate different menu element. To scroll from menu to menu and down through each menu, you can also use after pressing the ALT key once, the arrow keys (left/right to swap menus, and within the menu up/down to highlight menu elements. To leave the menu bar, press **Esc** (a full overview of the keyboard shortcuts is provided in Table 1 to Table 8).

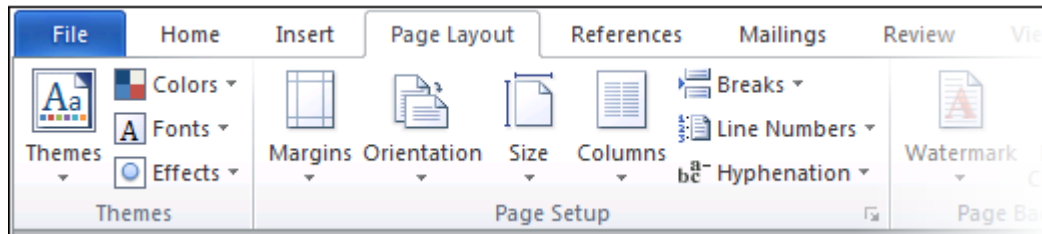


Figure 72: Menu ribbon with the different tabs and toolbars - Part of the Page Layout tab in Word 2010

Under the menu bar you'll find the toolbar consisting of the different tabs, each one containing small images, known as "icons", symbolising different functions. The toolbar has seven different tabs. They are: Home, Insert, Page Layout, References, Mailings, Review, View. We will focus in this course on the first 2, Home and Insert.

- **Home**

This tab holds the basic word processing tools, like for example, size, font, colour, style, etc. You will find that that you use this tab for most tasks , hence it is also the default tab.

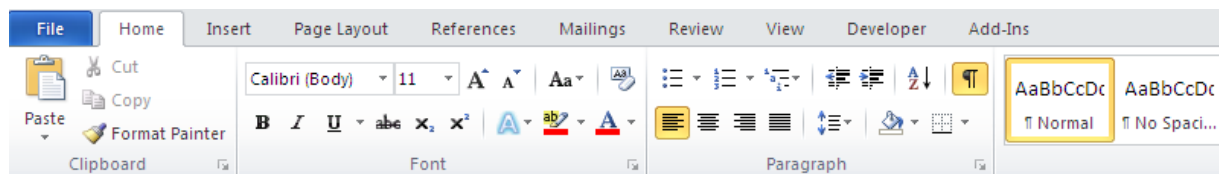


Figure 73: Home tab Word 2010

2.5.1.2 An exercise in creating a document

Writing and deleting text

- Launch Word.
- Write your name in the text area field.
- Use the **Backspace** key to delete your name one letter at a time.

Selecting text

- Highlight it by holding the left mouse button and dragging your mouse over the words.
- Alternatively, if you double-click a word, that word is selected, and if you triple-click anywhere on a line, the whole line will be selected.

Moving the text cursor

- Write your name again.
- Press the **left arrow** key repeatedly until the cursor is at the start of your name, or use your mouse.
- Move the cursor to the end of your name with the **right arrow** key, or use your mouse.
- Move the cursor to the next line by pressing return. Write your address in the next line.

- Move the cursor around in the text using the up, down, left, and **right arrow** keys, or use your mouse.

Typing and correcting text

- Type a short piece of text.
- Place the cursor to the right of one of the words and delete it using **Backspace**.
- Write another word instead.
- You can use also the options for Undo (CTRL and Z) and Redo (CTRL and Y) (see further) in order to undo or redo changes you have made.

Choose your font

- Before you start typing, choose a font that you like. Figure 74 shows an example of the list of fonts that appear when you select the font bar.



Figure 74: Font bar with displayed options

- If you decide to change the font after you already typed text, then simply press CTRL and A at the same time (all text will be selected), and then proceed to the font bar and select the font you want. Once that is done, click once with your mouse in the text to deactivate the selection, or press once on one of the arrow keys.

Using “Undo” – “Redo” buttons

- Next to the Microsoft Office button is the Quick Access toolbar. The Quick Access toolbar provides you with access to commands you frequently use. By default Save, Undo, and Redo appear on the Quick Access toolbar. You can use Save to save your file, Undo to rollback an

action you have taken, and Redo to reapply an action you have rolled back. The undo and redo icons are shown in Figure 75.

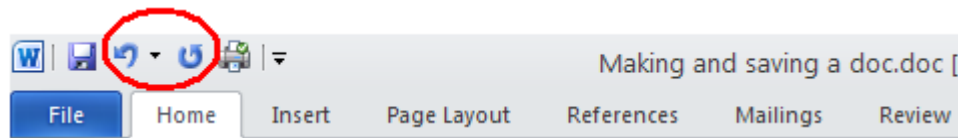


Figure 75: Undo and Redo buttons

Adding bullets:

- You can easily create bulleted lists of items.
  1. Select a list of text to which you want to assign bullets or numbers. You can use any of the text selection methods already discussed to select the text.
  2. Click the **Bullet Button** triangle to display a list of bullets you want to assign to the list. You can select any of the bullet styles available by simply clicking on it.
  3. If you want to create a list with numbers then click the **Numbering Button** triangle instead of bullet button to display a list of numbers you want to assign to the list. You can select any of the numbering style available by simply clicking on it.
- Several bulleting and numbering styles are available, as shown In Figure 76and Figure 77 respectively.

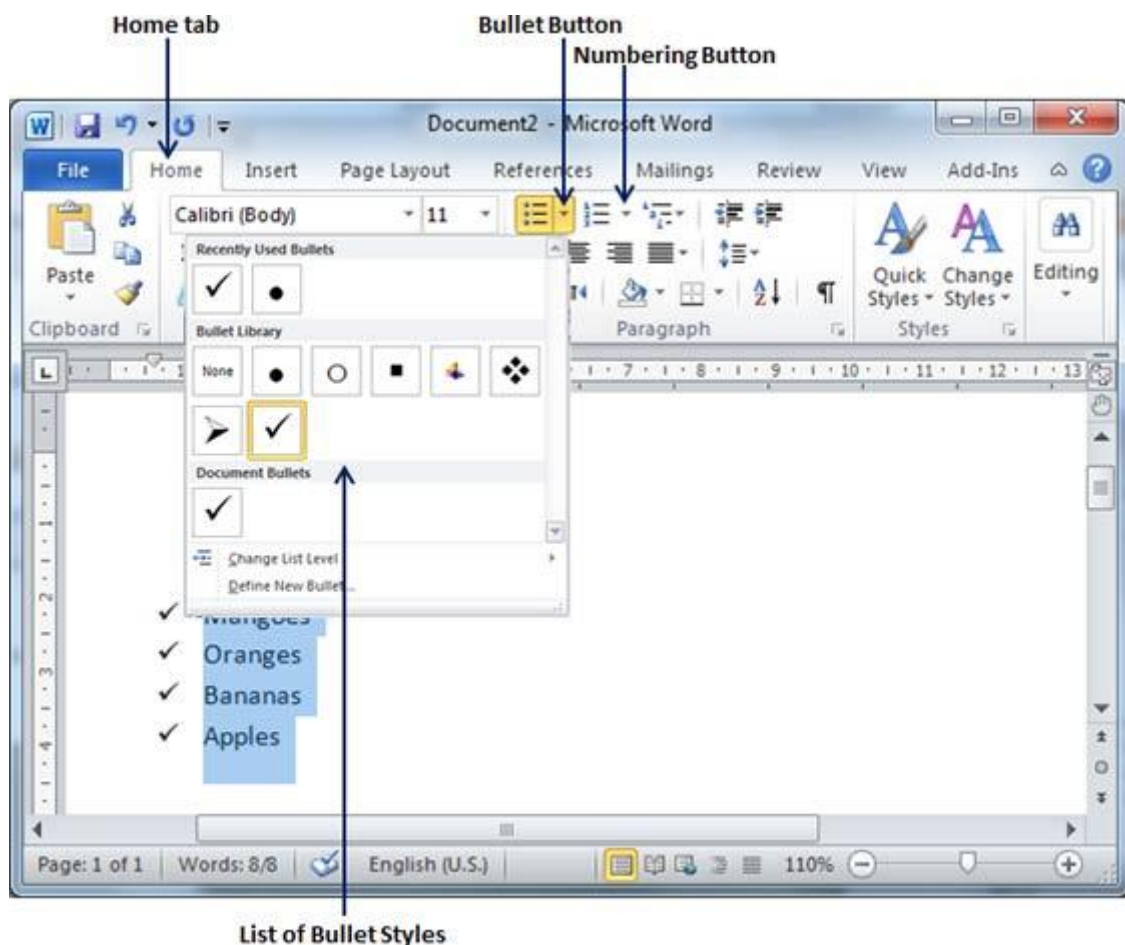


Figure 76: Bullet Button triangle to display a list of bullets to assign to selected list

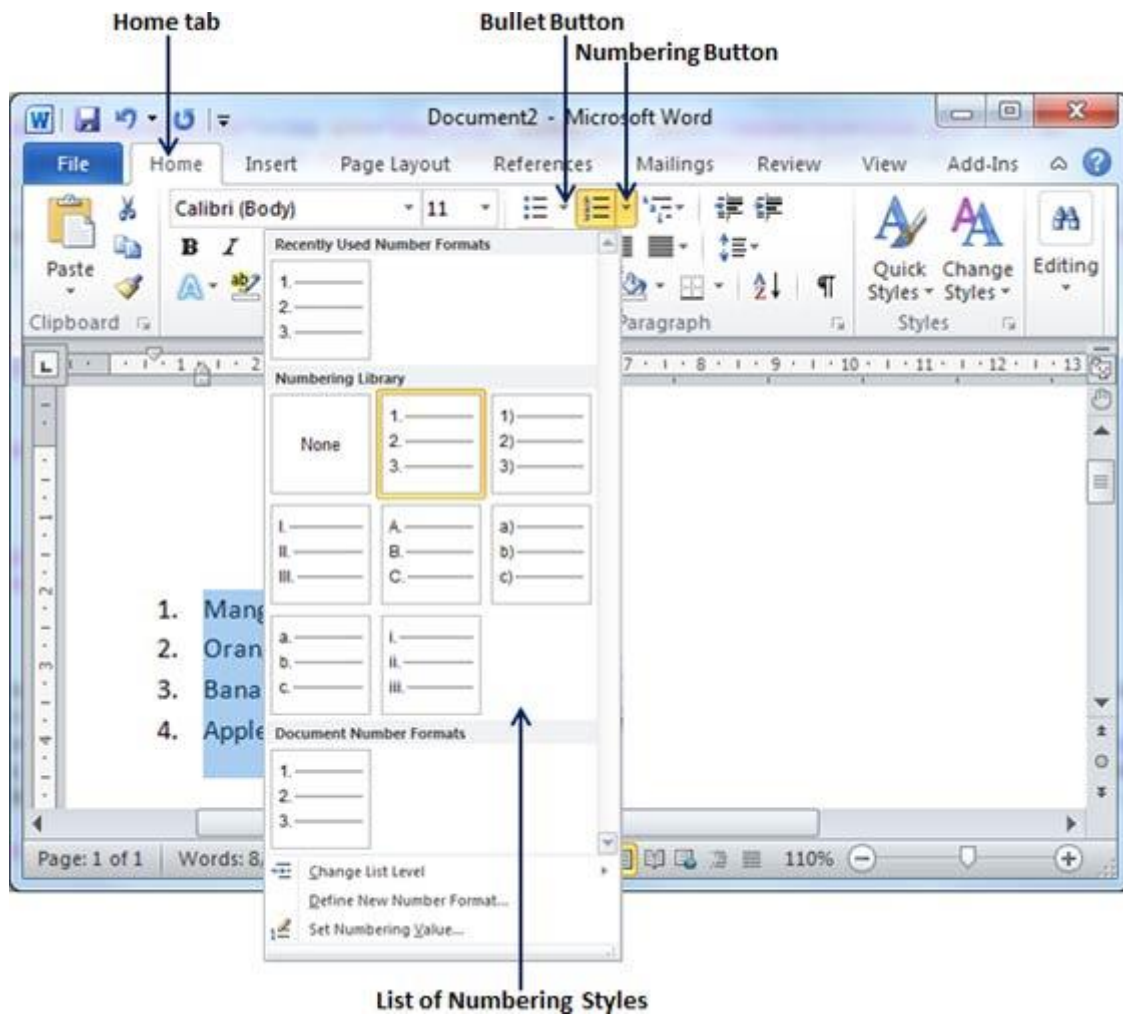


Figure 77: Numbering Button triangle to display a list of numbers to assign to selected list

- Create a List as You Type (the result is shown in Figure 78):
  1. Type *, and then either press the **SPACEBAR** or press **TAB** key, and then type the rest of what you want in the first item of the bulleted list.
  2. When you are done with typing, press Enter to add the next item in the list automatically and go to add next item's text.
  3. Repeat the previous step for each list item.
  4. You can create sub-lists which are called multi-lists. It is simple to create sub-lists, just press Tab key or use the increase indent button on the toolbar to put items in sub-list.

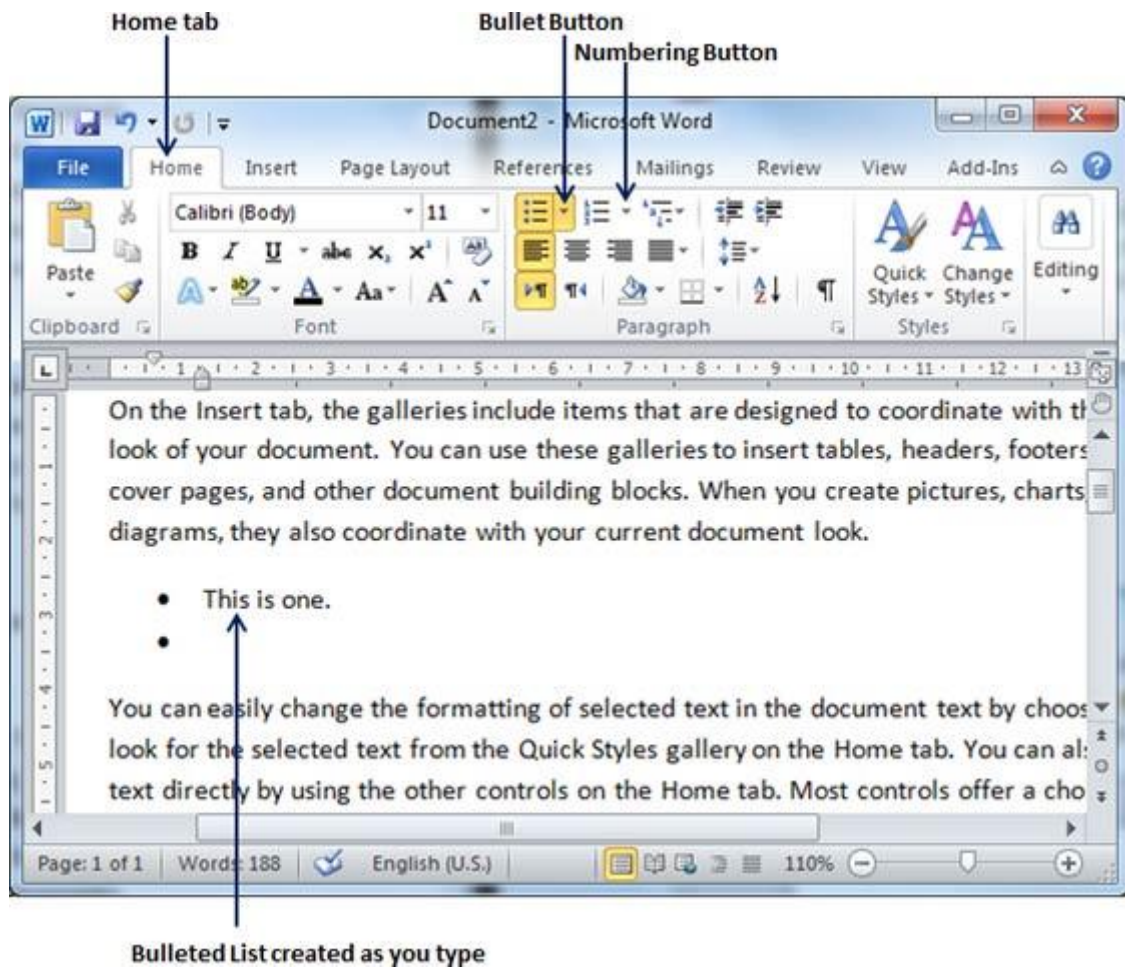


Figure 78: Creating bulleted lists as you type

- You can create a numbered list as you type. Word will automatically format it according to your text. Following are the simple steps to create numbered list as you type.
  1. Type 1, and then either press the **SPACEBAR** or press **TAB** key, and then type the rest of what you want in the first item of the numbered list.
  2. When you are done with typing, press Enter to add the item in the list automatically and go to add next item in the list.
  3. Repeat the previous step for each list item.
  4. You can create sub-lists which are called multi-lists. This is simple to create sub-lists, just press Tab key to put items in sub-list. The resulting numbered list will look like that in Figure 79.

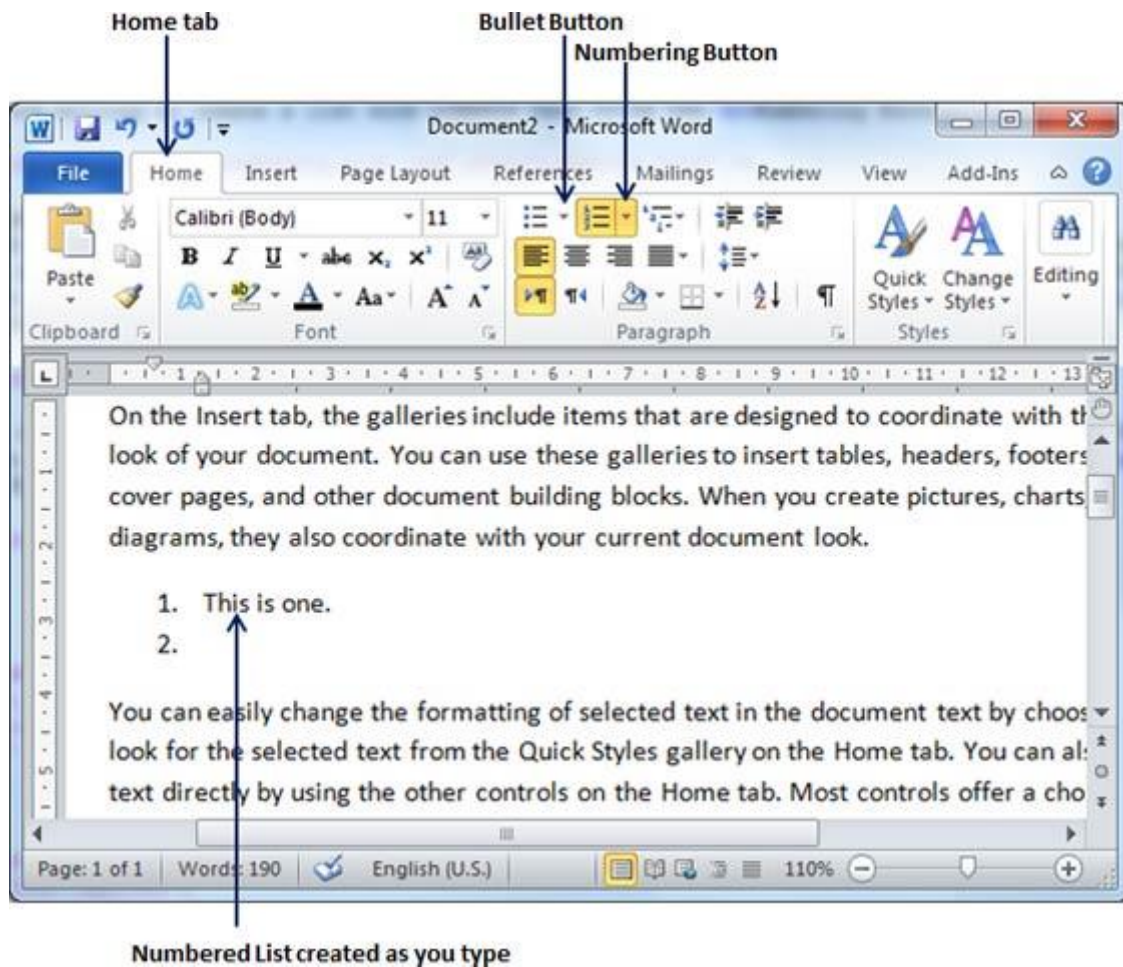


Figure 79: Creating numbered lists as you type

- **Insert**

This tab (shown in Figure 80) contains further tools which are mainly for inserting things.

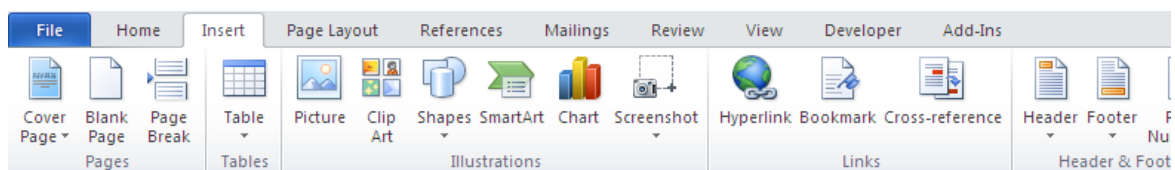


Figure 80: Insert tab in the menu ribbon

Insert image (see icons grouped under Illustrations)

- Click where you want to insert the picture.
- On the Insert tab, in the Illustrations group, click Picture.
- Locate the picture that you want to insert.
- Double-click the picture that you want to insert.
- Resize the picture by dragging its borders.

Adding a table (see icon under Tables)

- Click where you want to insert a table.
- On the Insert tab, in the Tables group, click Table, and then click Insert Table.

- Under Table size, enter the number of columns and rows.
- You can also use the **Table** menu to insert a table and select the number of rows and columns that you want.
- Click where you want to insert a table.
  - On the **Insert** tab, in the **Tables** group, click **Table**, and then, under **Insert Table**, drag to select the number of rows and columns that you want.

You can use table templates to insert a table that is based on a gallery of preformatted tables. Table templates contain sample data to help you visualize what the table will look like when you add your data.

- Click where you want to insert a table.
- On the **Insert** tab, in the **Tables** group, click **Table**, point to **Quick Tables**, and then click the template that you want.
- Replace the data in the template with the data that you want.

Draw a table

You can draw a complex table — for example, one that contains cells of different heights or a varying number of columns per row.

- Click where you want to create the table.
- On the **Insert** tab, in the **Tables** group, click **Table**, and then click **Draw Table**.
- The pointer changes to a pencil (as seen in Figure 81).
- To define the outer table boundaries, draw a rectangle. Then draw the column lines and row lines inside the rectangle.

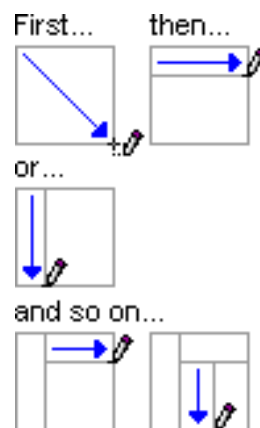


Figure 81: Overview of Draw table gestures

- To erase a line or block of lines, under **Table Tools**, on the **Design** tab, in the **Draw Borders** group, click **Eraser**.
- Click the line that you want to erase.
- When you have finished drawing the table, click in a cell and start typing or insert a graphic.

Adding a hyperlink

- Select the text or object that you want to display as the hyperlink.
- Right-click and then click the Hyperlink icon () on the shortcut menu. The menu in Figure 82 appears:

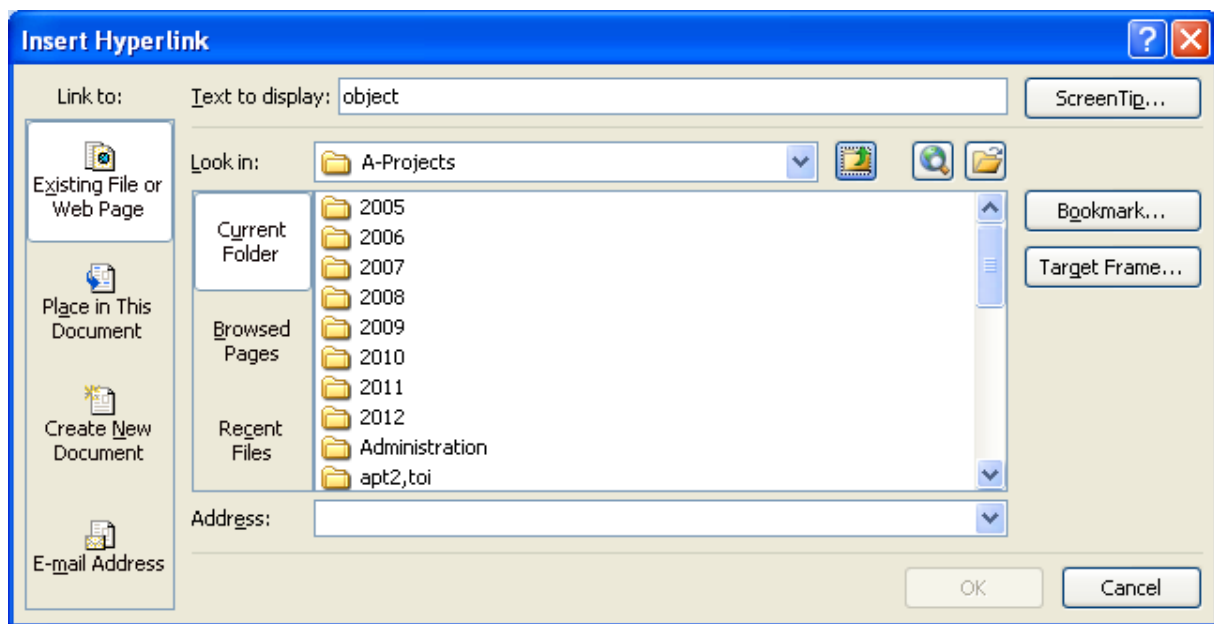


Figure 82: Insert Hyperlink window

- Under “Link to”, select where you would like to link to.
  - o In the Insert Hyperlink window that opens, you can type in the website URL into the address box if the link is to a website.
  - o However, you could also link to the following:
    - an existing file on your computer – use the Insert Hyperlink window to navigate to it, select it and then click OK.
    - a location in the current document – you can select elements like headings and sub headings to link to.
    - a new document – you need to specify the name of the document and either accept the current path to it or type in a new one. You can also either edit the new document right now, or edit it later.
    - an email address

Each of the above options can be used by clicking on its corresponding button on the left of the Insert Hyperlink window.

- When you’ve specified the destination of the link and clicked OK, the link displays in blue with an underline, by default.
- The second method of inserting a link is MSWord’s automatic link recognition: just type out the URL of the website. As soon as you press the spacebar or Enter, Word recognises the text as a link and displays it in blue with an underline.

Note: To customize the ScreenTip that appears when you rest the pointer over the hyperlink, click ScreenTip, and then type the text that you want. If you don't specify a tip, Word uses "Current document" as the tip for links to headings. For links to bookmarks, Word uses the bookmark name.

- **Saving the document**

Saving a Word 2010 document creates a permanent copy of what you see onscreen, stored as a file on the PC’s storage system. That way, you can use the document again.

Following steps should be followed:

- Click the **File** tab and select the **Save As** command.
  - o The Save As dialogue box appears. You need to use the Save As dialogue box when you first create a document and if you want to save a document with a new name or to a different location on the disk.

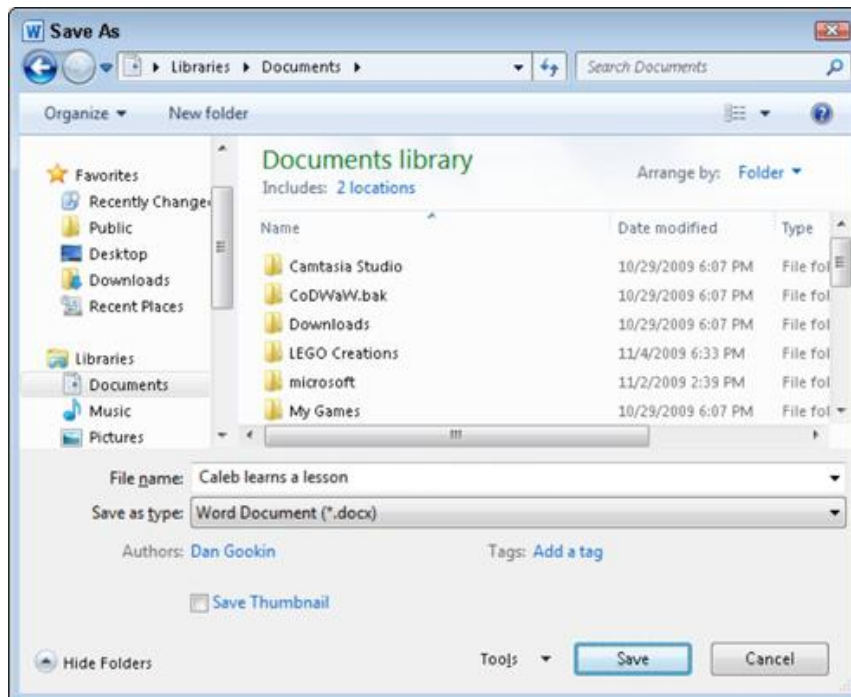


Figure 83: Save As dialogue box

- Type a name for your document in the **File Name** text box.
  - o Word automatically selects the first line or first several words of your document as a filename and puts it in the Save dialogue box. If that's okay, you can go to the next step. Otherwise, type a name in the File Name box.
- (Optional) Choose a location for your file.
  - o Use the tools in the Save As dialogue box to choose a specific folder for your document.
- Click the **Save** button.
  - o The file is now safely stored in the PC's storage system. If your file has been successfully saved, the name you have given it (the filename) will now appear on the document's title bar, near the top of the screen.
- After you initially save your document by using the Save As dialogue box, you can use the **Save** command to update your document, overwriting the old one with the latest version.

• Closing the document

If you want to close the document after it is saved, click on the icon "X" at the top right corner of the screen as shown in Figure 84



Figure 84 : Closing the document

- **(Re-)opening a recent document**

Click the **File** tab. The dialogue box contains a list of documents previously saved to disk under the heading **Recent Documents**, as in Figure 85. You can select the one you want to open.

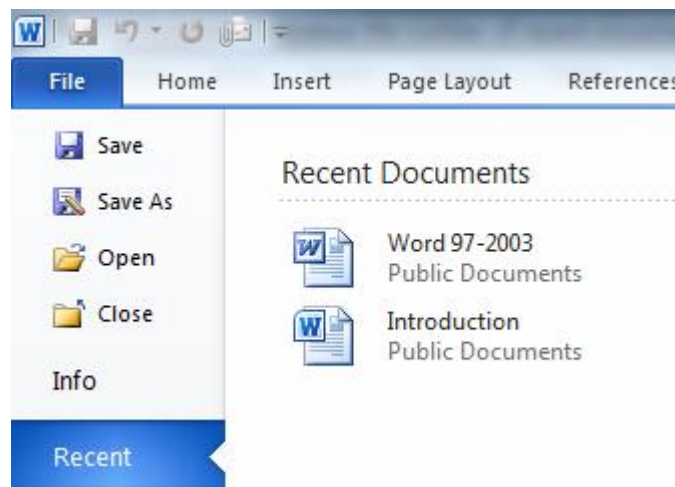


Figure 85: File tab functionalities - Recent Documents

In case you want to look for the file yourself on the PC's hard disk, click the **Open** button in the **File** tab and you are provided with a screen where you can browse to your file to open it.

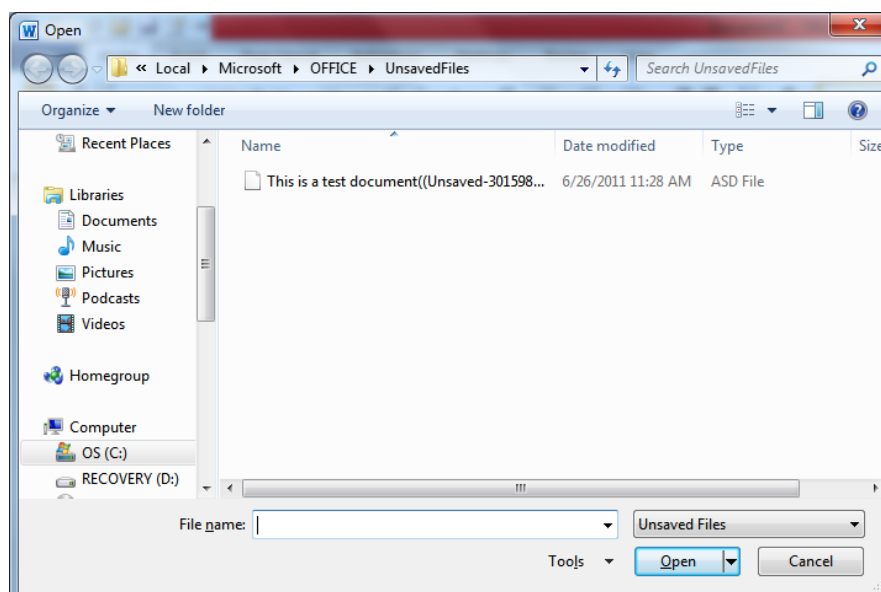


Figure 86: Dialogue screen to open a file

- **Printing the document**

- Open a document and ensure that it contains some text.
- Verify that your printer is ready for the job.
  - o Make sure that the printer is connected, turned on, and ready to print.
- Click the **Save** button on the Quick Access toolbar.
  - o Saving before you print is always a good idea.
- Click the **File** tab and select the **Print** command.
  - o Alternatively, you can use the keyboard shortcut Ctrl+P. You see the document previewed in the File tab window. That is the Print Settings window, as seen in Figure 87.

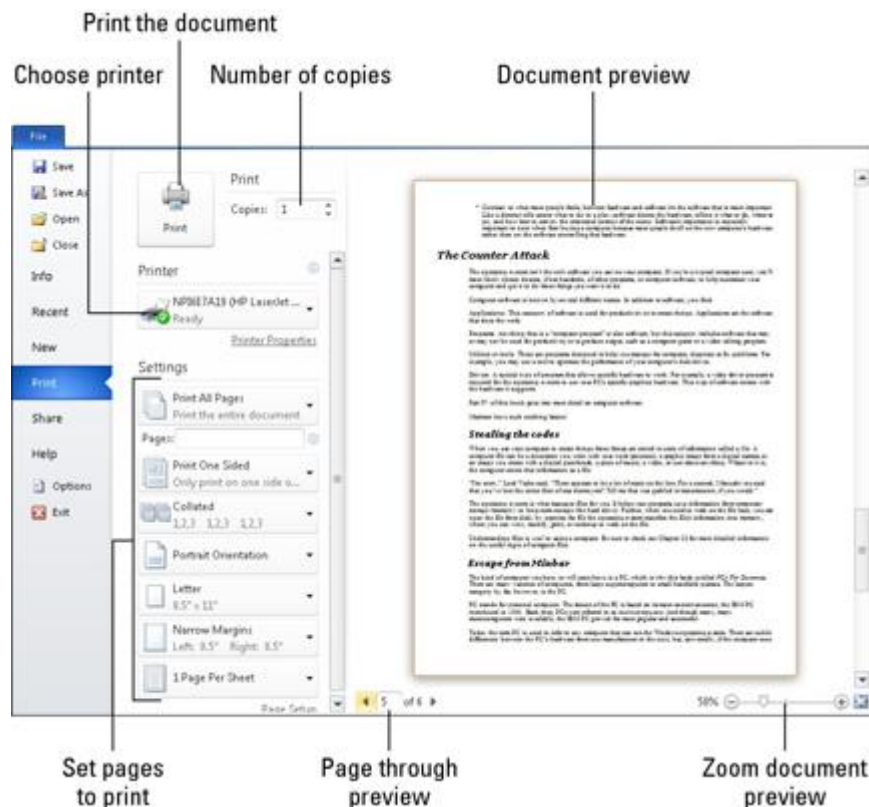


Figure 87: Print Settings window

- To print one copy of the whole document, click the **Print** button.
  - o The File tab window closes and the document will emerge from your printer. Depending on your printer, printing may take a while. Fortunately, you can continue working while the document prints.
- To print a certain page, position the cursor on that page in the document, click the button beneath the Settings heading, and choose **Current Page** from the menu.
  - o The single page prints with all the formatting you applied.
- To print a selection of pages, choose the command **Print Custom Range** from the Settings button menu, then enter the pages you want to print in the Pages text box.
  - o For example, to print pages 3 through 5, type 3-5. To print pages 2 and 6, type 2,6.
- To print a block of text, mark the block of text you want to print in your document and choose **Print Selection** from the Settings button menu.
  - o The Print Selection item is available only when a block is selected in your document.
- To print more than one copy, enter the number of copies in the Copies text box.
  - o For three copies, for example, click in the text box and type 3.

- Click the Print button.
  - o The File tab window closes and the document will emerge from your printer. Printing may take a while, but again, you can continue working while the document prints.
- If nothing prints, don't use the Print command again! There's probably nothing wrong; the computer is still processing or sending information to the printer. If you don't see an error message, everything you sent should print given time.

2.5.1.3 Using keyboard shortcuts

For keyboard shortcuts in which you press two or more keys at the same time, the keys to press are separated by a plus sign (+) in Microsoft Word 2010 Help. For keyboard shortcuts in which you press one key immediately followed by another key, the keys to press are separated by a comma (,).

Navigating the Ribbon

Access keys let you quickly use a command by pressing a few keys, regardless of where you are in the program. Every command in Word 2010 can be accessed by using an access key. You can get to most commands by using two to five keystrokes. To use an access key:

- Press ALT.
- The KeyTips are displayed over each feature that is available in the current view.
- Press the letter shown in the KeyTip over the feature that you want to use.
- Depending on which letter you press, you may be shown additional KeyTips. For example, if the Home tab is active and you press N, the Insert tab is displayed, along with the KeyTips for the groups on that tab.
- Continue pressing letters until you press the letter of the command or control that you want to use. In some cases, you must first press the letter of the group that contains the command.
- To cancel the action that you are taking and hide the KeyTips, press ALT again.

Shortcuts

What follows is an overview of the most common shortcuts that exist in Word 2010:

Table 1: Common tasks in Microsoft Word - shortcuts

Common Tasks In Microsoft Word	
To Do This	Press
Create a nonbreaking space.	CTRL+SHIFT+SPACEBAR
Create a nonbreaking hyphen.	CTRL+SHIFT+HYPHEN
Make letters bold.	CTRL+B
Make letters italic.	CTRL+I
Make letters underline.	CTRL+U
Decrease font size one value.	CTRL+SHIFT+<
Increase font size one value.	CTRL+SHIFT+>
Decrease font size 1 point.	CTRL+[
Increase font size 1 point.	CTRL+]
Remove paragraph or character formatting.	CTRL+SPACEBAR
Copy the selected text or object.	CTRL+C
Cut the selected text or object.	CTRL+X
Paste text or an object.	CTRL+V
Paste special	CTRL+ALT+V



Common Tasks In Microsoft Word	
To Do This	Press
Paste formatting only	CTRL+SHIFT+V
Undo the last action.	CTRL+Z
Redo the last action.	CTRL+Y
Open the Word Count dialogue box.	CTRL+SHIFT+G

Table 2: : Create, View and Save documents in Microsoft Word - shortcuts

Create, View, And Save Documents	
To Do This	Press
Create a new document.	CTRL+N
Open a document.	CTRL+O
Close a document.	CTRL+W
Split the document window.	ALT+CTRL+S
Remove the document window split.	ALT+SHIFT+C or ALT+CTRL+S
Save a document.	CTRL+S

Table 3: Find, Replace and Browse through text in Microsoft Word - shortcuts

Find, Replace, And Browse Through Text	
To Do This	Press
Open the Navigation task pane (to search document).	CTRL+F
Repeat find (after closing Find and Replace window).	ALT+CTRL+Y
Replace text, specific formatting, and special items.	CTRL+H
Go to a page, bookmark, footnote, table, comment, graphic, or other location.	CTRL+G
Switch between the last four places that you have edited.	ALT+CTRL+Z
Open a list of browse options. Press the arrow keys to select an option, and then press ENTER to browse through a document by using the selected option.	ALT+CTRL+HOME
Move to the previous browse object (set in browse options).	CTRL+PAGE UP
Move to the next browse object (set in browse options).	CTRL+PAGE DOWN

Table 4: Switch to another view in Microsoft Word - shortcuts

Switch To Another View	
To Do This	Press
Switch to Print Layout view.	ALT+CTRL+P
Switch to Outline view.	ALT+CTRL+O
Switch to Draft view.	ALT+CTRL+N

Table 5: Print and Preview documents in Microsoft Word - shortcuts

Print And Preview Documents	
To Do This	Press
Print a document.	CTRL+P
Switch to print preview.	ALT+CTRL+I



Print And Preview Documents	
To Do This	Press
Move around the preview page when zoomed in.	Arrow keys
Move by one preview page when zoomed out.	PAGE UP or PAGE DOWN
Move to the first preview page when zoomed out.	CTRL+HOME
Move to the last preview page when zoomed out.	CTRL+END

Table 6: Delete text and graphics in Microsoft Word - shortcuts

Delete Text And Graphics	
To Do This	Press
Delete one character to the left.	BACKSPACE
Delete one word to the left.	CTRL+BACKSPACE
Delete one character to the right.	DELETE
Delete one word to the right.	CTRL+DELETE
Cut selected text to the Office Clipboard.	CTRL+X
Undo the last action.	CTRL+Z
Cut to the Spike.	CTRL+F3

Table 7: Copy and move text and graphics in Microsoft Word - shortcuts

Copy And Move Text And Graphics	
To Do This	Press
Open the Office Clipboard	Press ALT+H to move to the Home tab, and then press F,O.
Copy selected text or graphics to the Office Clipboard.	CTRL+C
Cut selected text or graphics to the Office Clipboard.	CTRL+X
Paste the most recent addition or pasted item from the Office Clipboard.	CTRL+V
Move text or graphics once.	F2 (then move the cursor and press ENTER)
Copy text or graphics once.	SHIFT+F2 (then move the cursor and press ENTER)
When text or an object is selected, open the Create New Building Block dialogue box.	ALT+F3
When the building block — for example, a SmartArt graphic — is selected, display the shortcut menu that is associated with it.	SHIFT+F10
Cut to the Spike.	CTRL+F3
Paste the Spike contents.	CTRL+SHIFT+F3
Copy the header or footer used in the previous section of the document.	ALT+SHIFT+R

To select text and graphics, it suffices to hold down SHIFT and use the arrow keys to move the cursor.

Table 8: Move through your document in Microsoft Word - shortcuts

Move Through Your Document	
To Move	Press
One character to the left	LEFT ARROW

Move Through Your Document	
To Move	Press
One character to the right	RIGHT ARROW
One word to the left	CTRL+LEFT ARROW
One word to the right	CTRL+RIGHT ARROW
One paragraph up	CTRL+UP ARROW
One paragraph down	CTRL+DOWN ARROW
One cell to the left (in a table)	SHIFT+TAB
One cell to the right (in a table)	TAB
Up one line	UP ARROW
Down one line	DOWN ARROW
To the end of a line	END
To the beginning of a line	HOME
To the top of the window	ALT+CTRL+PAGE UP
To the end of the window	ALT+CTRL+PAGE DOWN
Up one screen (scrolling)	PAGE UP
Down one screen (scrolling)	PAGE DOWN
To the top of the next page	CTRL+PAGE DOWN
To the top of the previous page	CTRL+PAGE UP
To the end of a document	CTRL+END
To the beginning of a document	CTRL+HOME
To a previous revision	SHIFT+F5
After opening a document, to the location you were working in when the document was last closed	SHIFT+F5

A complete overview of all shortcuts can be found at <http://office.microsoft.com/en-us/word-help/keyboard-shortcuts-for-microsoft-word-HP010370109.aspx>.

Easy manuals for Word 2010 can also be found via <http://www.dummies.com/how-to/computers-software/ms-office/Word/Word-2010.html>.

2.5.2 Making, saving and printing a document in LibreOffice Writer

2.5.2.1 Using LibreOffice Writer

Writer is the word processor component of LibreOffice. It is quite similar in usage to MSWord, but there are some differences, especially in the menu structure.

This product can be downloaded at <http://www.libreoffice.org/download/>.

Note: it is free.

1. Adding text and moving the cursor within the text

The same procedure as in MSWord applies for typing and deleting text, or moving around with the cursor.

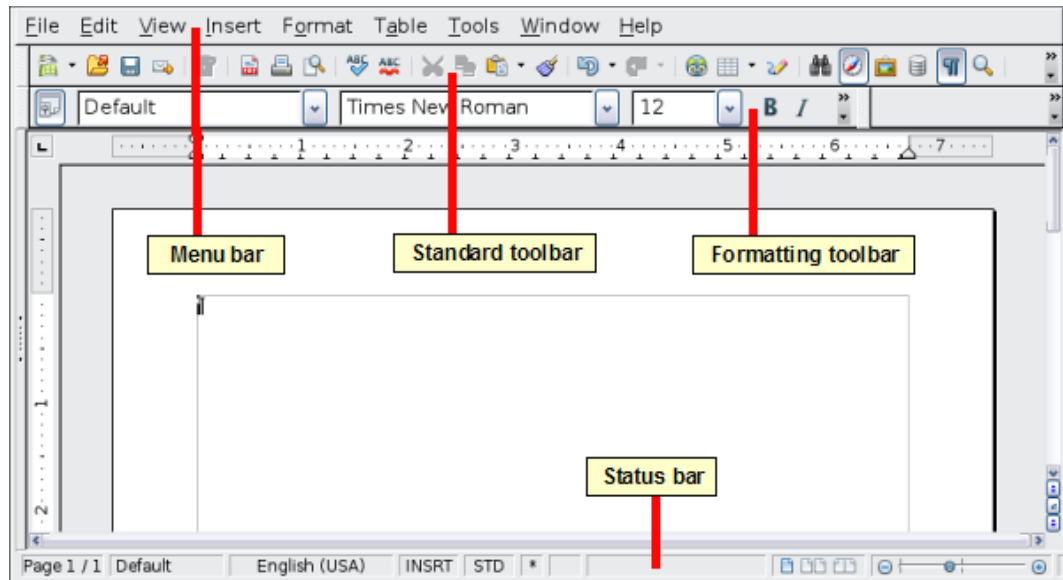


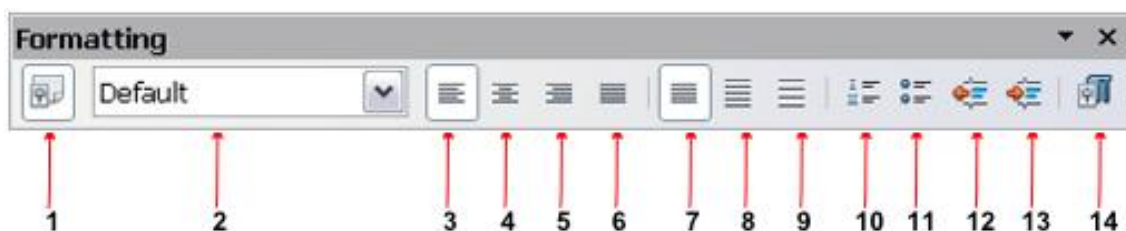
Figure 88: The main Writer workspace in Print Layout view

For cutting and copying text, you can use the mouse or the keyboard. To move (cut and paste) selected text using the mouse (or using SHIFT and ARROW buttons with the keyboard), drag it to the new location and release it (or using the keyboard apply CTRL and X to remove it, and subsequently CTRL and V to paste it again).

When you paste text, the result depends on the source of the text and how you paste it. If you click on the **Paste** icon, any formatting the text has (such as bold or italics) is retained. Text pasted from Web sites and other sources may also be placed into frames or tables. If you do not like the results, click the **Undo** icon or press **Control+Z**. If you want the text to be pasted without any formatting, you will need to select “paste special” and select then the “unformatted text” option.

A complete overview of shortcut keys is provided in a separate section.

Error! Reference source not found. displays the core functionalities of the formatting toolbar.



1 Open Styles and Formatting Window	5 Align Right	10 Numbering On/Off
2 Apply Style	6 Justified	11 Bullets On/Off
3 Align Left	7 Line Spacing: 1	12 Decrease Indent
4 Centered	8 Line Spacing: 1.5	13 Increase Indent
	9 Line Spacing: 2	14 Paragraph format dialogue

Figure 89 : Formatting toolbar, showing icons for paragraph formatting

2. Adding images

Images can be added to a document in several ways by inserting an image file, directly from a graphics program or a scanner, or from the LibreOffice Gallery.

When the image is in a file stored on the computer, you can insert it into a LibreOffice document using either of the following methods.

Open a file browser window and locate the image you want to insert. Drag the image into the Writer document and drop it where you want it to appear. A faint vertical line marks where the image will be dropped. This method embeds (saves a copy of) the image file in the Writer document. To link the file instead of embedding it, hold down the *Control+Shift* keys while dragging the image.

- Another option consists of selecting the **Insert** option in the menu bar, then select **Picture** and then select **From File** as in Figure 90.

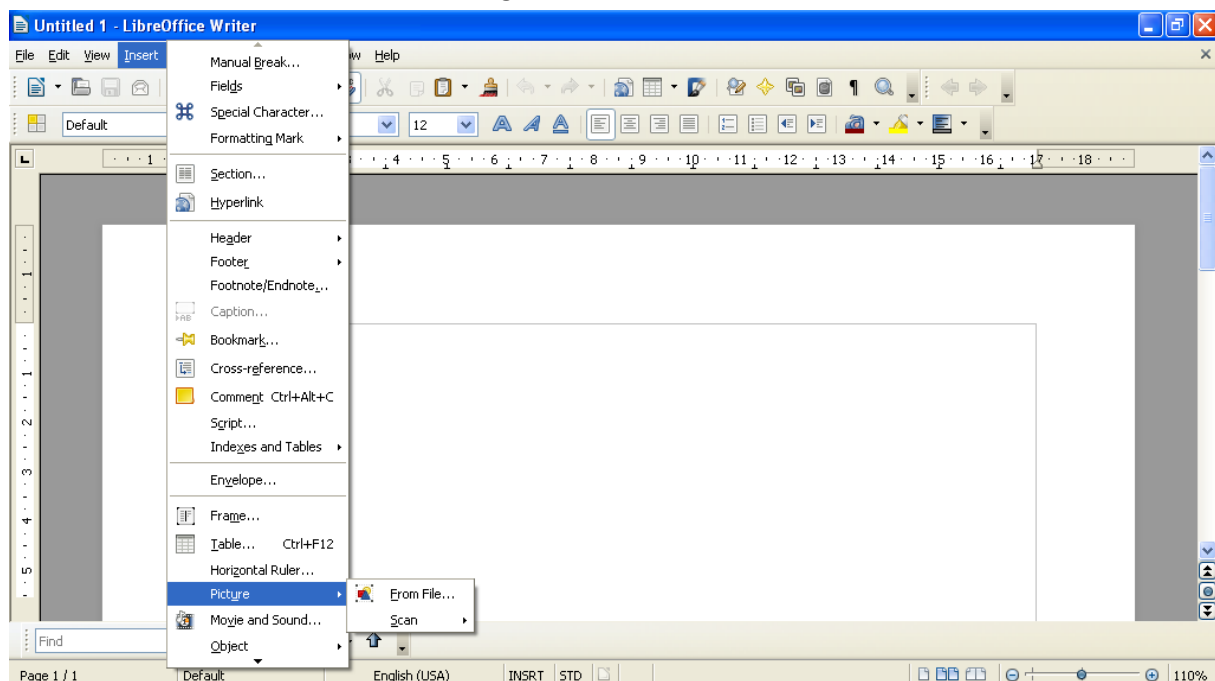


Figure 90: Screenshot showing selecting the Insert option in the menu bar

The dialogue dialogue screen in Figure 91 then appears.

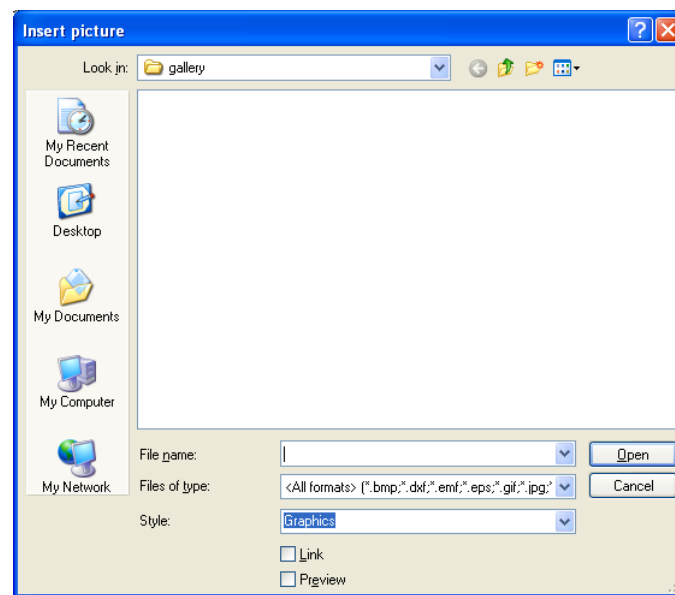


Figure 91: Insert picture dialogue screen

3. Adding a table

For displaying tabular data, you can insert basic tables directly in a number of ways:

- Choose **Insert → Table** from the menu bar.
- Click on the Table button () on the main toolbar.

Each method opens the Insert Table dialogue as seen in Figure 92.

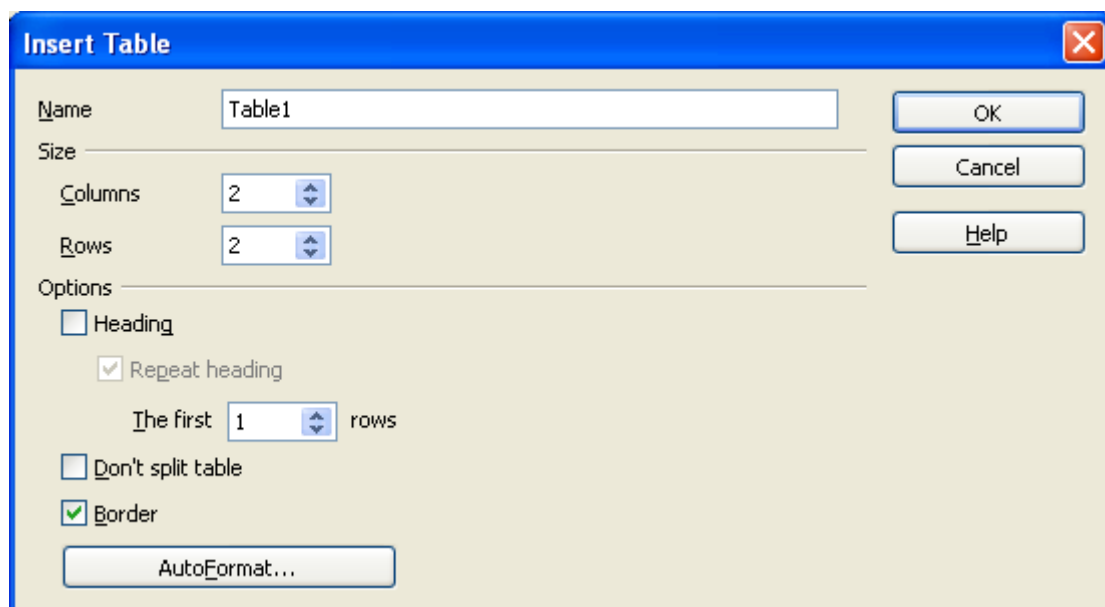


Figure 92: Creating a table with the Insert Table dialogue

Alternatively, clicking on the black arrow next to the Table button displays a graphic that you can drag and select the number of rows and columns for your table as in Figure 93.

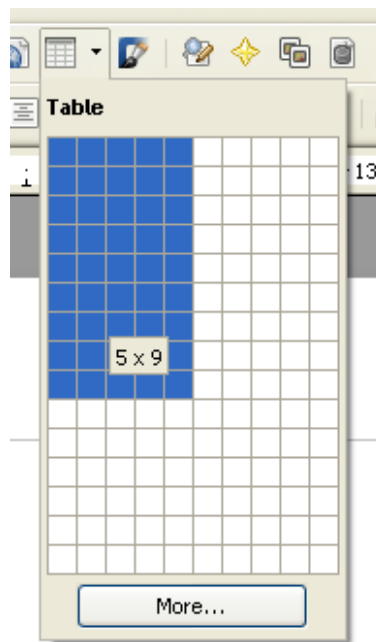


Figure 93: Creating a table by a graphic dragging and select the number of rows and columns

With the table selected, the Table toolbar should appear (as shown in Figure 94). If it does not, you can access it by selecting **View → Toolbars → Table**.

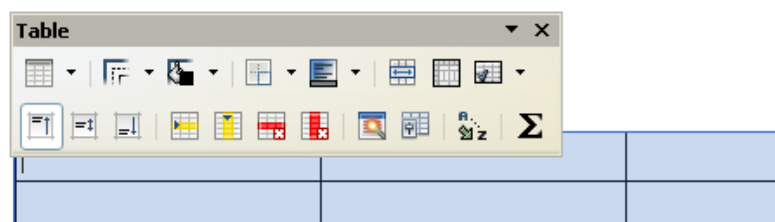


Figure 94: Table toolbar

Having completed the table design, entering data into the cells is similar to working with text box objects. Click in the cell you wish to add data to, and begin typing. To move around cells quickly, use the following key options:

- The **arrow keys** move the cursor to the next table cell if the cell is empty; otherwise they move the cursor to the next character in the cell.
- The **Tab key** moves to the next cell, skipping over the contents of the cell; Shift+Tab move backwards in this manner.

4. Adding a hyperlink

To add a hyperlink

- first select the text;
- Select **Insert → Hyperlink (as in Figure 95)**;
- In the hyperlink dialogue window (see Figure 96), add the URL in the **Target** field, and select **Apply** and then **Close**.

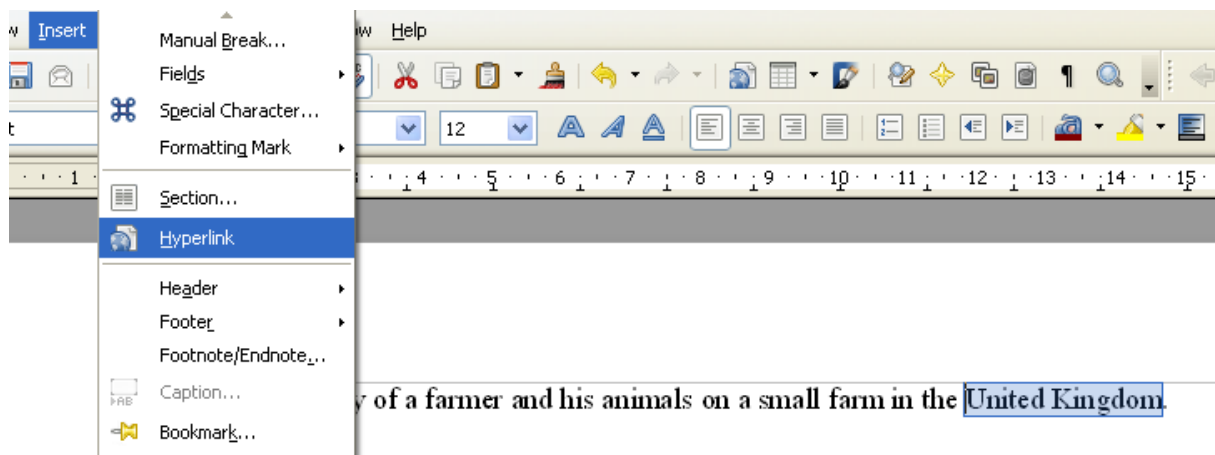


Figure 95: Inserting a hyperlink.

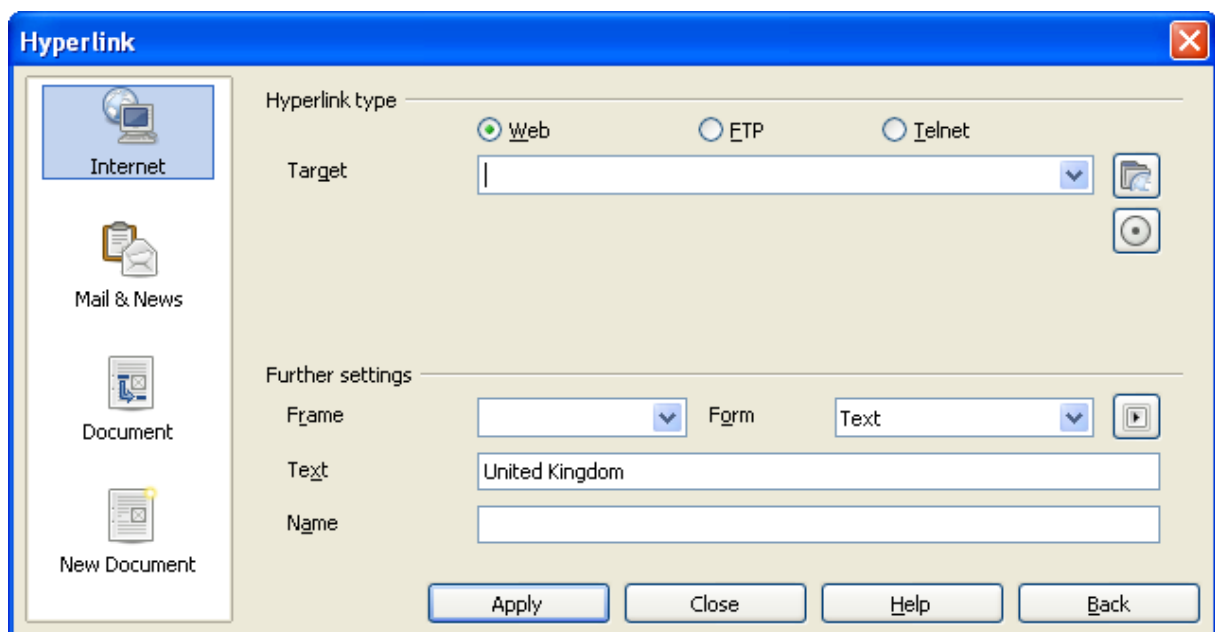


Figure 96: Hyperlink dialogue window

5. Saving the document

To save a document, proceed as following:

- Select **File → Save** (or CTRL+ S) (as in Figure 97)
- In the save dialogue (Figure 98), indicate where you want to save the file, as well as write the file name in the **File name** field.

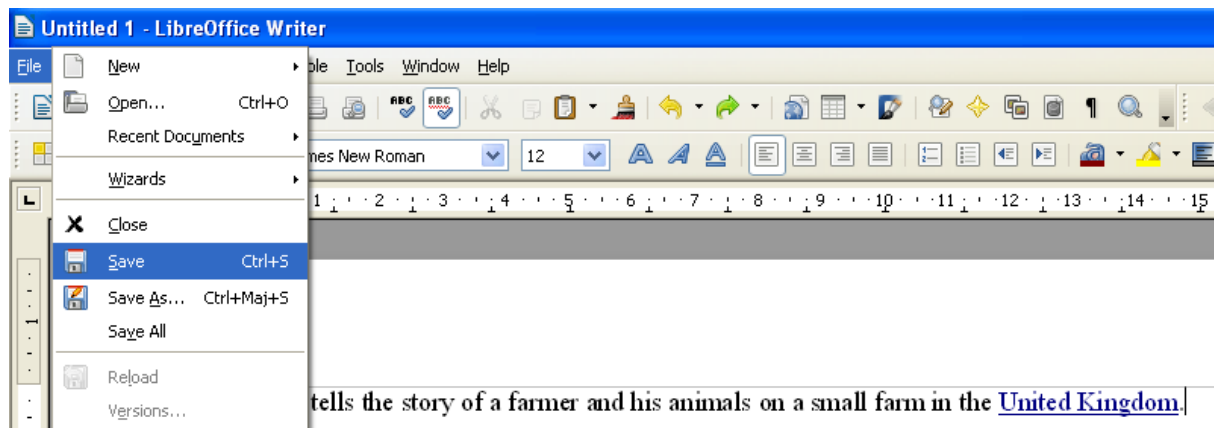


Figure 97: Indicated how the save document: File → Save

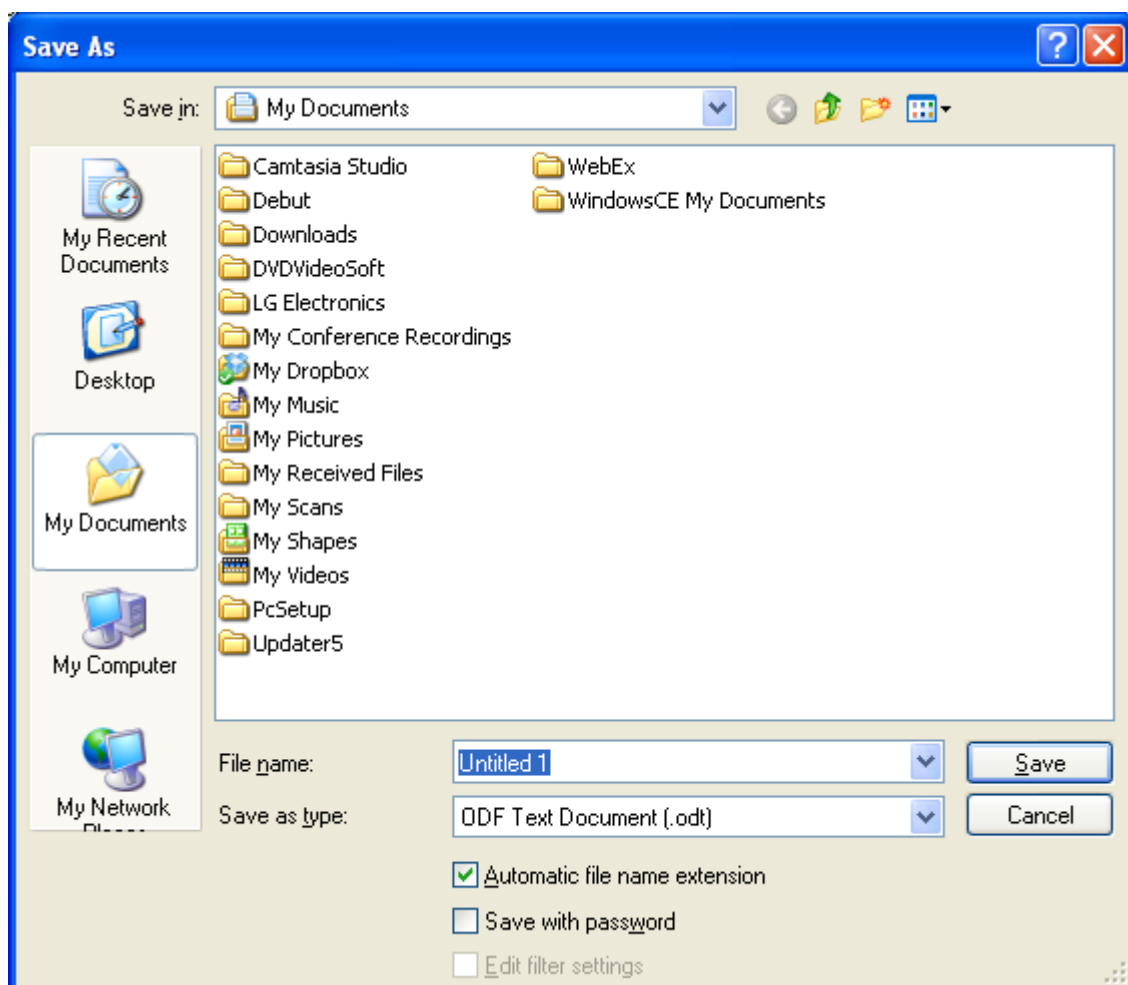


Figure 98: Save As dialogue screen

6. Closing the document

To close LibreOffice completely, choose **File → Exit**.

If all the documents have been saved, LibreOffice closes immediately. If any documents have been modified but not saved, a warning message appears.

7. Re-opening the saved document

You can open an existing document in one of the following ways.

- Choose **File** → **Open...**
- Click the **Open** button on the main toolbar.
- Press Control+O on the keyboard.

In each case, the Open dialogue appears. Select the file you want, and then click **Open**. If a document is already open in LibreOffice, the second document opens in a new window.

In the Open dialogue, you can reduce the list of files by selecting the type of file you are looking for. For example, if you choose **Text documents** as the file type, you will only see documents Writer can open (including **.odt**, **.doc**, **.txt**); if you choose **Spreadsheets**, you will see **.ods**, **.xls**, and other files that Calc opens.

You can also open an existing document that is in an OpenDocument format by double-clicking on the file's icon on the desktop or in a file manager such as Windows Explorer.

If you have associated Microsoft Office file formats with LibreOffice, you can also open these files by double-clicking on them.

8. Printing the document

Click the **Print File Directly** icon  to send the entire document to the default printer defined for your computer.

You can change the action of the **Print File Directly** icon to send the document to the printer defined for the document instead of the default printer for the computer. Go to **Tools** → **Options** → **Load/Save** → **General** and select the **Load printer settings with the document** option.

For more control over printing, use the Print dialogue (**File** → **Print** or **Ctrl+P**) as shown in Figure 99.

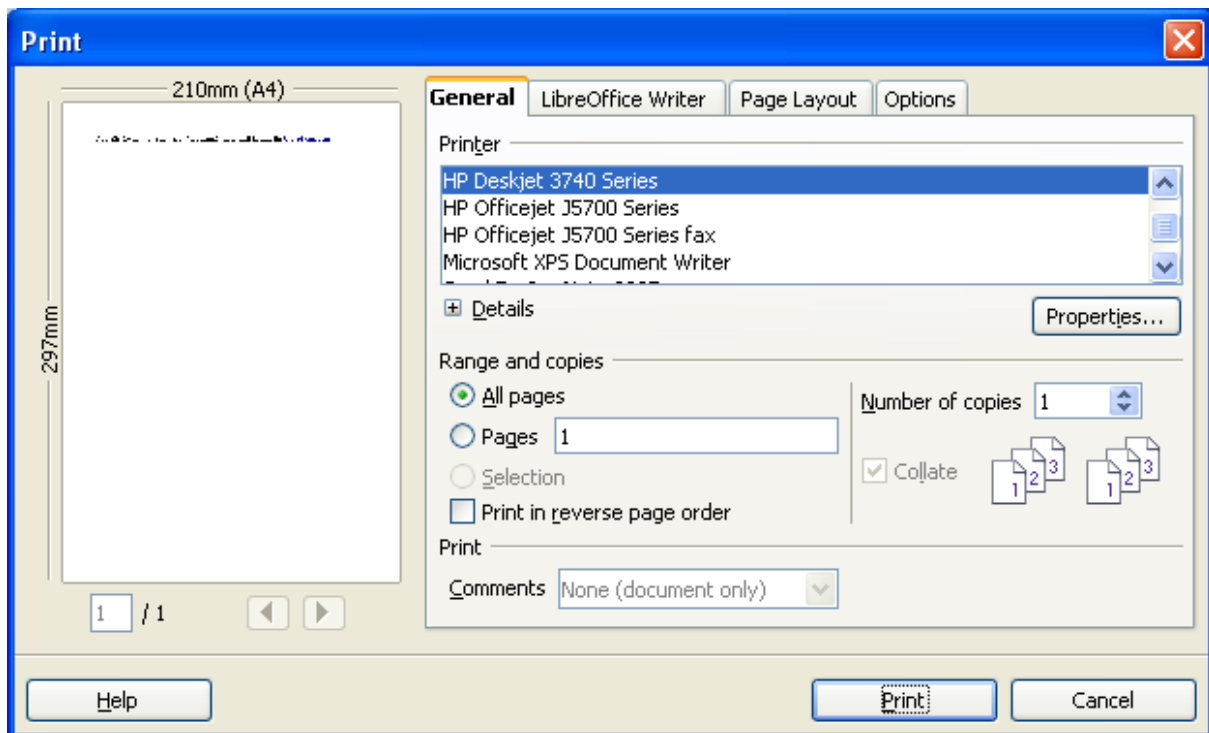


Figure 99: The Print dialogue window

On the *General* tab of the Print dialogue, you can choose:

- The **printer** (from the printers available)

- Which **pages** to print, the number of copies to print, and whether to collate multiple copies (Range and copies section)
- Whether to print any **comments** that are in the document, and where to print the comments (see Figure 100).

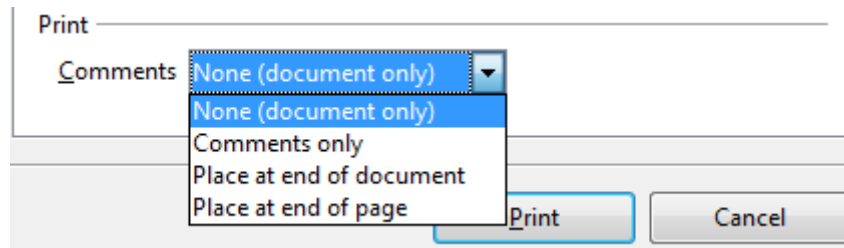


Figure 100: Option for choosing whether and where to print comments

Select the **Properties** button to display a dialogue (Figure 101) where you can choose portrait or landscape orientation, which paper tray to use, and the paper size to print on.

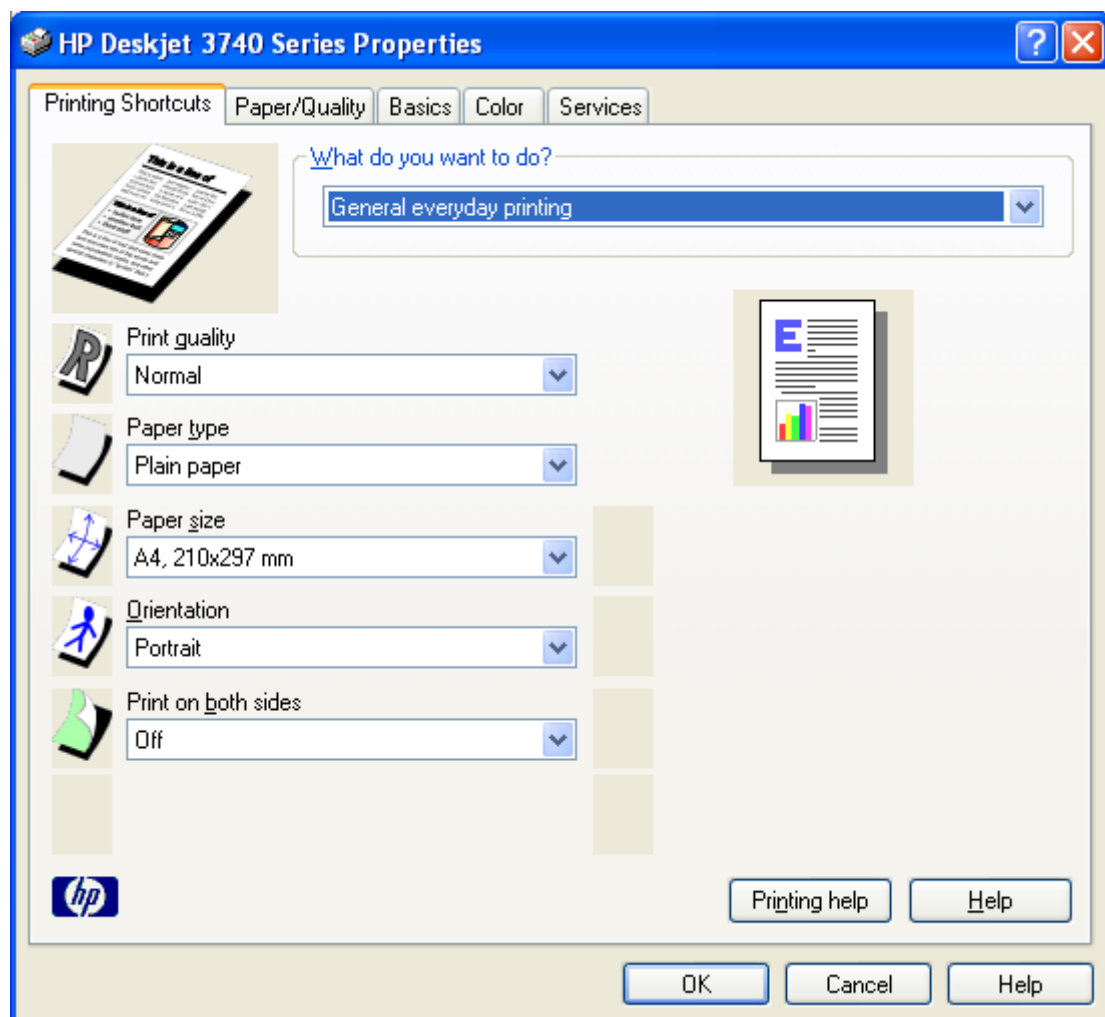


Figure 101: Dialogue where you can choose portrait or landscape orientation, which paper tray to use, and the paper size to print on

In addition to printing a full document, you can choose to print individual pages/sheets/slides, ranges of pages/sheets/slides, or a selection of a document.

Printing an individual page:

1. Choose **File → Print** from the menu bar.
2. On the Print dialogue, select the page to print.
  - a. In the Ranges and copies section of the General page, select the Pages option.
  - b. Enter the *sequence number* of the page you want to print. The preview box changes to show the selected page.
  - c. If you have restarted page numbering within the document, the sequence number is not the same as the page number.
3. Click the **Print** button.

Printing a range of pages:

1. Choose **File → Print** from the menu bar.
2. On the Print dialogue, select the range of pages to print.
  - a. In the Ranges and copies section of the General page, select the Pages option.
  - b. Enter the sequence numbers of the pages to print (for example, 1–4 or 1,3,7,11).
3. Click the **Print** button.

Printing a selection of text:

1. In the document, select the material (text and graphics) to print.
2. Choose **File → Print** from the menu bar.
3. The Ranges and copies section of the Print dialogue now includes a Selection option and the preview box shows the selected material.
4. Click the **Print** button.

2.5.2.2 Using keyboard shortcuts

Just like with Word 2010, a great deal of the LibreOffice Writer's functionalities can be called up by using shortcut keys. The principle remains the same. For example, the Ctrl+O shortcut keys are shown next to the Open entry in the File menu. If you want to access this function by using the shortcut keys, press and hold down Ctrl and then press the O key. Release both keys after the dialogue appears.

The shortcut keys are almost identical to Word 2010.

List of General Shortcut Keys

Shortcut Keys	Effect
Enter key	Activates the focused button in a dialogue
Esc	Terminates the action or dialogue. If in LibreOffice Help: goes up one level.
Spacebar	Toggles the focused check box in a dialogue.
Arrow keys	Changes the active control field in an option section of a dialogue.



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Shortcut Keys	Effect
Tab	Advances focus to the next section or element in a dialogue.
Shift + Tab	Moves the focus to the previous section or element in a dialogue.
Alt+Down Arrow	Opens the list of the control field currently selected in a dialogue. These shortcut keys apply not only to combo boxes but also to icon buttons with pop-up menus. Close an opened list by pressing the Escape key.
Ctrl+M	Removes direct formatting from selected text or objects (as in Format - Clear Direct Formatting)
Ctrl+Tab	When positioned at the start of a header, a tab is inserted.
Enter (if an OLE object is selected)	Activates the selected OLE object.
Enter (if a drawing object or text object is selected)	Activates text input mode.
Ctrl+O	Opens a document.
Ctrl+S	Saves the current document.
Ctrl+N	Creates a new document.
Shift+Ctrl+N	Opens Templates and Documents dialogue.
Ctrl+P	Prints document.
Ctrl+Q	Exits application.
Ctrl+X	Cuts out the selected elements.
Ctrl+C	Copies the selected items.



Shortcut Keys	Effect
Ctrl+V	Pastes from the clipboard.
Ctrl+Alt+Shift+V	Pastes unformatted text from the clipboard. The text is pasted using the format that exists at the insertion point.
Ctrl+Shift+V	Opens the Paste Special dialogue.
Ctrl+A	Selects all.
Ctrl+Z	Undoes last action.
Ctrl+Y	Redoes last action.
Ctrl+Shift+Y	Repeats last command.
Ctrl+F	Calls the Find & Replace dialogue.
Ctrl+Shift+F	Searches for the last entered search term.
Ctrl+Shift+J	Toggles the view between fullscreen mode and normal mode in Writer or Calc
Ctrl+Shift+R	Redraws the document view.
Shift+Ctrl+I	Enable or disable the selection cursor in read-only text.
Ctrl+I	The Italic attribute is applied to the selected area. If the cursor is positioned in a word, this word is also marked in italic.
Ctrl+B	The Bold attribute is applied to the selected area. If the cursor is positioned in a word, this word is also put in bold.
Ctrl+U	The Underlined attribute is applied to the selected area. If the cursor is positioned in a word, this word is also underlined.

A complete overview of all shortcut keys for LibreOffice Writer is available at http://help.libreoffice.org/Writer/Shortcut_Keys_for_Writer.

2.5.3 Making, saving and printing a simple spreadsheet in MSeExcel

2.5.3.1 An Overview of Excel

Excel can be downloaded at <http://office.microsoft.com>.

Note: it is NOT free.

To start Excel, choose Start→All Programs→Microsoft Office→Microsoft Office Excel (as in Figure 102). A new, blank workbook appears, ready for you to enter data (as in Figure 103).

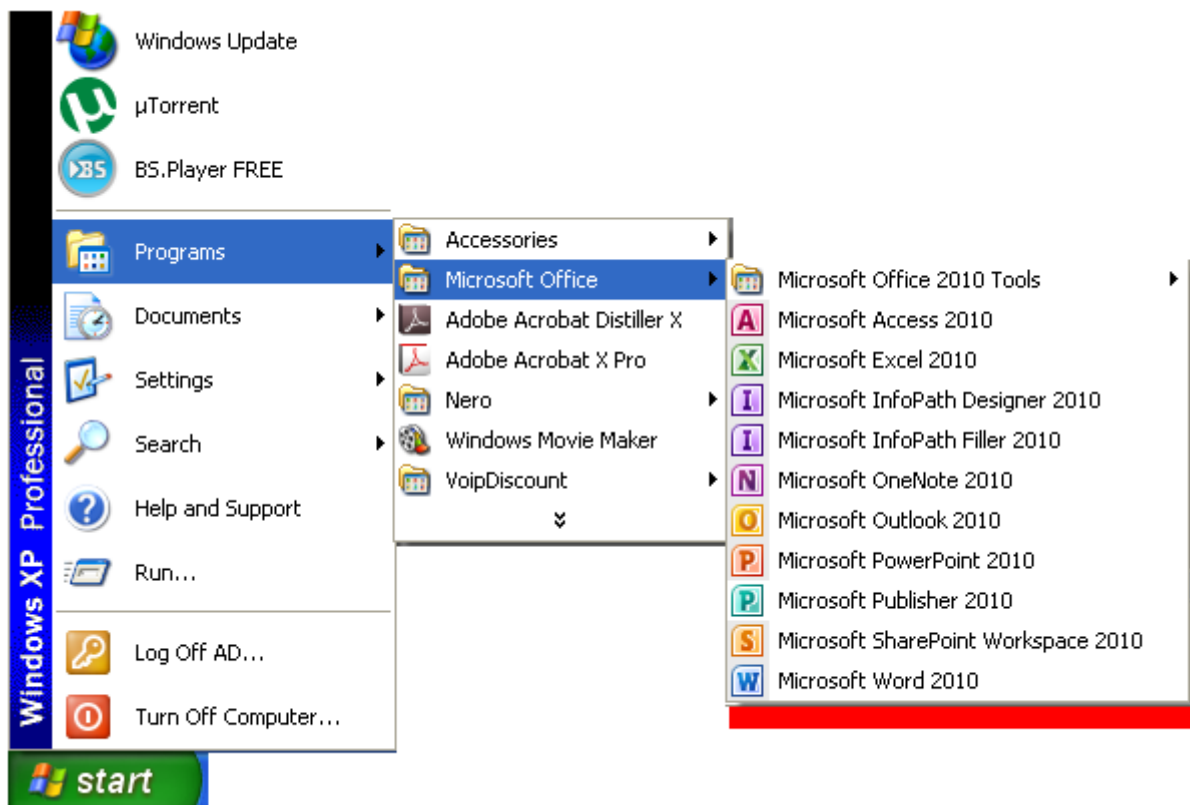


Figure 102: Start Menu –Excel 2010

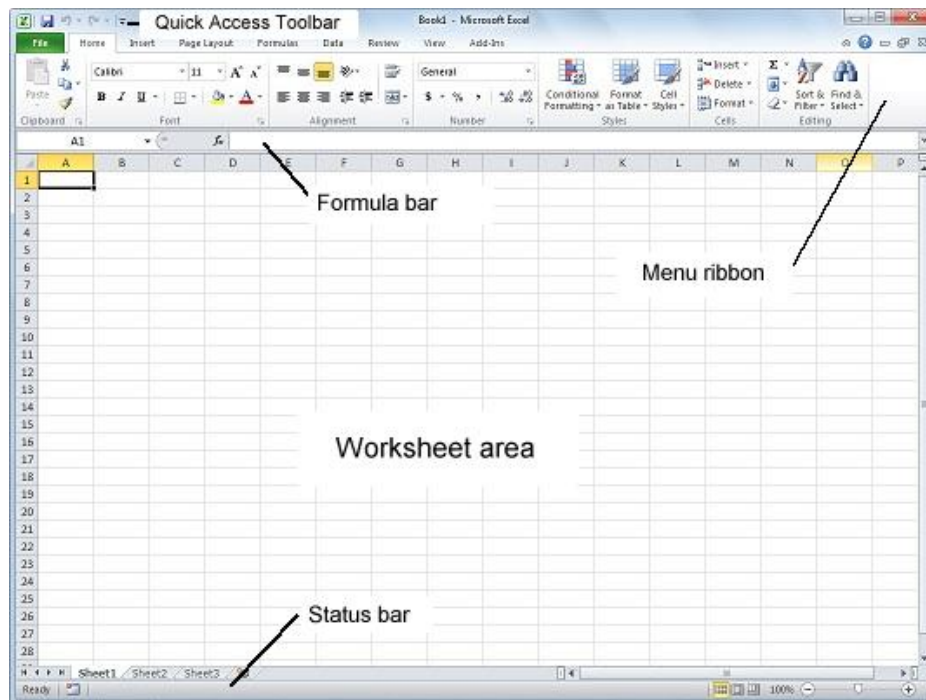


Figure 103: Excel start up screen

Figure 104 shows the parts of the Excel window and the terms we use to refer to them. The menu systems are similar to those experienced previously in Microsoft Word, but the main body of the spreadsheet is built up of cells labelled with letters and numbers.

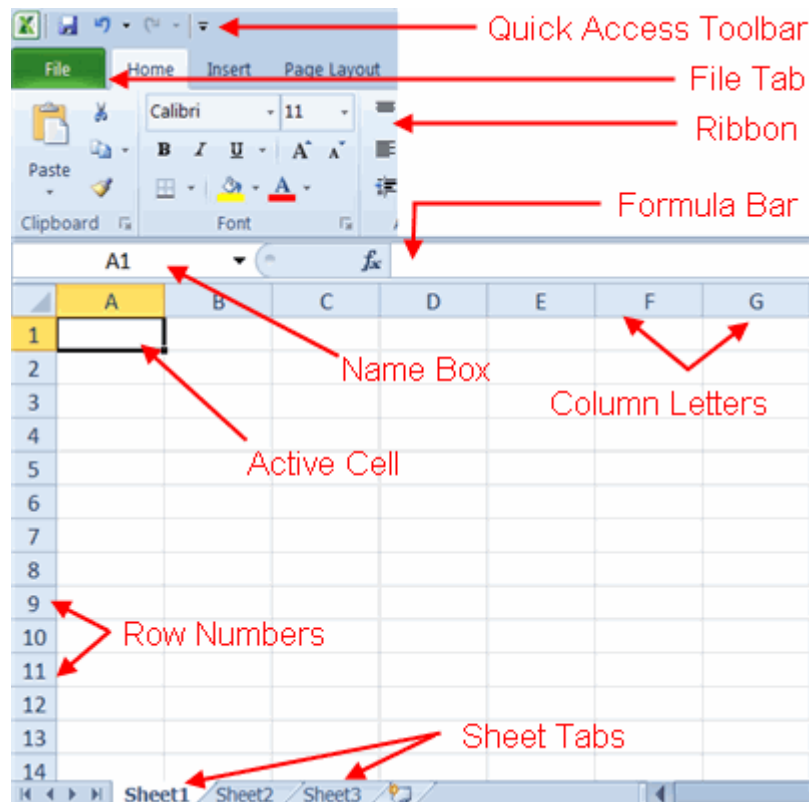


Figure 104: Parts of the Excel 2010 screen

2.5.3.2 Using Excel

1. Adding a data table

Excel works with documents called spreadsheets. Spreadsheets consist of a number of individual sheets, each sheet containing cells arranged in rows and columns. A particular cell is identified by its row number and column letter. Cell A1 is highlighted in Figure 105.

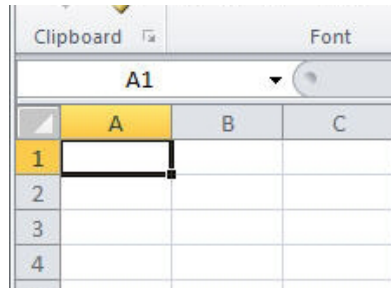


Figure 105: Cell A1 is selected: row 1, and column A.

Cells hold the individual elements—text, numbers, formulas, and so on—that make up the data.

Each spreadsheet can have many sheets (see the tabs shown in Figure 106), and each sheet can have many individual cells.



Figure 106: Spreadsheet with 3 sheets

Excel displays a blank data form when starting up, which you can fill in. Type the information for the first field and press Tab to move to the next field or press on the right arrow. Excel adds the record to the table and displays another blank data form. A sheet with entered data is shown by way of an example in Figure 107

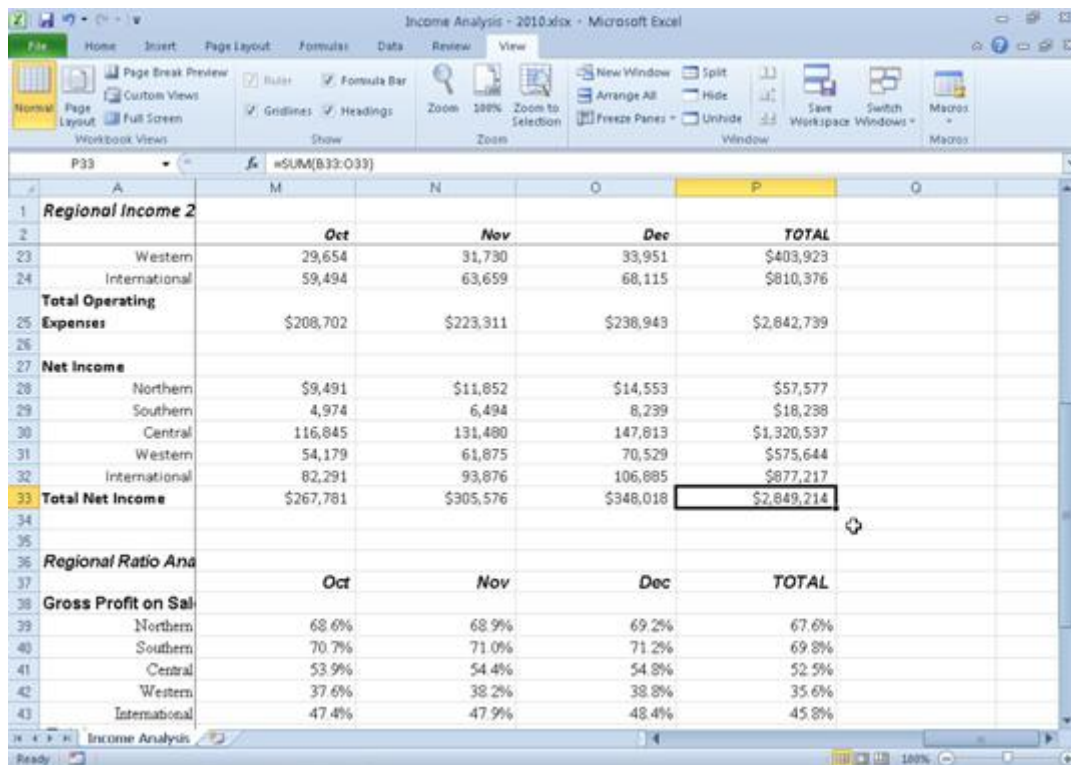


Figure 107: Example of data entered in a worksheet entitled "Income Analysis"

2. Displaying as a simple chart (Pie or bar)

Charts are used to display series of numeric data in a graphical format to make it easier to understand large quantities of data in a graphical manner.

To create a chart in Excel, you start by entering the numeric data for the chart on a worksheet. It is important that you properly arrange the data from the very start, considering the different chart types and especially the one you would like to use.

Column, bar, line, area, surface or radar chart

You should arrange the data in columns or rows.

Data in columns:

COLUMN HEADING 1	COLUMN HEADING 2
1	2
3	4

Data in rows:

ROW HEADING 1	1	3
ROW HEADING 2	2	4

**Pie or doughnut chart with only one series of data**

The data should be arranged in one column or row only.

One column of data and one column of data labels:

A	1
B	2
C	3

One row of data and one row of data labels:

A	B	C
1	2	3

Pie chart or doughnut chart that has more than one series of data

The data should be arranged in more than one column or row.

More than one column of data:

A	1	2
B	3	4
C	5	6

More than one row of data:

A	B	C
1	2	3
4	5	6

XY (scatter) or bubble chart

The data should be arranged in columns, so that X values are listed in the first column and corresponding Y values are listed in adjacent columns.

Data in columns:

X	Y
1	2
4	5

Stock chart

The data should be arranged in the following order (in rows or columns): high values, low values, and closing values.

For the labels, you should use names or dates.

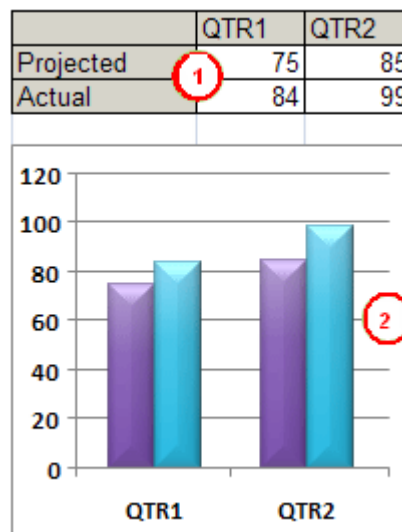
Data in columns:

DATE	PRICE 1	PRICE 2	PRICE 3
01/02/2012	15	13	21

Finally, to create the specific chart, the only next step to complete is to select the cells that contain the data that you want to use for the chart, and then plot that data into a chart by selecting the chart type that you want to use from the charts group in the Insert tab (as in **Error! Reference source not found.**)



Figure 108: Selecting the chart type that you want to use from the Insert tab, and then go to Charts group



Legend:

1 – Worksheet

2 – Chart created from worksheet data

Figure 109: Excel chart example with 2 rows and 2 columns

Here is also a video tutorial on how to get started with charts in Excel 2010:

<http://youtu.be/c70cjQXWkFI>.

1. Saving the document

You should regularly save your work. When you save an Excel workbook for the first time, you see the Save As dialogue box. The appearance and functionality of the Save As dialogue box varies depending on whether you are running Excel 2010 on Windows 7 or Vista or on Windows XP.

Saving an Excel 2010 workbook on Windows 7 or Vista

Follow these steps to save your workbook when running Excel 2010 on Windows 7 or Vista:

- Click the File tab and choose Save.
  - o The Save As dialogue box appears (as in Figure 110).
- Click the Browse Folders button (with the triangle pointing downward) to expand the Save As dialogue box if necessary.
  - o When you expand the Save As dialogue box, the dialogue box displays the Navigation pane, where you can select a folder.
- In the Navigation pane, select the folder in which you want to save the file.
  - o (Optional) If you want to save the workbook file inside a new subfolder within the folder currently open in the Save As dialogue box, you can click the New Folder button on the toolbar and then type the name of the folder and press Enter.
- Type a descriptive name for the file in the File Name box.
- Click the Save button to save the file in the selected folder.

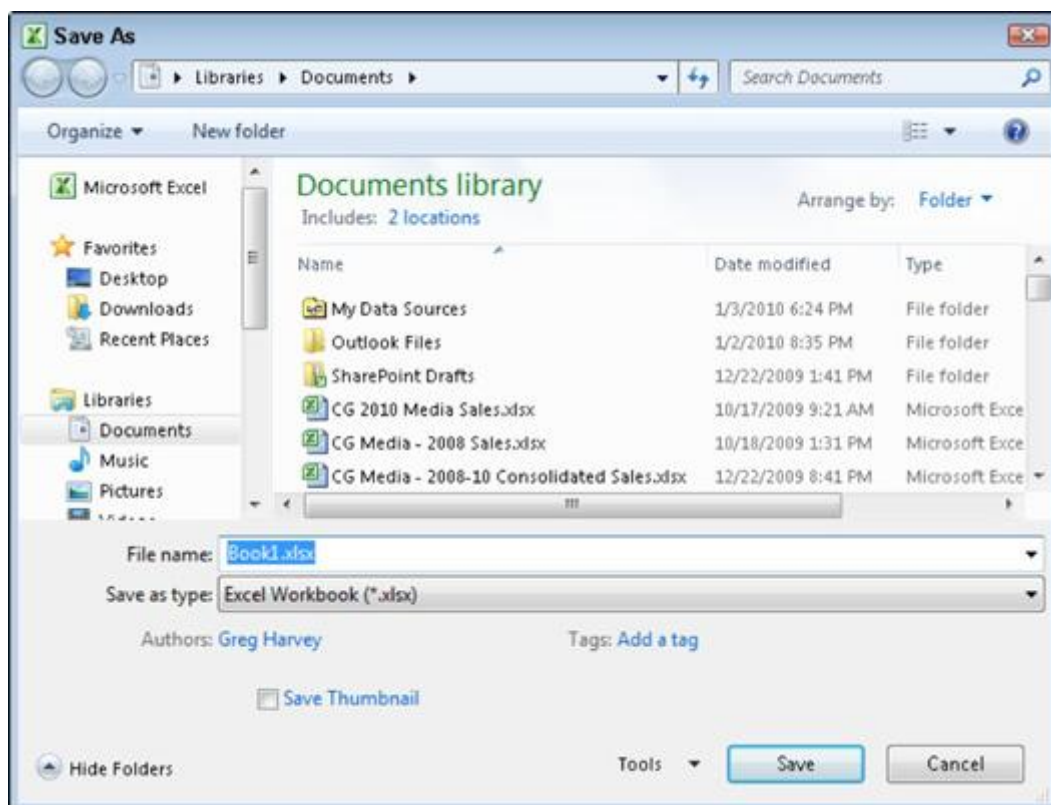


Figure 110: The Save As dialogue box as it appears when running Excel 2010 on Windows 7.

Saving an Excel 2010 workbook on Windows XP

Follow these steps to save your workbook when running Excel 2010 on Windows XP:

- Click the File tab and choose Save.
  - o The Save As dialogue box appears.
- Click the Save In drop-down list button and select the folder in which you want to save the file.
- Type a descriptive name for the file in the File name box.
- Click the Save button to save the file in the selected folder.

2. Closing the document

To close an Excel sheet:

- Click on the top right on the 2nd "X" icon (as seen in Figure 111).



Figure 111: Closing excel sheet

- This will close the current Excel spreadsheet, but won't close down the Excel program itself.
- To close down Excel program itself, click again on the top right on the top "X" icon as in Figure 112.



Figure 112: Close down Excel programme

3. Re-opening the saved document

When you have an Excel spreadsheet successfully saved in a folder on your PC, you can re-open it when you need to use it by the following processes

- Open Excel and then click on **File** → **Open** → Find the Folder where you file exists → **Open**.
- If the spreadsheet type is associated with Excel, you can just navigate to the file in Windows Explorer and then double click on it. It will open in Excel.

4. Printing the document

The final result can now be printed.

- Click the File tab. This takes you to Backstage view.
- Select Print. The Print pane appears, with the print settings on the left and the Print Preview on the right.
- To Print Active Sheets:
  - o Select the worksheets you want to print. To print multiple worksheets, click on the first worksheet, hold down the Ctrl key, then click on the other worksheets you want to select.
  - o Click the File tab.
  - o Select Print to access the Print pane.
  - o Select Print Active Sheets from the print range drop-down menu as in Figure 113.

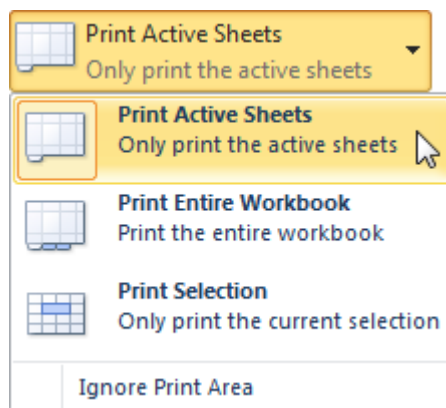


Figure 113: Selecting the Print Active Sheets command

- Click the Print button.
- To Print the Entire Workbook:
  - Click the File tab.
  - Select Print to access the Print pane.
  - Select Print Entire Workbook (Figure 114) from the print range drop-down menu.

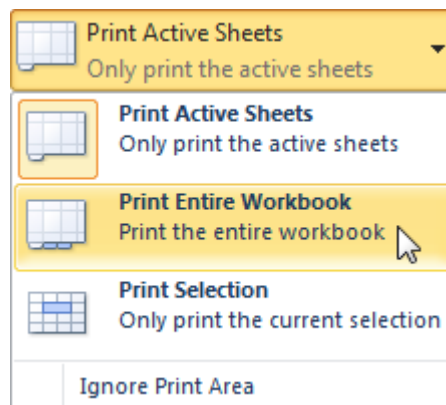


Figure 114: Selecting the Print Entire Workbook command

- Click the Print button.
- To Print a Selection, or Set the Print Area:
  - Select the cells that you want to print.
  - Click the File tab.
  - Select Print to access the Print pane.
  - Select Print Selection (Figure 115) from the print range drop-down menu.

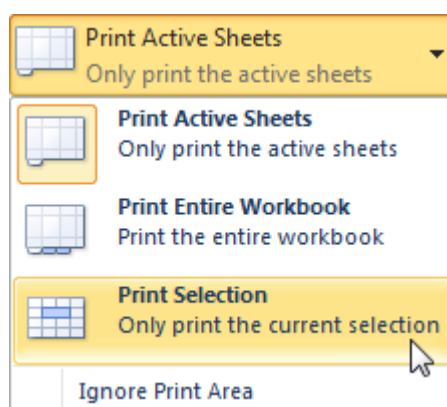


Figure 115: Selecting the Print Selection command

- You can see what your selection will look like on the page in Print Preview.
- Click the Print button.

2.5.3.3 *Shortcut Keys for Excel 2010*

In order to access Excel functionalities using the keyboard, following CTRL Combination Shortcut Keys exist.

Table 9: CTRL Combination Shortcut Keys

CTRL Combination Shortcut Keys	
Key	Description
CTRL+PgUp	Switches between worksheet tabs, from left-to-right.
CTRL+PgDn	Switches between worksheet tabs, from right-to-left.
CTRL+SHIFT+(	Unhides any hidden rows within the selection.
CTRL+SHIFT+&	Applies the outline border to the selected cells.
CTRL+SHIFT_	Removes the outline border from the selected cells.
CTRL+SHIFT+~	Applies the General number format.
CTRL+SHIFT+\$	Applies the Currency format with two decimal places (negative numbers in parentheses).
CTRL+SHIFT+%	Applies the Percentage format with no decimal places.
CTRL+SHIFT+^	Applies the Scientific number format with two decimal places.
CTRL+SHIFT+#	Applies the Date format with the day, month, and year.
CTRL+SHIFT+@	Applies the Time format with the hour and minute, and AM or PM.
CTRL+SHIFT+!	Applies the Number format with two decimal places, thousands separator, and minus sign (-) for negative values.
CTRL+SHIFT+*	Selects the current region around the active cell (the data area enclosed by blank rows and blank columns). In a PivotTable, it selects the entire PivotTable report.
CTRL+SHIFT+:	Enters the current time.
CTRL+SHIFT+"	Copies the value from the cell above the active cell into the cell or the Formula Bar.
CTRL+SHIFT+Plus (+)	Displays the Insert dialogue box to insert blank cells.
CTRL+Minus (-)	Displays the Delete dialogue box to delete the selected cells.
CTRL+;	Enters the current date.
CTRL+`	Alternates between displaying cell values and displaying formulas in the worksheet.
CTRL+'	Copies a formula from the cell above the active cell into the cell or the Formula Bar.



CTRL Combination Shortcut Keys	
Key	Description
CTRL+1	Displays the Format Cells dialogue box.
CTRL+2	Applies or removes bold formatting.
CTRL+3	Applies or removes italic formatting.
CTRL+4	Applies or removes underlining.
CTRL+5	Applies or removes strikethrough.
CTRL+6	Alternates between hiding and displaying objects.
CTRL+8	Displays or hides the outline symbols.
CTRL+9	Hides the selected rows.
CTRL+0	Hides the selected columns.
CTRL+A	Selects the entire worksheet. If the worksheet contains data, CTRL+A selects the current region. Pressing CTRL+A a second time selects the entire worksheet. When the insertion point is to the right of a function name in a formula, displays the Function Arguments dialogue box. CTRL+SHIFT+A inserts the argument names and parentheses when the insertion point is to the right of a function name in a formula.
CTRL+B	Applies or removes bold formatting.
CTRL+C	Copies the selected cells.
CTRL+D	Uses the Fill Down command to copy the contents and format of the topmost cell of a selected range into the cells below.
CTRL+F	Displays the Find and Replace dialogue box, with the Find tab selected. SHIFT+F5 also displays this tab, while SHIFT+F4 repeats the last Find action. CTRL+SHIFT+F opens the Format Cells dialogue box with the Font tab selected.
CTRL+G	Displays the Go To dialogue box. F5 also displays this dialogue box.
CTRL+H	Displays the Find and Replace dialogue box, with the Replace tab selected.
CTRL+I	Applies or removes italic formatting.
CTRL+K	Displays the Insert Hyperlink dialogue box for new hyperlinks or the Edit Hyperlink dialogue box for selected existing hyperlinks.
CTRL+L	Displays the Create Table dialogue box.
CTRL+N	Creates a new, blank workbook.
CTRL+O	Displays the Open dialogue box to open or find a file. CTRL+SHIFT+O selects all cells that contain comments.
CTRL+P	Displays the Print tab in Microsoft Office Backstage view. CTRL+SHIFT+P opens the Format Cells dialogue box with the Font tab selected.
CTRL+R	Uses the Fill Right command to copy the contents and format of the leftmost cell of a selected range into the cells to the right.
CTRL+S	Saves the active file with its current file name, location, and file format.
CTRL+T	Displays the Create Table dialogue box.
CTRL+U	Applies or removes underlining. CTRL+SHIFT+U switches between expanding and collapsing of the formula bar.
CTRL+V	Inserts the contents of the Clipboard at the insertion point and replaces any selection. Available only after you have cut or copied an object, text, or cell contents. CTRL+ALT+V displays the Paste Special dialogue box. Available only after you have cut or copied an object, text, or cell contents on a worksheet or in another program.
CTRL+W	Closes the selected workbook window.

CTRL Combination Shortcut Keys

Key	Description
CTRL+X	Cuts the selected cells.
CTRL+Y	Repeats the last command or action, if possible.
CTRL+Z	Uses the Undo command to reverse the last command or to delete the last entry that you typed.

A complete overview of keyboard shortcuts in Excel 2010 is available from <http://office.microsoft.com/en-us/excel-help/keyboard-shortcuts-in-excel-2010-HP010342494.aspx#BM2>.

2.5.4 Making and saving a simple spreadsheet in LibreOffice Calc

2.5.4.1 Overview of LibreCalc

LibreOffice Calc can be downloaded at <http://www.libreoffice.org/download/>.

Note: it is free.

Calc is the spreadsheet component of LibreOffice. Calc works similarly to Excel with documents called *spreadsheets*. Spreadsheets consist of a number of individual *sheets*, each sheet containing cells arranged in rows and columns. A particular cell is identified by its row number and column letter.

Cells hold the individual elements—text, numbers, formulas, and so on—that make up the data to display and manipulate.

Each spreadsheet can have many sheets, and each sheet can have many individual cells.

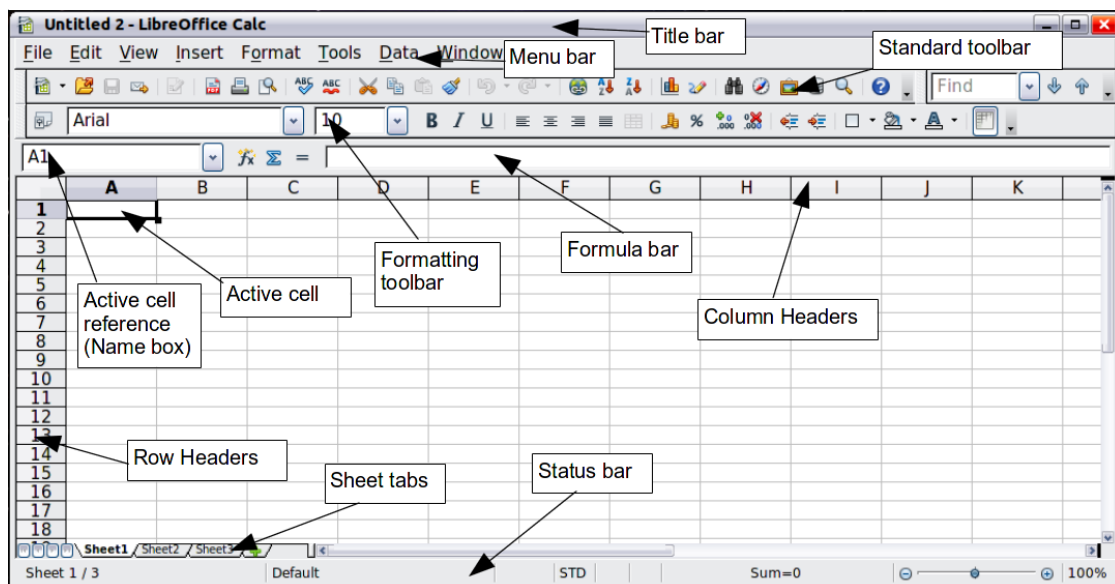


Figure 116: Parts of the Calc window

The parts of the LibreCalc window are shown in Figure 116. The window consists broadly of the menus at the top, a bar for data entry below that, and the contents of the sheet in the bulk of the window. The active (or highlighted) cell (or cells) is (are) marked with a bold outline.

2.5.4.2 Using LibreCalc

1. Adding a data table

To move the focus using the mouse, simply move the mouse pointer to the cell where you want the focus to be and click the left mouse button. You can now enter data. By pressing Enter or the down arrow, you go to the cell below, or by using the mouse you can click on any other cell. Pressing *Tab* or *Shift+Tab* moves the focus to the right or to the left, respectively.

Pressing the arrow keys on the keyboard moves the focus in the direction of the arrows.

Each sheet in a spreadsheet is independent of the others, though they can be linked with references from one sheet to another.

2. Displaying a simple chart (Pie or bar)

LibreOffice allows you to present data graphically in a chart, so that you can visually present data.

- Select the cell range that you want to present in your chart (as in Figure 117).

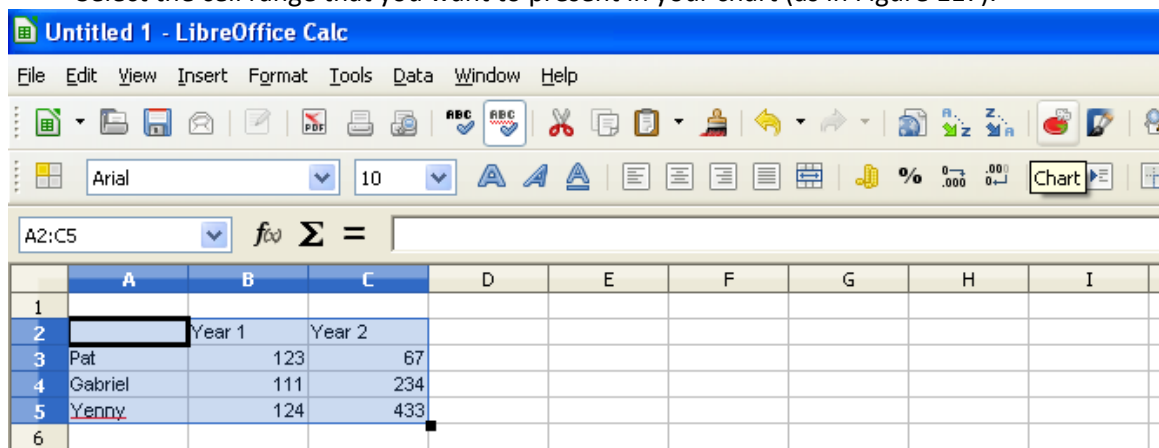


Figure 117: Selected data cells to appear in the chart, together with selected data graphic.

- Click the Insert Chart icon on the Standard toolbar. You see a chart preview on your spreadsheet while also the Chart Wizard is started (as in Figure 118).

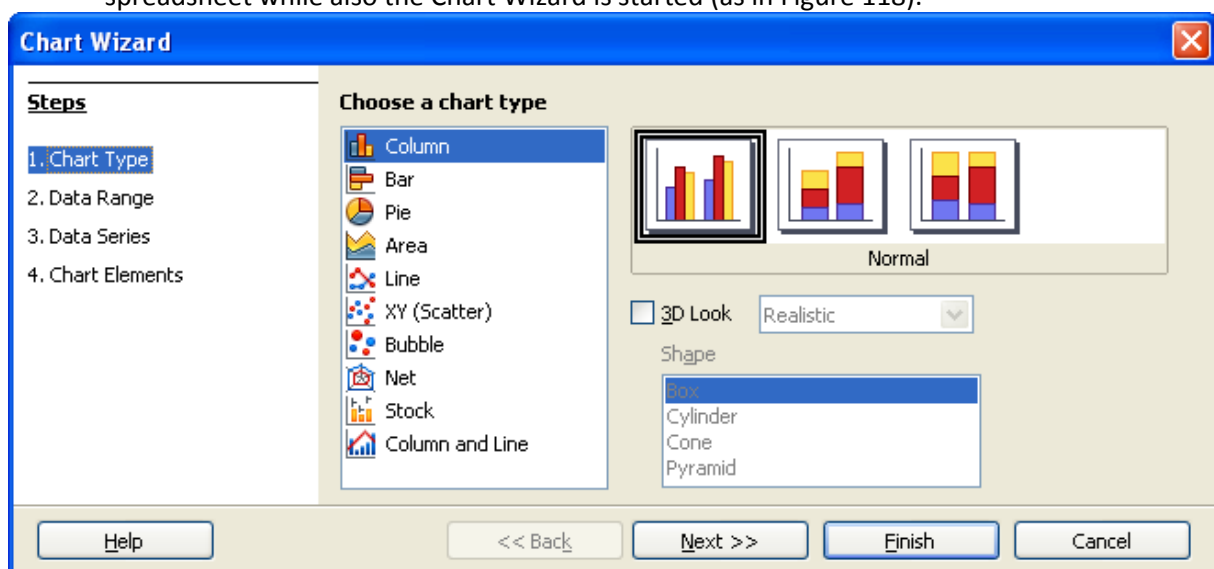


Figure 118: Chart wizard with different steps and options.

- On the first page of the Chart Wizard you can choose a chart type.

- Choose a basic chart type: click any of the entries labelled Column, Bar, Pie, and so on. The contents on the right side will change to offer more options depending on the basic chart type. Optionally, click any of the options. While you change the settings in the wizard, watch the preview in the document to see how the chart will look. A handy tip is to press Shift+F1 and point to a control to see an extended help text.
- Click **Next** to see the next wizard page, or click the entries on the left side of the wizard to go to that page.
- Click **Back** to see the previous wizard page.
- Click **Finish** on any wizard page to close the wizard and create the chart using the current settings, and the chart should finalise similar to the one in Figure 119.
- Click **Cancel** to close the wizard without creating a chart.

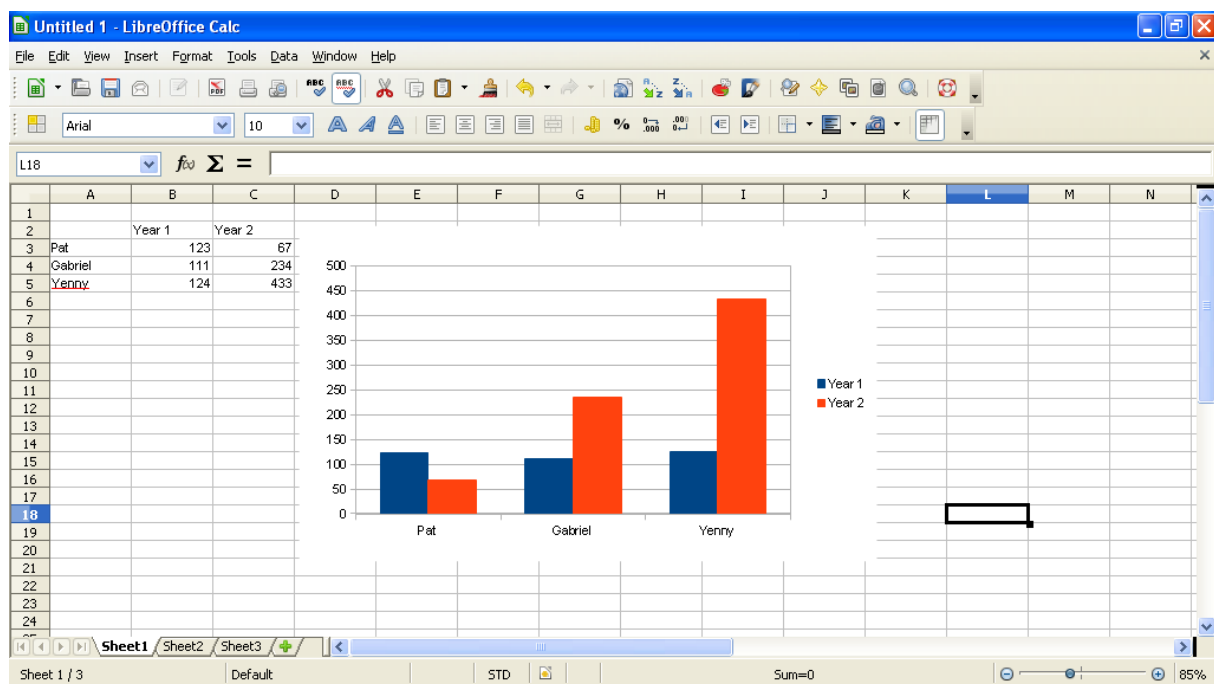


Figure 119: Resulting chart

To edit a chart:

- Click a chart to edit the object properties: Size and position on the current page, alignment, text wrap, outer borders, and more.
- Double-click a chart to enter the chart edit mode: Chart data values (for charts with own data). Chart type, axes, titles, walls, grid, and more.
  - o Double-click a chart element in chart edit mode:
    - Double-click an axis to edit the scale, type, colour, and more.
    - Double-click a data point to select and edit the data series to which the data point belongs. With a data series selected, click, then double-click a single data point to edit the properties of this data point (for example, a single bar in a bar chart). Double-click the legend to select and edit the legend. Click, then double-click a symbol in the selected legend to edit the associated data series. Double-click any other chart element, or click the element and open the Format menu, to edit the properties.
- Click outside the chart to leave the current edit mode.

3. Saving the document

To save the spreadsheet, select **File → Save** (as in Figure 120), and the **Save As** dialogue box opens. A simple CTRL+S will have the same outcome. You now select the place where you want to store the file, give it the appropriate name and file type, and select **Save** (as in Figure 121).

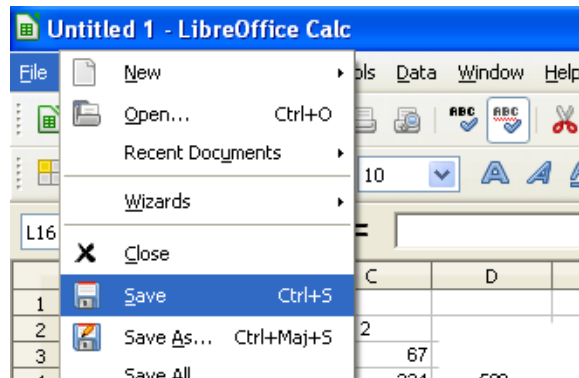


Figure 120: To save the spreadsheet, select File → Save

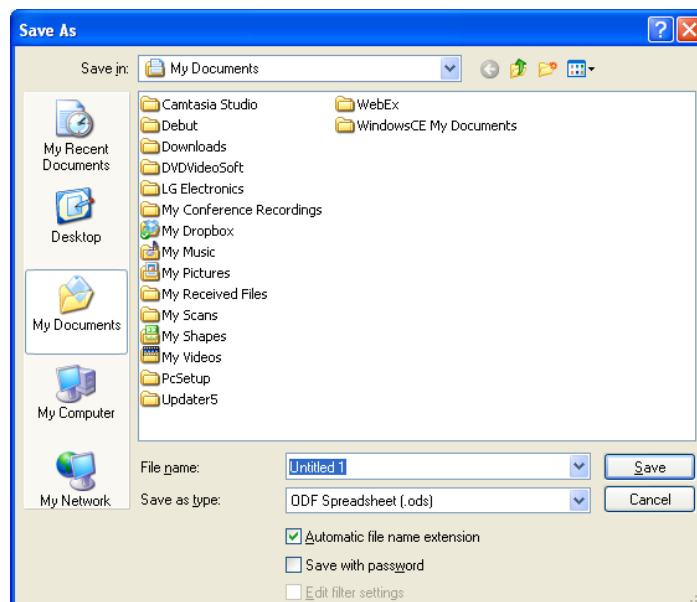


Figure 121: Save As dialogue box

4. Closing the document

To close LibreOffice Calc completely, choose **File → Exit**.

If all the documents have been saved, LibreOffice Calc closes immediately. If any documents have been modified but not saved, a warning message appears.

5. Re-opening the saved document

You open an existing document by:

- Choosing **File → Open...**
- The Open dialogue appears.
- Select the file you want, and then click **Open**.
- If a document is already open in LibreOffice Calc, the second document opens in a new window.

6. Printing the document

Printing from LibreOffice Calc is much the same as printing from other programmes but some details are different, especially regarding preparation for printing. Print ranges have several uses, including printing only a specific part of the data or printing selected rows or columns on every page.

To print in landscape format, proceed as follows:

- Go to the sheet to be printed.
- Choose Format - Page.
  - o The command is not visible if the sheet has been opened with write protection on. In that case, click the Edit File icon on the Standard bar.
- Select the Page tab. Select the Landscape paper format and click OK.
- Choose File - Print. You will see the Print dialogue.
  - o Depending on the printer driver and the operating system, it may be necessary to click the Properties button and to change your printer to landscape format there.
- In the Print dialogue (Figure 122) in the General tab page, select the contents to be printed:
  - o All sheets - All sheets will be printed.
  - o Selected sheets - Only the selected sheets will be printed. All sheets whose names (at the bottom on the sheet tabs) are selected will be printed. By pressing Ctrl while clicking a sheet name you can change this selection.
  - o Selected cells - All selected cells are printed.

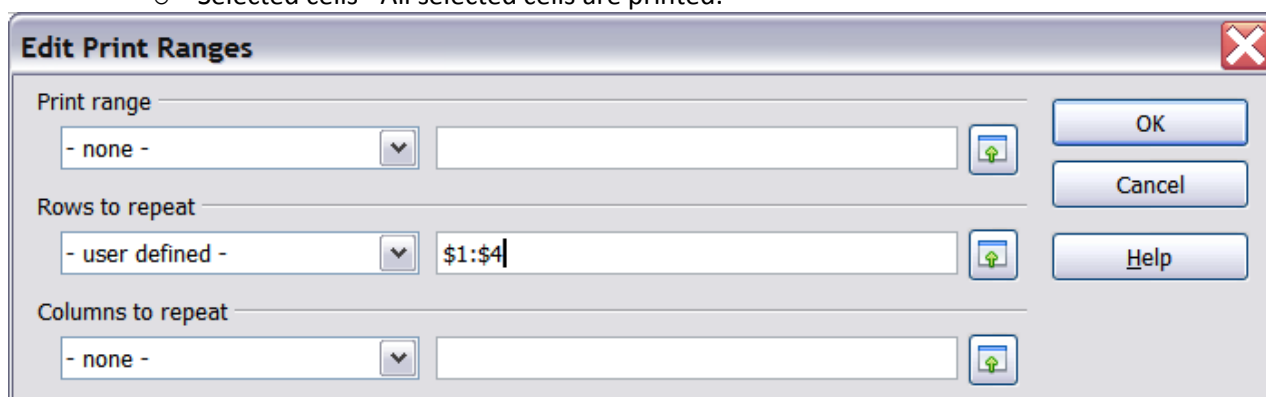


Figure 122: Specifying repeating rows

2.5.4.3 Using keyboard shortcuts in LibreCalc

Following table provides an overview of the shortcuts allow for navigating in the spreadsheets.

Shortcut Keys	Effect
Ctrl+Home	Moves the cursor to the first cell in the sheet (A1).
Ctrl+End	Moves the cursor to the last cell on the sheet that contains data.
Home	Moves the cursor to the first cell of the current row.
End	Moves the cursor to the last cell of the current row.
Shift+Home	Selects cells from the current cell to the first cell of the current row.
Shift+End	Selects cells from the current cell to the last cell of the current row.
Shift+Page Up	Selects cells from the current cell up to one page in the current column or extends the existing selection one page up.
Shift+Page Down	Selects cells from the current cell down to one page in the current column or extends the existing selection one page down.



Shortcut Keys	Effect
Ctrl+Left Arrow	Moves the cursor to the left edge of the current data range. If the column to the left of the cell that contains the cursor is empty, the cursor moves to the next column to the left that contains data.
Ctrl+Right Arrow	Moves the cursor to the right edge of the current data range. If the column to the right of the cell that contains the cursor is empty, the cursor moves to the next column to the right that contains data.
Ctrl+Up Arrow	Moves the cursor to the top edge of the current data range. If the row above the cell that contains the cursor is empty, the cursor moves up to the next row that contains data.
Ctrl+Down Arrow	Moves the cursor to the bottom edge of the current data range. If the row below the cell that contains the cursor is empty, the cursor moves down to the next row that contains data.
Ctrl+Shift+Arrow	Selects all cells containing data from the current cell to the end of the continuous range of data cells, in the direction of the arrow pressed. If used to select rows and columns together, a rectangular cell range is selected.
Ctrl+Page Up	Moves one sheet to the left. In the page preview: Moves to the previous print page.
Ctrl+Page Down	Moves one sheet to the right. In the page preview: Moves to the next print page.
Alt+Page Up	Moves one screen to the left.
Alt+Page Down	Moves one screen page to the right.
Shift+Ctrl+Page Up	Adds the previous sheet to the current selection of sheets. If all the sheets in a spreadsheet are selected, this shortcut key combination only selects the previous sheet. Makes the previous sheet the current sheet.
Shift+Ctrl+Page Down	Adds the next sheet to the current selection of sheets. If all the sheets in a spreadsheet are selected, this shortcut key combination only selects the next sheet. Makes the next sheet the current sheet.
Ctrl+ *	where (*) is the multiplication sign on the numeric key pad Selects the data range that contains the cursor. A range is a contiguous cell range that contains data and is bounded by empty row and columns.
Ctrl+ /	where (/) is the division sign on the numeric key pad Selects the matrix formula range that contains the cursor.
Ctrl+Plus key	Insert cells (as in menu Insert - Cells)
Ctrl+Minus key	Delete cells (as in menu Edit - Delete Cells)
Enter (in a selected range)	Moves the cursor down one cell in a selected range. To specify the direction that the cursor moves, choose Tools - Options - LibreOffice Calc - General.
Ctrl+ ` (see note below this table)	Displays or hides the formulas instead of the values in all cells.

A complete overview of keyboard shortcuts in Excel 2010 is available from <http://office.microsoft.com/en-us/excel-help/keyboard-shortcuts-in-excel-2010-HP010342494.aspx#BM2>.

2.6 Web Browsing and Security

The **World Wide Web** (WWW, 3W) is the most used and exploited system that provides high performance access to a huge amount of documents, which are linked together, through a global computer network (*the Internet*). In fact it is an unprecedented tool for data collection.

Computer users can browse through information, publish documents and exchange information.

The World-Wide Web is designed around two key concepts: hypertext documents and network based information retrieval. Hypertext documents are simple documents that contain information, graphics and/or videos and sounds and acting as links to other documents. Typically these documents are presented to the user with text with [highlighted](#) words or images, known as *hyperlinks*. Many Web sites are hyperlinked together allowing users to access materials or services hosted on other sites. Users can move between these sites by clicking links, an act that is known as navigating or “surfing” in the WWW. Access to WWW is provided by dedicated computer programs called *web browsers*, which can run on PCs, laptops, netbooks and smartphones.

However, along with its potentials the World Wide Web brings along a number of problems such as missing data, unacceptable and incorrect data and security and integrity problems.

General security issues related to the use of WWW, concern Web readers, namely anyone who uses a Web browser and publishers.

Specifically some of the causes that a Web reader can face are the following that are quoted below:

- Damage to the system and user information from buggy software,
- Virus-infected executables
- Trojan horse programs
- Embedded macros and downloadable applets (an applet is a small program that is downloaded and executed on-the-fly by the browser).

Users’ browsing activities can be published or sold, hence individuals’ personal information and data can be exposed.

Specifically Web threats could be derived from shortcuts in the software development process, shortcomings in popular operating systems or deficiencies in the Internet protocols.

2.6.1 Web browsing software

Currently there are many web browsers available for free. We shall present the most widely used and explain how to start them (launch the web browser software).

The most common web browsers and their respective identifiers (icons) are shown in Table 10.

Table 10: Web browsers and their icons/identifiers

Name	Icon
Internet Explorer	
Google Chrome	

Name	Icon
Mozilla Firefox	
Lynx Text browser (useful for visually impaired people)	
Opera	
Safari	

2.6.2 How to start a web browser

A user can launch a web browser through alternative options such as a) by clicking on its icon on the desktop, b) clicking and selecting the Quick Launch icon or c) from the start panel. The three options are explained in the following.

a) Launch from desktop

To start a browser from the desktop, simply move your cursor over its icon and do a double left click  on it. The icons of the mentioned Web browsers, as appearing on the desktop of a device running MS Windows operating systems, are shown in Figure 123 to Figure 126.

i) Internet Explorer



Figure 123: Icon of Internet Explorer on the desktop

ii) Google Chrome

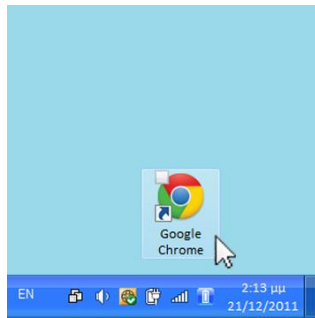


Figure 124: Icon of Google Chrome on the desktop

iii) Mozilla Firefox



Figure 125: Icon of Mozilla Firefox on the desktop

iv) Lynx Text browser

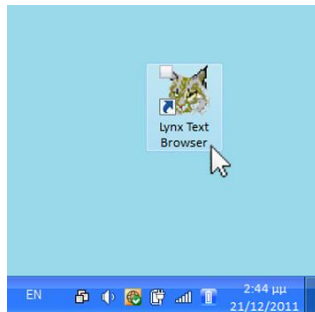


Figure 126: Icon of Lynx Text browser on the desktop

b) Launch the browser from the quick launch bar

Another way of starting a web browser is from the quick launch bar (Figure 127) placed in the task bar (the bar where the time and date are displayed). If the icon of the browser is displayed there you can simply move your cursor over its icon and do a single left click  on it:



Figure 127: Web browsers' icons as appearing on the quick launch bar

If the icon is not displayed on the taskbar you can add it by right-clicking  on the desktop icon and choose "Pin to taskbar" (see Figure 128).

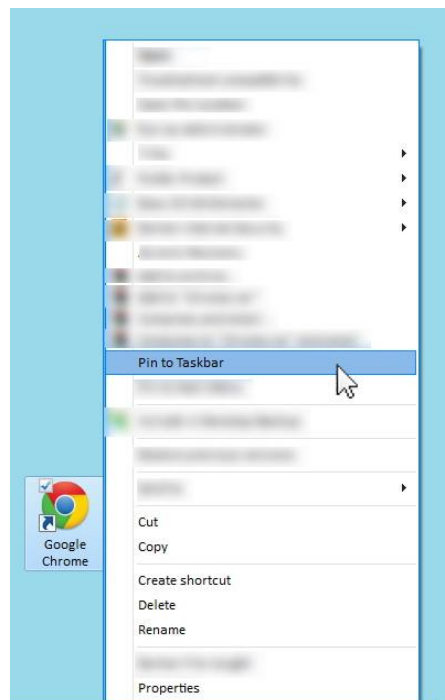


Figure 128: The “Pin to Taskbar” option to move an icon on the quick launch bar

(Tip: This can work with any program that you would like to appear on the taskbar e.g. MS Outlook)

c) Launch from start panel

Start the web browser from the start panel click  on the windows logo at the left bottom of the screen and type the name of the browser at the “Search programs and files field” as shown below for Mozilla Firefox (see Figure 129)

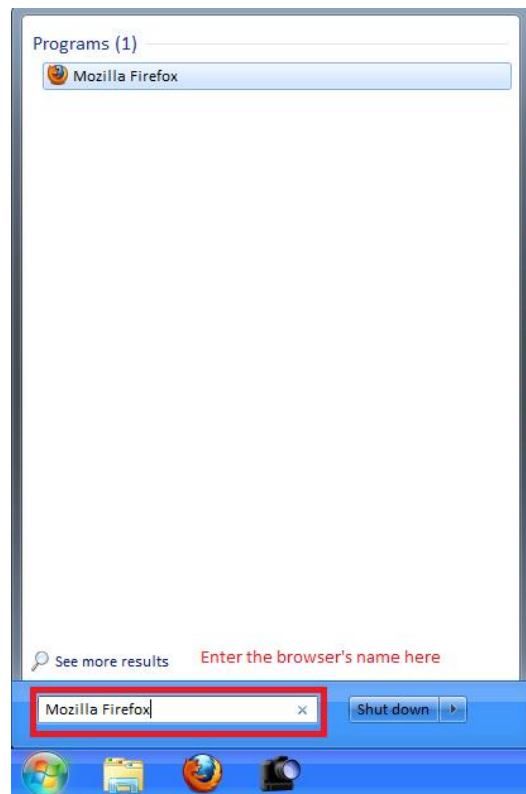


Figure 129: Starting a Web browser from the Start panel

As soon as the desired browser's name appears on the screen, you have to select it by a single click  on its name.

2.6.3 Using a Web Browser

This subsection is dedicated to web browsing capabilities of navigating and revisiting web pages. The web browser used for the illustration is Internet Explorer 9 as most Windows PCs come with it preinstalled. However, the relative information that is mentioned in this section, concerns every recent web browser since they all follow a similar design.

Figure 130, below, shows the browser window with the most important page-sections numbered, in order to be able to explain them individually.

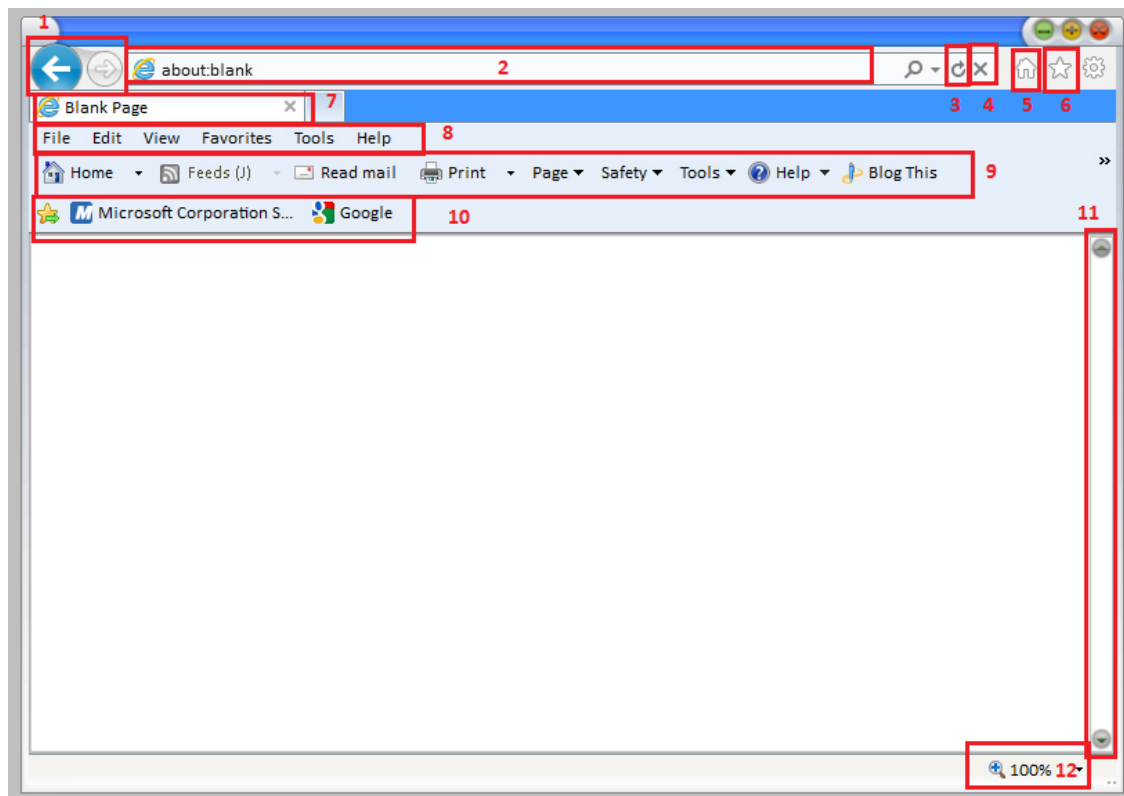


Figure 130: Identification of the different sections in a page of a Web browser, with numbers and red-line borders

2.6.3.1 Navigation via URL and domain names

The most basic step in order to start web browsing (navigating through the pages in the Internet) is to decide what page you would like to visit. Once you decide, you must enter its Internet address (in section 2 of **Error! Reference source not found.**) known as the *Uniform Resource Locator (URL)*. A URL is made of strings of characters that are necessary to identify the subject address on the Internet. For example, the URL of Google is <http://www.google.com>. Looking more carefully we note that it consists of three parts:

- I. The protocol identifier (http), which defines how your browser and the service behind the webpage communicate.
- II. A colon and two slashes, and
- III. The domain name www.google.com, which is used to identify the desired webpage.

The most known types of protocol identifiers are:

- i. **Http:** The most common, used for simple communication and browsing through the Internet.
- ii. **Https:** This is the secure version of Http. It is widely used for sensitive data transmissions e.g. money transfer, because it encrypts the exchanged information in order to avoid access from unauthorised sources.
- iii. **Ftp:** A URL that begins with ftp:// means that the target website is used to transfer files over the Internet.

The total number of registered domain names worldwide nearly reached the 220 million at the end of the third quarter of 2011, with all of them using a common structure. Every domain name begins with the “**www.**” prefix that indicates that the target webpage is on the World Wide Web. After **www.**, the specific name of the domain is entered e.g. Google. In order for a URL to be complete, a suffix is needed to indicate the type of the page. **Error! Reference source not found.**, provides a list with the most common types:

Table 11: A list with the most common types of suffixes for URLs. In the above list some suffixes of countries’ specific URLs are also provided as examples (<http://www.web-l.com/country-codes/>).

Suffix	Explanation
com	Commercial Business
edu	Educational Institutions
org	Non profit organizations
eu	European union
ac	Academic
cy	Cyprus
uk	United Kingdom
be	Belgium
gr	Greece
lt	Lithuania

Since an interpretation of the URL has been given (Uniform Resource Locators), the next step is to try to enter one in the browser window. An URL is copied or typed into the browser’s address bar, section **2** in Figure 130. In order to copy and paste an URL into the address bar you must first find the text containing the target website. Then, press and hold the left mouse button  , while dragging the cursor over the URL to highlight it. After that, right click  on the highlighted text and select copy (see also Figure 131).

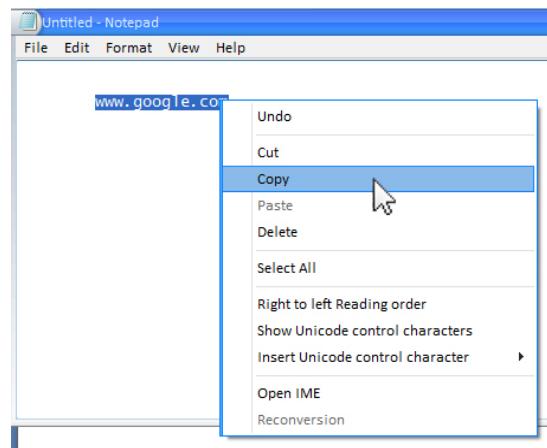


Figure 131: The Copy option by selecting and right clicking on a URL

Note: Be sure to select all the necessary information to avoid errors.

After the previous selection, go to the browser's address bar (Figure 130, section 2), right click  on it and select paste (see also Figure 132).

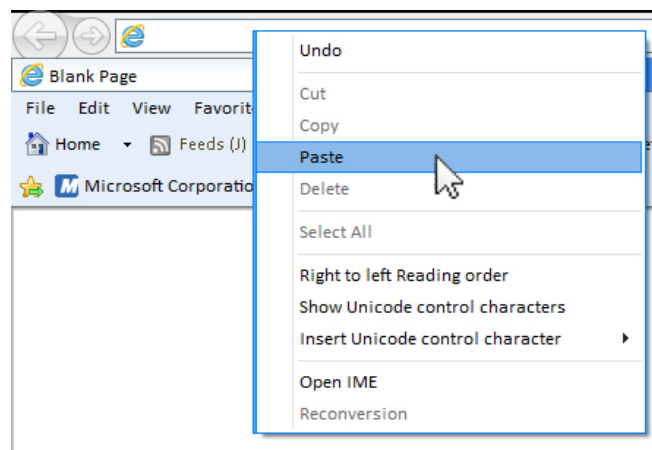


Figure 132: The Paste option by right clicking in the URL position of a Web browser

Alternatively, you can type the URL directly in the address bar (Figure 130, section 2). Simply click  on the address bar and press delete to clear unnecessary information. Then type the target website. Please, note that you do not have to type the `http://` prefix every time, since browsers are smart enough to add it when you type only the domain name e.g. `www.google.com`. However, you *have to* type the prefix in case of a secure page (`https`) or a file transfer page (`ftp`).

2.6.3.2 Hyperlinks

Hyperlink or link for short is another alternative for web target navigation. Hyperlinks are texts that perform some action when you click or select it and press ENTER. When you come across a link or an image that is set as a hyperlink, your cursor will change shape and become a hand pointer . All you have to do is a single left click and you will be redirected to the linked webpage. Moreover, you can move through all the links on the page by pressing the TAB key.

To create a hyperlink on your web page, type the text that you want to be the link. Highlight over the text that you want to make into a hyperlink. In the properties window, type in the url in the link field

2.6.3.3 Use of back and forward button

Every time you move to another page the browser gives you the option to go *back* to the previous page you were viewing. To do this, you must click on the arrow pointing left called the back button (Figure 130, section 1). If you would like to move back again you can click again until you reach the very first page when you opened the browser. When you move back through your already visited pages, you can move forward again to the most recent pages. This is done with a single click on the arrow pointing right, named the *forward* button (Figure 130, section 1).

In some cases, it is advised not to use the back button, for example when conducting an online payment, but to use instead the navigation options provided on the webpage itself.

2.6.3.4 Browsing history

The *back* and *forward* buttons are useful when the pages you want to access were opened at the current session of browsing (no closing and re-opening of the browser happened in the meantime). For instance, if you would like to revisit a page that you have opened yesterday but you do not remember its address, you can use another useful feature called the *history list*. As the name suggests, history is a list with all the pages that you have visited during the last 3 weeks (for Internet Explorer 9). To find the history list, click on the command bar (Figure 130, section 9) and choose Explorer Bars→History, as shown in Figure 133.

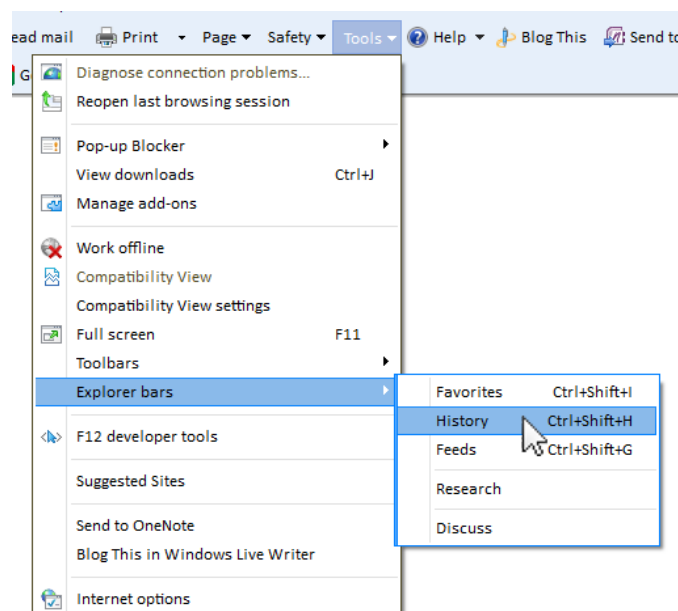


Figure 133: Illustration of procedure to find the History list, for Internet Explorer 9

The history list should now appear at the left of the screen as shown in Figure 134.

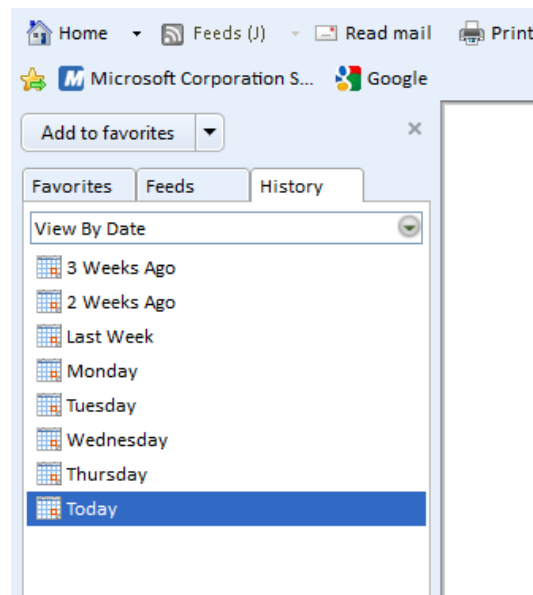


Figure 134: The history list as presented in Internet Explorer 9

A single click on a list's option will reveal the websites visited that day and you can visit them again without having to remember all the details. The history's list duration can be configured by the user as illustrated below:

- i. From the menu bar (Figure 130, section 9) select Tools→ Internet options
- ii. Then from the pop up screen, locate the section labelled "Browsing history" and select Settings as shown in Figure 135. (*Note: You can erase the history list by selecting "Delete..." in the same section*)

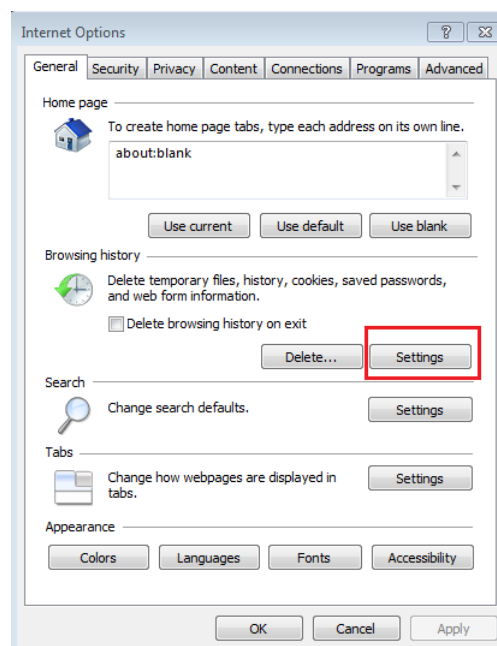


Figure 135: The Settings button in the Internet Options window, for Internet Explorer 9

- iii. Finally, from the new pop up screen, configure the “Days to keep pages in history” option and select OK, as shown in Figure 136.

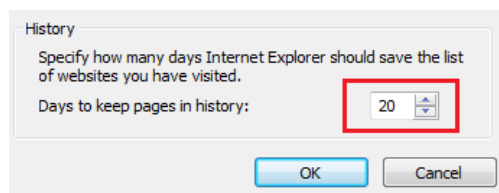


Figure 136: The window where you can define the days to keep the pages in history, for Internet Explorer 9

2.6.3.5 Favourites feature

The history list is not the only option for the browser to remember the pages you might want to revisit. Another feature of modern browsers is the *favourites list*. This list offers you the option to save a web address in order to save time searching for it or typing it. To add a website to this list, first click on the Favourites label (or Bookmarks for some browsers) on the menu bar (**Error! Reference source not found.**, section 8) and then select the *Add to favourites* (or bookmark) option. For fast access to the saved page, you can choose *Add to favourites bar* and the link will appear at the favourites bar (**Error! Reference source not found.**, section 10). Alternatively, you can open this menu by clicking on the star symbol (**Error! Reference source not found.**, section 6). The whole procedure to add a page to the favourites list is called *bookmarking a page* and the link to the page is called a *bookmark*.

2.6.3.6 Reload button

If, for any reason, a website stops loading its content, you can take action to make it reload. This is done by clicking the *reload* button (Figure 130, section 3). In the same way you can prevent a website from loading by clicking the *stop* button (Figure 130, section 4). Instead of moving to the next page, some hyperlinks might open the page in a new tabbed window. You can then select the tab by clicking its name (Figure 130, section 7) or close it by clicking the **x** symbol next to it. Usually a website does not perfectly fit on the screen but you must scroll vertically to reach content at the bottom by using the *scroll bar arrows* (Figure 130, section 11). Another way of fitting more content on the screen or zooming in to a particular area of the screen is with the use of the *zoom bar* (Figure 130, section 12). Select a higher percentage number to zoom-in or a lower to zoom-out.

2.6.4 Performing a search

The Internet offers unlimited sources of information for all tastes. Like in traditional libraries, in digital libraries you have to first perform a search to find the right information and compare deeper similarities and differences based on information-seeking goals. For this purpose, many Internet search engines have emerged in recent years in order to explore the potential impact of these libraries. Search engines are “dedicated Web pages” that accept keywords from the user and search the web for relevant information. The most popular search engines are www.google.com from Google, <http://www.bing.com> from Microsoft and www.search.yahoo.com from Yahoo. The use of a

search engine is very simple. When you decide on the subject for which you want to obtain more information, enter the most important words in the textbox. Suppose we would like to find information about the subject *Internet's history*. First visit the search engine you would like to use, as learnt earlier in this course. Then in the page's search box enter the words *Internet* and *history* as shown in Figure 137 for Google and in Figure 138 for Bing search engines and then press the *enter* button of your keyboard or do a single left-click on the dedicated *Search* button of the web browser.

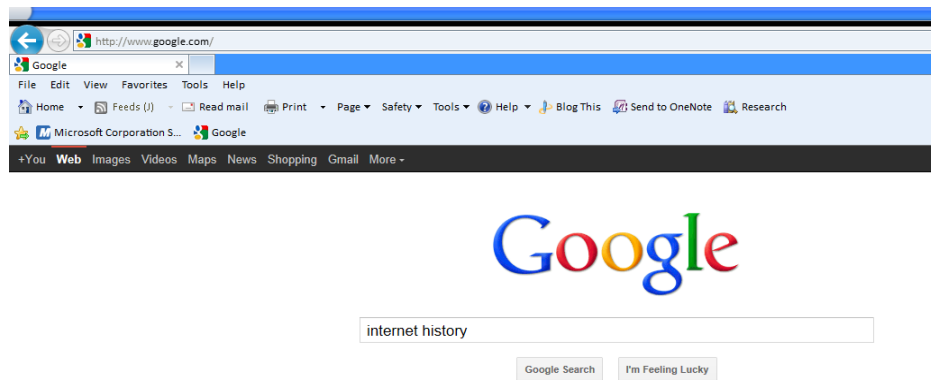


Figure 137: Performing a search for “internet history” in Google search engine

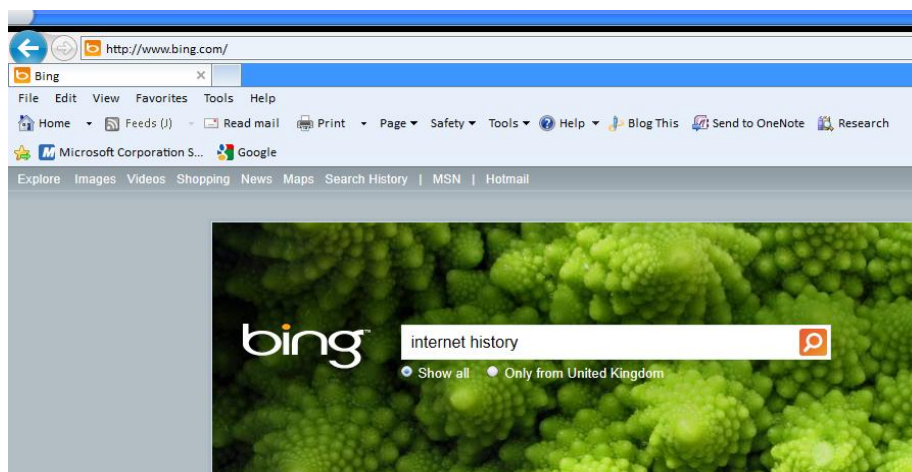


Figure 138: Performing a search for “internet history” in Bing search engine

As you type, recommendations regarding your search may appear but ignore them if they do not satisfy your current search and keep typing. When you press *enter* or *Search*, a list with results will appear on the screen. Look carefully in every given option in order to find the best that suits your search. You should be aware that most search engines put on the top of the list some results that are related with your search but they come first because their owners pay for *advertisement*. These advertisements usually appear in different colour background. Moreover, they are marked with the word **ad**, as shown in Figure 139, in order to avoid them (if so wished) and to focus on your search.

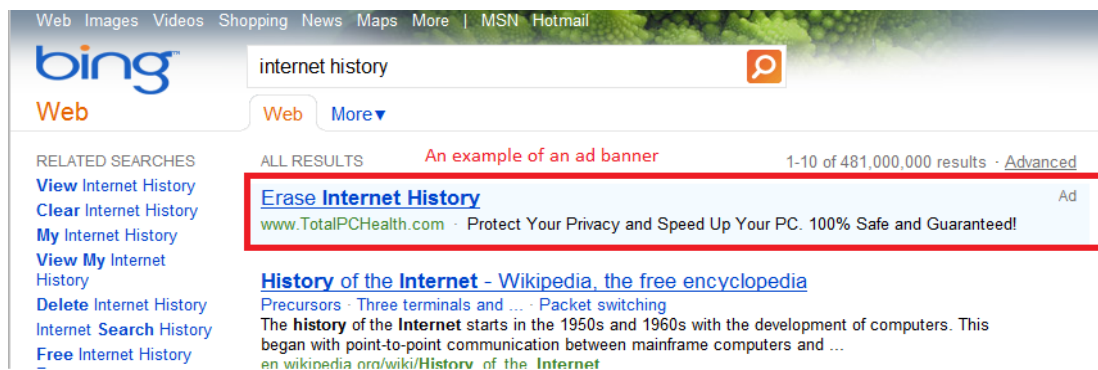


Figure 139: A page with search results, with a marked first entry as advertisement

Search engines offer the option to search specifically for images, videos, maps and many other extras depending on the specific engine. All you have to do is to select what you would like to search for from the list on the left (for Google) or from the list on the top (for Bing). Another way of searching the Internet is through the address bar (Figure 130, section 2). Most browsers use google.com or bing.com as a default search engine. You only have to type the words in the address bar (as shown in Figure 140) without any prefixes just like you would do on a dedicated search page as learnt earlier in the course.

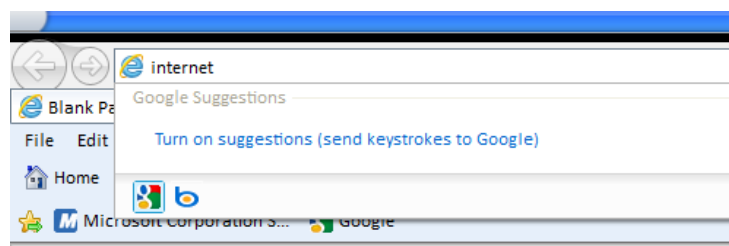


Figure 140: Selecting a default search engine for Internet Explorer 9 and performing a search quickly

Mozilla Firefox offers an additional search box next to the address bars which allows you to change the engine used for searching by clicking on the arrow pointing down, as shown in Figure 141.

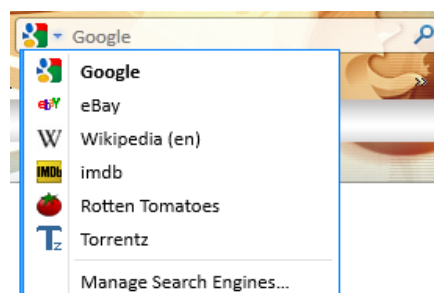


Figure 141: Selecting a default search engine in Mozilla Firefox

Search engines provide many options for customized search, using Boolean operators such as: implied "AND" (if several concatenated search terms separated by spaces are given, only pages containing all of them should be returned), exclusion ("-xx"), alternatives ("xx OR yy") and wildcard ("x * x").

For example, you may want to search for “(search engine – Google) OR (search software)”. Figure 142 shows the result of this search if we use the Google search engine. Looking at a specific search result, we identify the following parts:

1. A title of the result which acts as a hyperlink to the actual page of the result
2. The URL of the result
3. The day of publication and a couple of sentences extracted from the target page, that contain the terms for which we searched

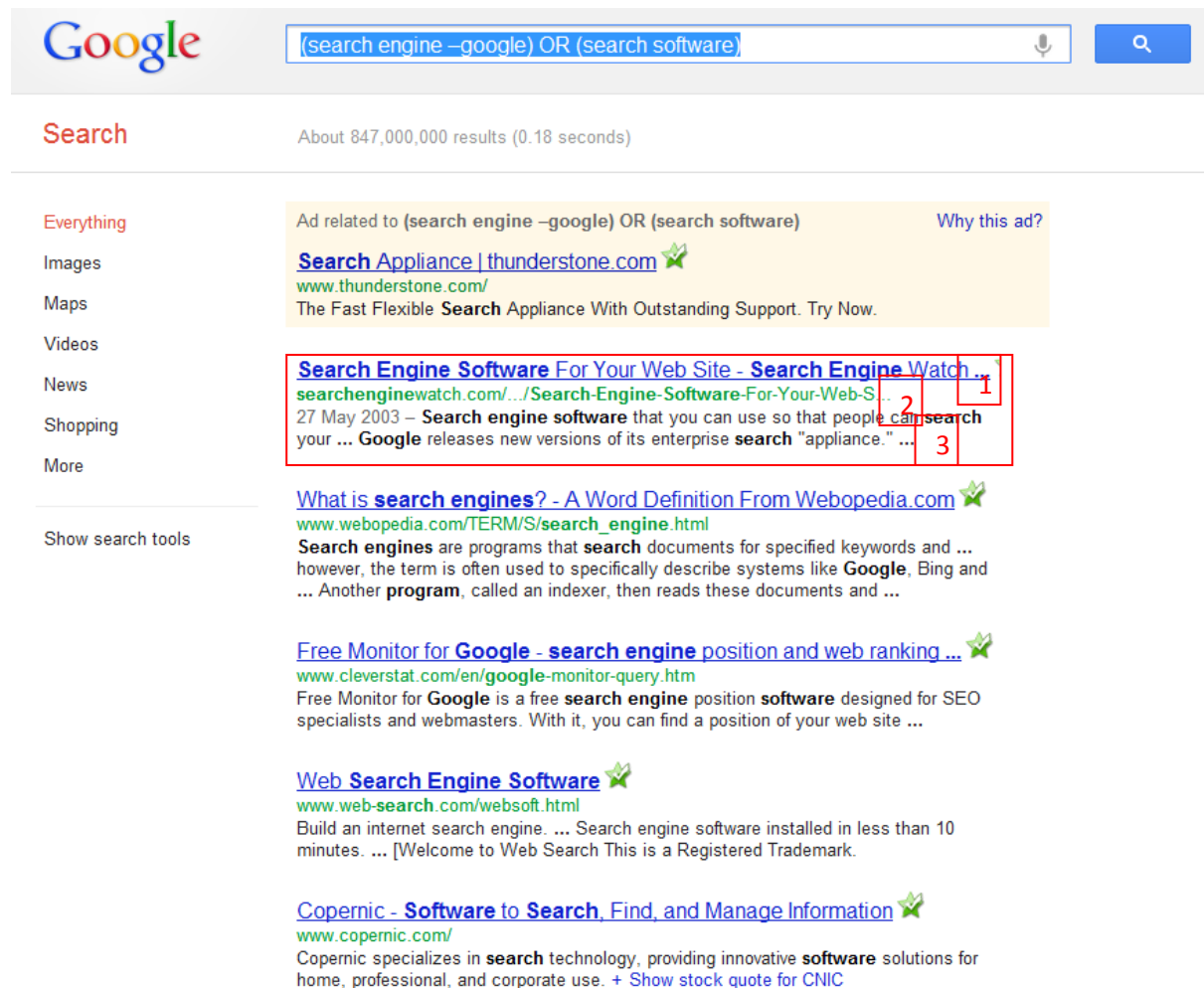


Figure 142: Results of a searching using Google and customized search operators

2.6.5 Printing a web page

In order to print a web page directly from internet web browser you must first make sure your printer is connected and turned on. Then you only have to choose the Print option from the command bar (Figure 130, section 9) and the printing should begin. If the browser does not have a shortcut for printing you can do so from the menu bar (Figure 130, section 9). Select File→Print and the menu of your printer should pop up to click on print. Figure 143 shows how to print a page using Mozilla Firefox.

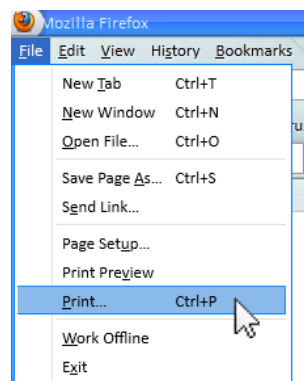


Figure 143: The Print option of a page in Mozilla Firefox

2.6.6 Filling a web form

With the rapid evolution of technology and the Internet, the need to interact with the owner (the individual or organization) of the website (*Note: A website is a set of web pages linked together including videos, images and sounds*), emerged. The most basic way to interact is by physically filling-in information in web forms, e.g. providing personal information to an organization or a University or sellers of goods (to be covered in next courses), etc.. In fact, a lot of organizations have their own websites where you can fill-in a form or a request just like the one that you would fill as hard copy at their offices. The only difference is that instead of using your pen to fill-in the form, you enter your details using the keyboard or any other mean of typing on the computer. Each form might ask for different details but the general structure is the same. Next to each detail field (label of the field) there is an action box (e.g. a text box) to enter the required detail. An example of a web form is shown in Figure 144.

Personal Details	
* Title	Please Select 
* Forename(s)	____
* 'Known as' Forename	____
* Family Name (surname)	____
Previous Surname	____
* Date of Birth (ddmmyyyy)	____
* Gender	Please Select 

Figure 144: An example of a Web page that shows a form requiring the user to enter data

You must be aware that fields marked with a * are usually treated as mandatory and must be completed in order for the form to be valid and the processing to continue. This is usually specifically mentioned at some location around the web form.

Also, some forms require you to enter a text from an image (called *captcha* and shown in Figure 145) as a countermeasure against automated software (called robots) that create fake accounts. In case the form provides full accessibility features, you can also select to *hear* the text on the image to enable you to type it. Moreover, in case it is not possible for you to read (or hear) the text properly, there is the option to load a new text-image.

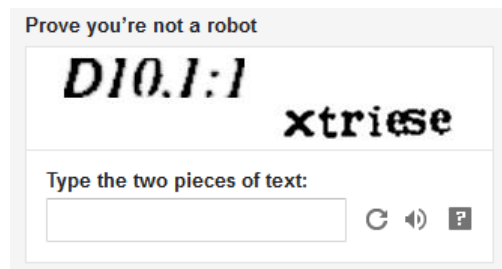


Figure 145: An example of a captcha that is used to avoid robots filling in the forms on the Web

When you are done filling the form, usually at the bottom there is an option to submit the form or proceed to a next step.

2.6.7 Downloading a file

While surfing the Internet you will come across cases where you must download a file from a website such as a document or a program's executable. Usually a hyperlink is used to pop up a window for saving the file, as shown in Figure 146.



Figure 146: A link to a file to download from a Web page

When you click on the link to download the file the browser asks if you want to open the file or if you want to save it on the computer, as shown in Figure 147.

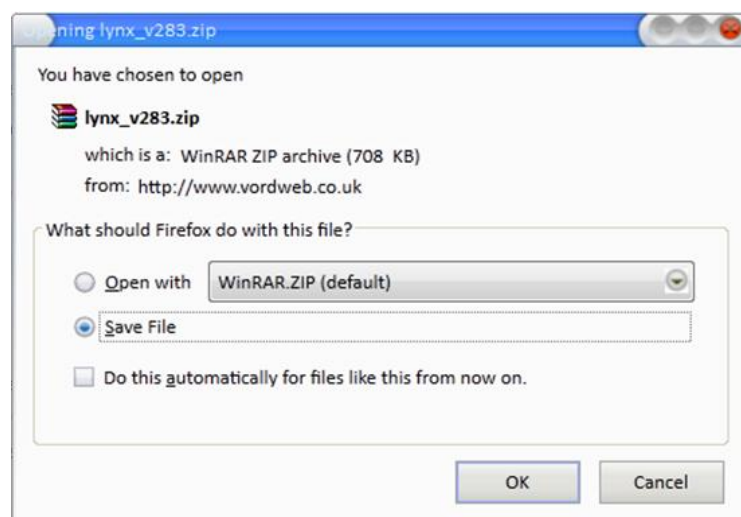


Figure 147: An example of a window that prompts you to open or save a file when you select to download it from Internet.

If you choose to open a file, the browser saves it in a temporary folder and deletes it after ending your browsing session. As a result, you will need to download it again if you would like to open the file another time, which means that you will need an Internet connection.

Instead you can choose to save the file on your hard disk (locally on your computer as shown in Figure 148) and make it available for offline use.

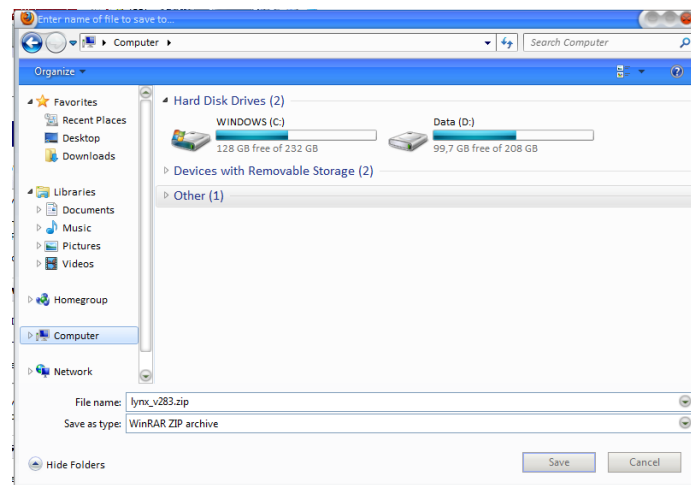


Figure 148: An example of a window that shows how you can save a file downloaded from the Internet, to your local file system

There is a possibility that your browser is configured to download the files by default to a pre-specified location on your computer. You can change this location or re-configure this option by following these steps in Internet Explorer 9 as shown also in Figure 149:

- i. From the Menu bar (Figure 130, section 9), select Tools → View downloads
- ii. From the download pop up screen select Options at the bottom left of the screen.

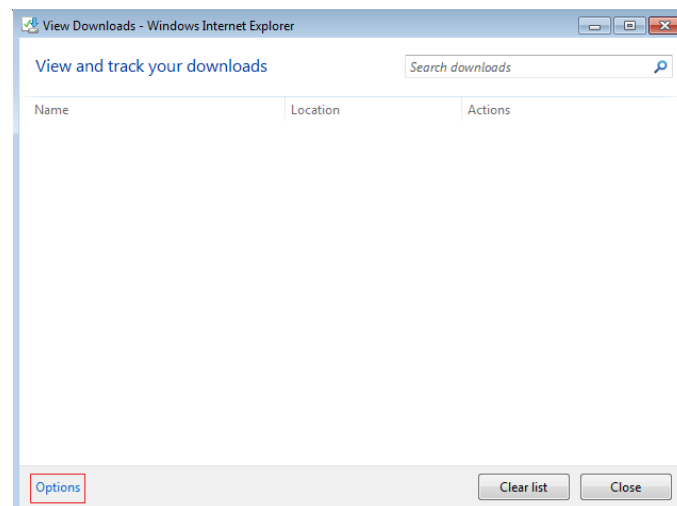


Figure 149: The window from where you can define the options for downloading files, in Mozilla Firefox

- iii. From the new screen select the “Browse” option.

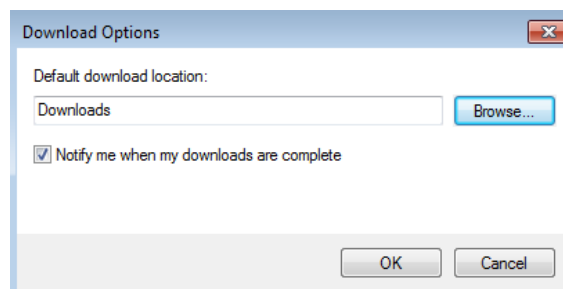


Figure 150: The window from where you can define the default download location for Internet files

- iv. Then navigate to the preferred location on the computer and click on the “Select Folder” option (Figure 150 and Figure 151).

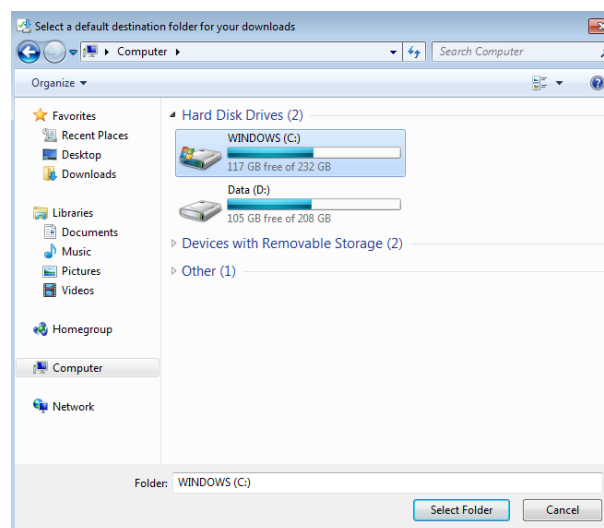


Figure 151: Selecting the default destination folder for the Internet downloads (Internet Explorer 9)

For Mozilla Firefox, select the Firefox logo on the right upper of the screen and then select Options→Options as shown in Figure 152 :

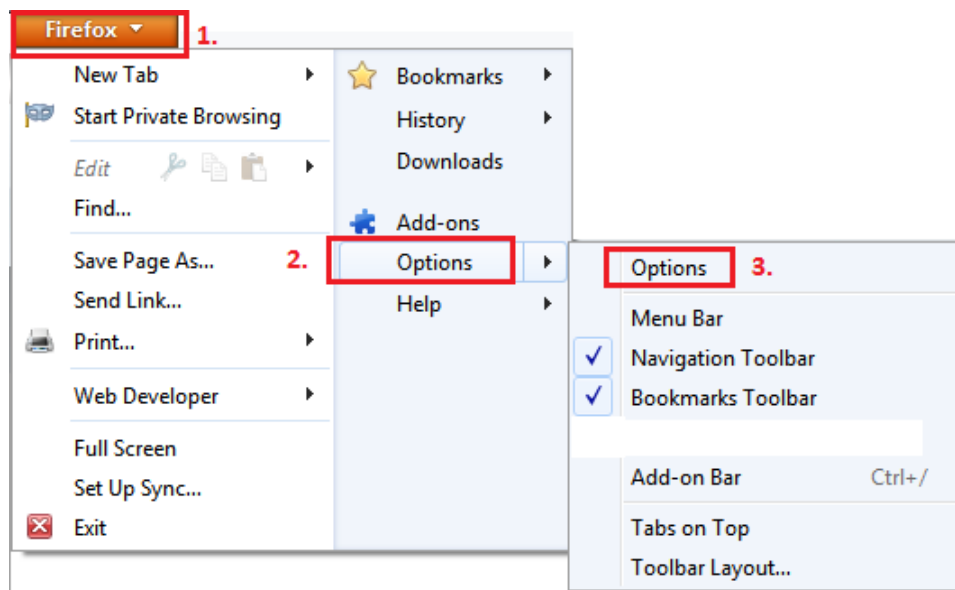


Figure 152: Detecting the options window to perform changes on the default saving location of Internet files

From the new pop up you can configure the browser to save downloads to a specific folder (Figure 153, Label no.1) or to always ask for the location (Figure 153, Label no.2) as shown in the next image.

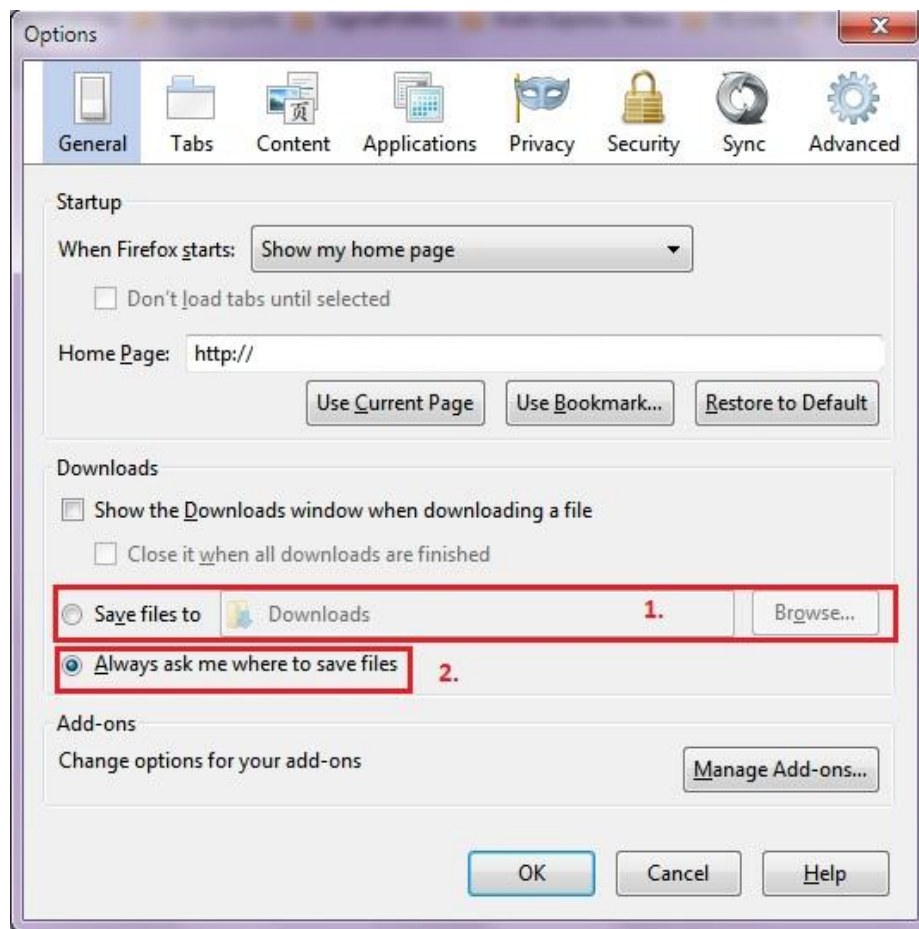


Figure 153: Selecting the default destination folder for the Internet downloads (Mozilla Firefox)

If you are using Google Chrome select the “screwdriver”  button and then click on “Options”. From the new window select the “Under the Hood” tab and at the section “Downloads” configure your settings. The steps are illustrated in Figure 154 below:

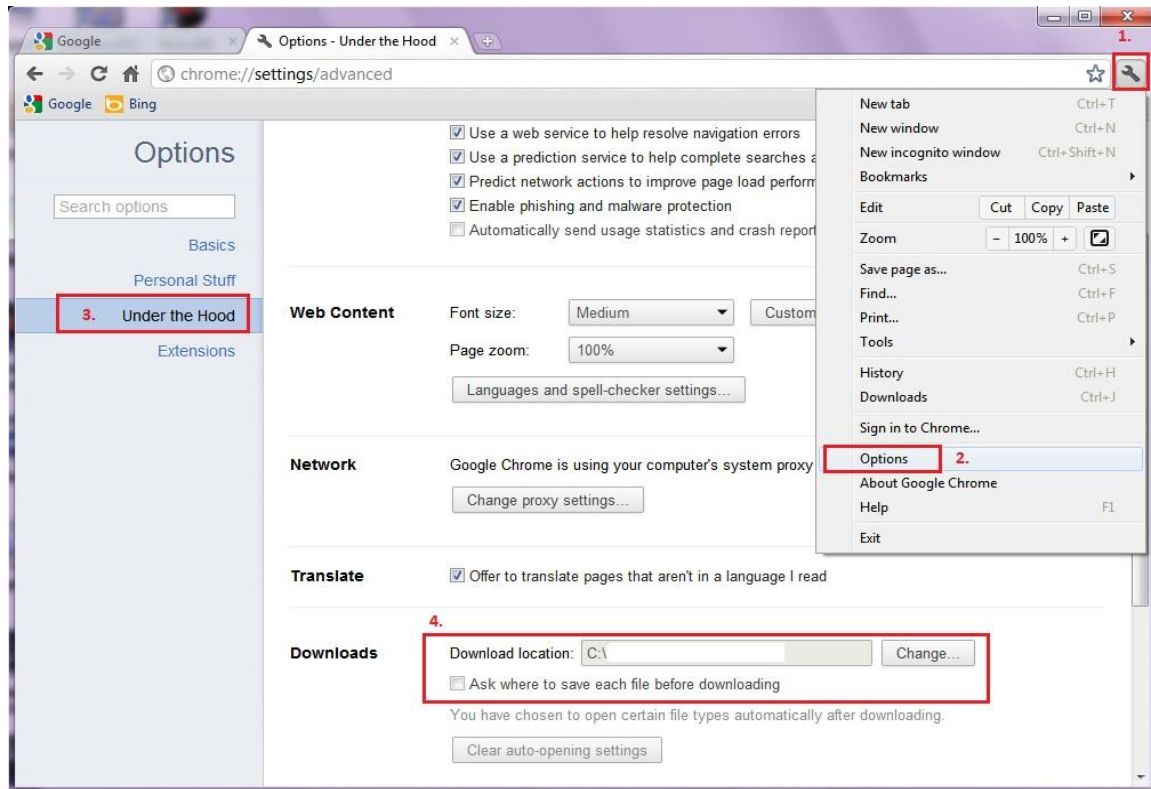


Figure 154: Selecting the default destination folder for the Internet downloads (Google Chrome)

2.6.8 Basics for other Web browsers

In this subsection *Mozilla Firefox* and *Google Chrome* Web browsers are introduced as the alternative solutions to the Internet Explorer Web browser. All three browsers offer identical features and it is up to the user to choose the one to use. In the figure below, the common features of Firefox and Chrome are illustrated and marked with the same number. Detailed explanation of each feature can be found in the previous subsections of this course.

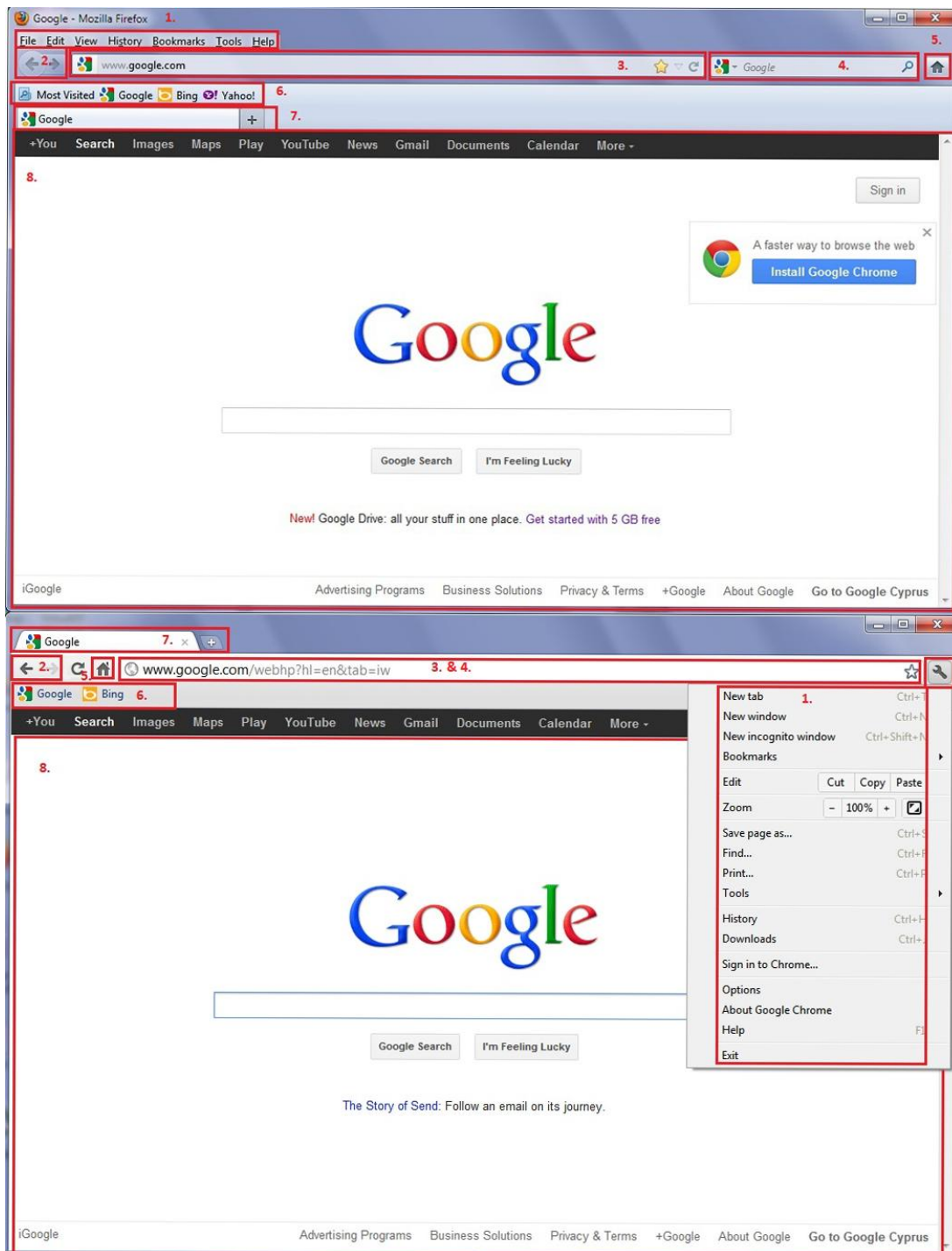


Figure 155: The different sections of a page of other Web browsers, comparing to Figure 130. Mozilla Firefox is on top and Google Chrome at the bottom

Afterwards, in order to get more familiar with the Web browsers a short explanation of each numbered feature is given, shown in Figure 155:

1. **Menu bar:** Here you can find your bookmarks and history but you can also create a new tab or print a page. Specifically, for Google Chrome, to access the menu bar you have to select the  button.

2. **Back and Forward:** These buttons as explained earlier, offer navigation through visited web pages.
3. **Address Bar:** This is the location where you type the web page you would like to visit. The reload button  is located in the address bar for Firefox but outside from it for Chrome.
4. **Search box:** Firefox offers a dedicated search box for performing a search although you can search directly by typing in the address bar. Chrome supports search only by typing in the address bar. To learn how to perform a search, check the subsection *Performing a search*.
5. **Home button:** This button will open the page that loads when you launch the browser. It is known as the homepage.
6. **Bookmarks toolbar:** Bookmarks are the equivalent feature of *Favourites* in the Internet Explorer. The bookmarks toolbar is a shortcut to access saved pages without going through the menu. To learn how to manage your favourites check the subsection *Using a Web Browser → Favourites feature*.
7. **Tabs:** In order to avoid multiple browsers' windows for every page that you visit, tabs are used to organise open web pages. To visit a new web page in a tab, select the "+" option and type the address in the new window.
8. **Web page content:** This is the main screen of the browsers. Here the web page that you visit will be displayed.

2.6.9 Social Networking sites

(More specific information can be found in the dedicated course 2.11.7)

In the last decade, social networks managed to become a part of many people's lives and their trend spreads extremely fast among people of all ages. Social networks can be used to keep in touch with friends, play games and many other things. There are also business related networks that allows users to meet new people and find job opportunities. Social networking is the grouping of people into specific groups, small communities that function as on line places where people generally socialize. **Error! Reference source not found.** provides a list with some of the most popular networks and a short description.

Table 12: A list of the most popular Social networking services on the Internet

Network	Logo	Description
Facebook (http://www.facebook.com)		A social network that allows you to add friends, chat live with them, track their updates, play games, upload photos, videos and interact using many other features. This is the most used social network to date. Accessibility information of Facebook can be found here: www.facebook.com/help/accessibil

		ity
Google+ (https://plus.google.com/)		It offers similar features like Facebook. You can organise your friends in lists called <i>circles</i> and search for content among your contacts. In order to use this social network you first need to create an account with Google service.
Netlog (http://www.netlog.com/)		A social network specifically targeted at the European youth demographic. Members are able to share videos, music and create their own website. Moreover it offers the option to show news from user's local area and from members of the same age as the user.
Twitter (http://twitter.com/)		This social network offers a unique feature that allows a user to send and read text-based posts of up to 140 characters, known as "tweets". Other users can subscribe to a user's tweets and "follow" his updates.
LinkedIn (http://www.linkedin.com/)		A business related social networking site that, among others, allows users to search for job opportunities and employers to list jobs and find candidates.
YouTube		This web site is used by users to upload their videos and to share them with other people.
Tube Majestyc http://tube.majestyc.net		Accessible Interface to YouTube
Easy Chirp http://www.easychirp.com		Accessible interface to Twitter, but not developed by the same team.

2.6.10 Web security

Using the World Wide Web is not without any danger. Critical and sensitive information might be transferred over the Internet, such as credit card details, personal information, etc. If this information is not protected, it would be exposed to anyone who attempts to steal it. As a result, the connection between a user and a page, when sensitive information is exchanged, should be encrypted and secured. This encryption is necessary when you are asked to enter personal details, for example passwords and credit card numbers, as it ensures that when they will be transferred though the Internet no one will understand its content except the correct receiver.

A safe way to encrypt personal data and information and prove that the user has a valid security certificate is concrete URL with the `https://` prefix. The website name must use this prefix. If it does, a lock symbol will appear in the address bar to indicate that your connection is safe. When you click the lock symbol, more encrypted information is revealed (Figure 156).

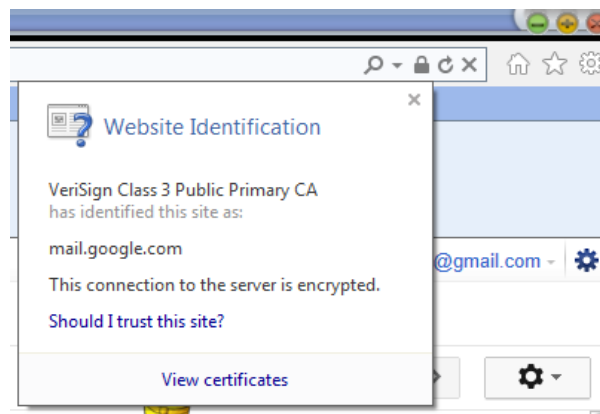


Figure 156: The popup window that appears after clicking on the lock icon on the address bar of a Web browser

Some browsers like Mozilla Firefox instead of showing a lock symbol, highlight the left part of the address bar as shown in Figure 157.

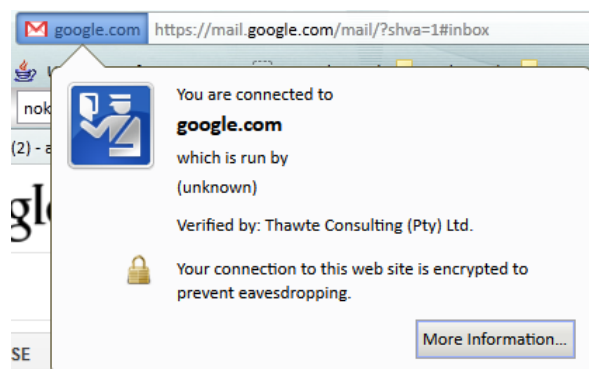


Figure 157: The popup window that appears after clicking on the highlighted left part of the address bar of Mozilla Firefox

2.6.11 Safe online search

When searching for information on the Internet, a user may come across irrelevant but offensive content. Fortunately, search engines are aware of this and have taken measures to protect their users by introducing the *Safe Search* option. This option acts like a smart filter that checks the results before the users access them and blocks any offensive content from reaching the final set of results. Usually this feature is enabled by default but in the following images we illustrate how to enable/disable it.

For Google.com (Figure 158) you will need to click on the gear symbol on the top right and select “search preferences”. Then depending on how much you want your results to be filtered, move the slider to the correct position and **click save** at the bottom of the page.

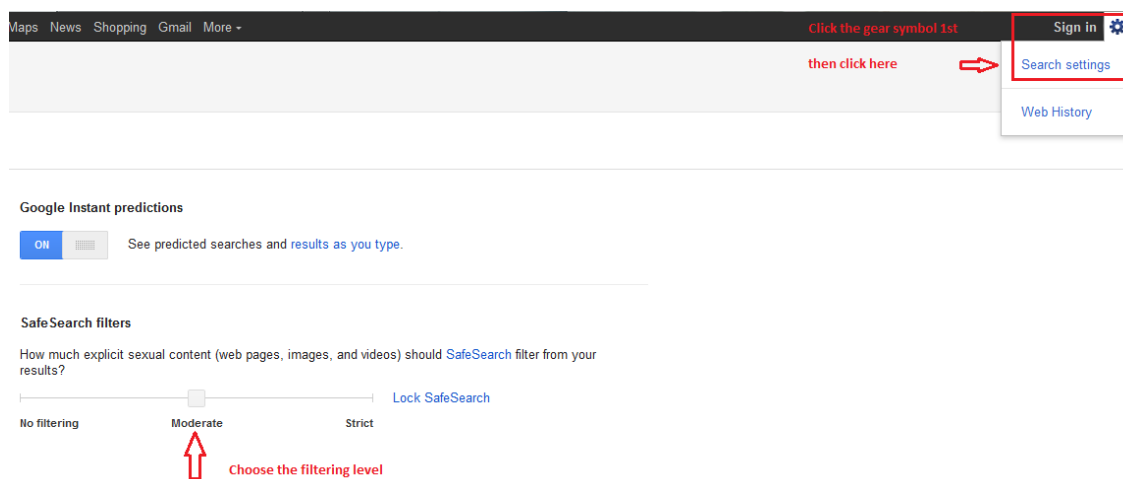


Figure 158: The place from where you can define the search settings in google.com

For Bing the process is quite similar (Figure 159):

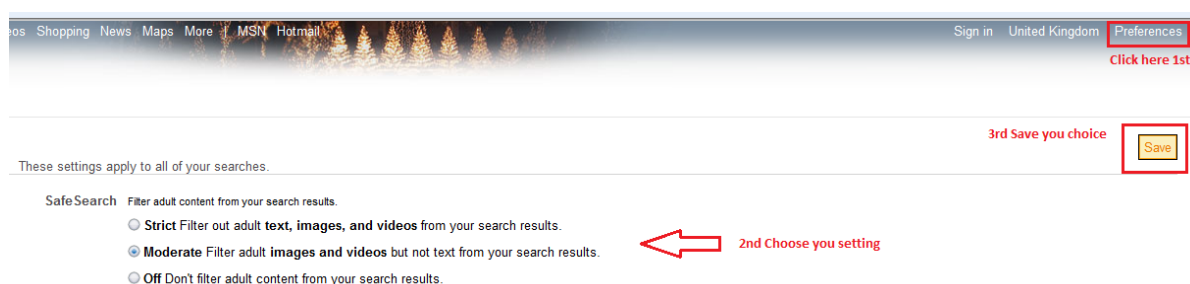


Figure 159: The place from where you can define the search settings in bing.com

In an effort to protect their citizens from Internet dangers, many countries' Governments have established dedicated Internet Centers to promote the safer use of the Internet. You may find the Web site to the respective Center in your country, in Table 18. These Centers, through their Web sites provide the means for you to report any Illegal or annoying content that you might come across on the Internet simply by clicking on links in from their first page in their Web site and filling in forms. In addition, helplines are provided where you can ask for help (through chat, email, phone) about problems that you may face while using the Internet.

2.6.12 Malicious software and computer viruses

Another issue a web user should be aware of, are viruses and spyware. A virus is a harmful piece of software that usually causes malfunctions of computers, reduction in performance and possible loss of user's data. Spywares are files that software tools or websites can upload on a computer in order to track the user's habits to show him related advertisements or save the keys pressed on the keyboard in order to find passwords. All the aforementioned, together with other types of harmful files and software tools are called *malwares* and they act silently thus making it very difficult for a user to notice their existence.

One way to protect your computer from those risks is to install an antivirus product (covered in more detail in the course in section 3.6). Keeping your operating system up to date is another necessary measure. As a user you can act in several ways to reduce the risk of infection. First do not visit websites that you are not sure of concerning their reliability. Next, avoid clicking on pop up advertisements that might ask you for personal information. Also, never download files from websites whose purpose you do not know. Always look for the secure connection symbol before entering sensitive information like passwords or credit card details. If the website does not use encrypted connection and you are not sure, better not to enter any details to avoid unwanted access to them.

For the same reason, you should be careful when you share personal pictures. If you upload pictures to a social network or a dedicated picture-hosting site, you can always limit access to them if you do not want unknown persons to view them. This will be further discussed in the course in the course *3.6-Safety and Security*, as well.

Since users on the Internet interact with each other without eye contact, it is very easy for someone to pretend being someone else. This might happen by email (using a fake email address), but with the rise of social networking the number of fake identities increased sharply. When unknowns try to contact you by emails or by friend requests you must be sure if you know them before you reply. For this reason, you must check their details very carefully in order to find out if they are real. Unfortunately, not all Internet users have good intentions or manners. Some of them try to offend other users or to upset them. This is like bullying others in real life but it is done through the Internet thus called *cyber bullying*. One way to reduce the chance of being a victim of those people is to avoid opening emails and messages from unknowns.

Last but not least, you must be careful when you copy information or images from the Internet as they might be copyright protected. A copyrighted document or image cannot be reproduced without the permission of the real owner or creator. Some owners allow reproduction of their documents or images as long as their name is also mentioned. You should check the specific item's rules usually found at the bottom of the page for more information. A website or an image usually carries the © symbol followed by the year of the first publication of the work and the name of the copyright holder. A useful document to learn more about copyrights can be found here <http://www.copyright.gov/circs/circ1.pdf>.

Also, Figure 160 shows an example found at the bottom of Google web pages,

©2011 Google - [Terms & Privacy](#)

Figure 160: The text showing the copyright information for a Web page, usually found at the bottom

and Figure 161 shows a copyrighted image.

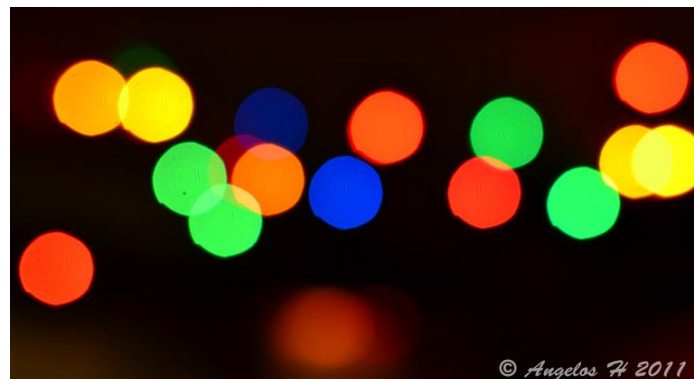


Figure 161: An example of an image with a copyright

2.7 Email and Security

The Internet changed the way people communicate. In the older days people used to tell their news or send greeting cards to friends by mail. Nowadays traditional mail lost ground to the electronic mail, called e-mail. In a generally electronic world e-mail is critical mostly to any business being competitive. However, as e-mails become more prevalent in the market, the importance of email security becomes more significant. In the following subsections we explain how to send and receive emails and files in an email (called attachments). Finally, we explain the risks involved with this way of communication and how to avoid them.

2.7.1 Using E-mail

Just like a normal address, you can also have an e-mail which is an electronic address with a unique identification among the million addresses on the Internet. There are many websites (providers) that offer free email addresses (can be thought of as an electronic version of the traditional mail box), known as email accounts (e.g. gmail.com, hotmail.com). Universities and companies also offer email accounts to their students and employees respectively.

An email address looks like in Figure 162 below and consists of three parts:

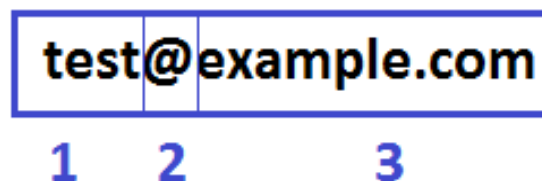


Figure 162: An example of an email address

1. Username: Usually the user chooses this and it could be a word or a name, as long as it is unique and has never been used at that domain (see 3 below).
2. At sign: The “@” symbol indicates at which domain the name is registered.
3. Domain name: This is the name of the email account provider. The “.com” suffix has the same meaning as explained in Section 2.6 and can vary for the same reasons.

The most common publicly available email accounts (and providers, respectively) are given in **Error! Reference source not found.**:

Table 13: The most common publicly available email accounts’ providers

Provider’s website	Domain
www.gmail.com	@gmail.com
www.hotmail.com	@hotmail.com or @live.com
http://mail.yahoo.com	@yahoo.com
http://mail.aol.co.uk	@aim.com

2.7.2 Creating an email account

If you do not have an email account, you have to follow an easy and non time consuming (only some minutes required) process in order to create one. The procedure that has been adopted by most of the providers and mentioned above is more or less the same, with minor differences.

In order to explain the initial steps we selected the “www.gmail.com” provider as the example.

Firstly you have to visit the website of the provider and at the login screen locate the “Sign up” or “Create new account” or any other similar option, as shown in Figure 163 for gmail.com.

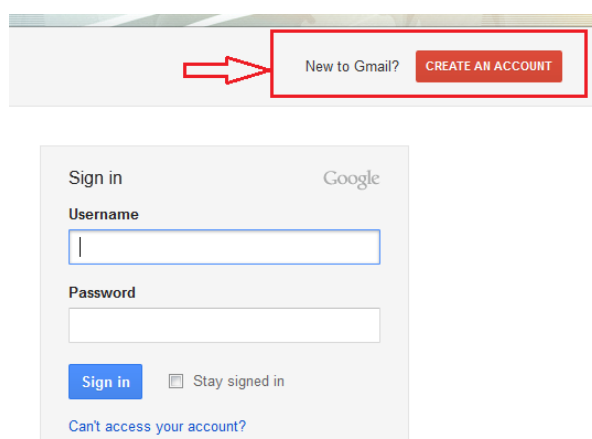


Figure 163: The place from where you can create an account in gmail.com

Then you will have to fill in some details (as shown in Figure 164) including the desired username. If the username is already in use, the website will ask you to choose another one. You must also set a

password used for logging in to your personal account (mail box). This password should be difficult for other persons to know, so do not use your birthday or other obvious ones.

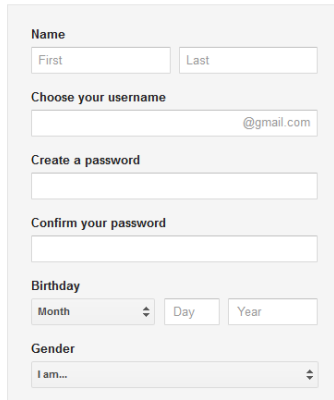
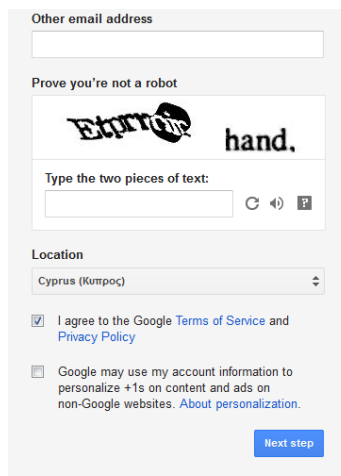
A registration form for creating an email account. It includes fields for Name (First and Last), Choose your username (with a @gmail.com suffix), Create a password, Confirm your password, Birthday (Month, Day, Year), and Gender (I am... dropdown).

Figure 164: Form to fill in your details and create an email account

You can add an extra email address but this is not obligatory. Also, as shown in Figure 165, you must accept the terms of service in order to proceed and you must read carefully any other options before selecting them.

A form for accepting terms of service. It includes a field for 'Other email address', a CAPTCHA challenge with the text 'Eggs for hand.' and 'Type the two pieces of text:', a 'Location' dropdown menu set to 'Cyprus (Κυπρος)', and two checkboxes: 'I agree to the Google Terms of Service and Privacy Policy' (checked) and 'Google may use my account information to personalize +1s on content and ads on non-Google websites. About personalization.' (unchecked). A 'Next step' button is at the bottom right.

[Learn more](#) about why we ask for this information.

Figure 165: Accepting the terms of service when creating an email account, in gmail.com

Finally, the account will be created (Figure 166) and you will be able to start using it immediately.

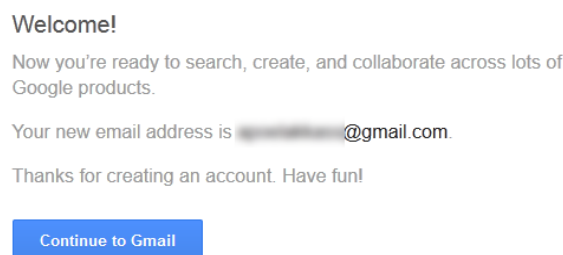


Figure 166: Page shown immediately after successfully creating an email account with gmail.com

2.7.3 Email software and Internet access

After you have created your email account, you can gain access to it by two different ways. The first is to use a dedicated email software client and the second is to use the provider's website.

2.7.3.1 *Dedicated email software client*

Just like a web browser is used for web browsing (Section 2, Web browsing and security), email software is designed to offer full control over your email account. Two of the most popular email software clients are given in **Error! Reference source not found.:**

Table 14: List of the two most popular email software clients

Name	Icon
Microsoft Office Outlook	
Mozilla Thunderbird	

These programs can be launched exactly the same way as a web browser (Section 2, Web browsing and security). We illustrate in the next paragraphs how to configure these email software clients for sending and receiving emails. The procedure is again more or less the same, therefore, we choose the Mozilla Thunderbird tool as example, which can be downloaded for free at www.getthunderbird.com.

2.7.3.2 *Adding an email account in the program*

When you have your email account, you must configure the email software client to be able to access it. This is known as adding a new account and can be done by two ways.

The first one is by selecting the "Create new account" from the welcome screen, as shown in Figure 167:

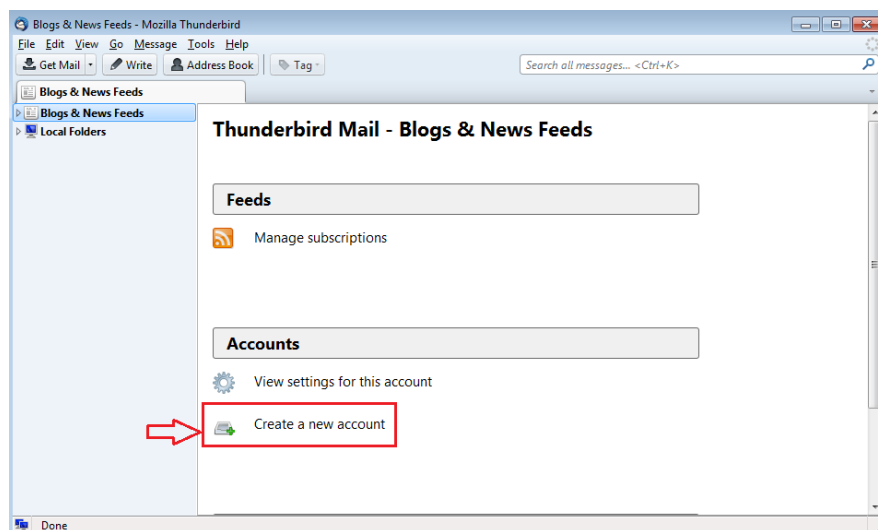


Figure 167: Option to create a new account in the Welcome screen of Thunderbird

The second one is by selecting Tools→Account Settings from the menu bar (Figure 168):

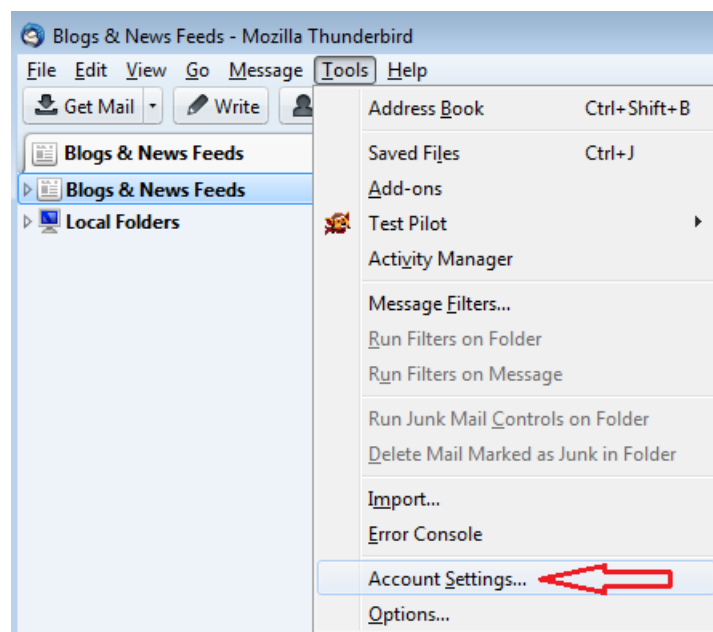


Figure 168: Defining the new account's settings in Thunderbird

Then from the pop up screen select “Account options” and “Add Mail account” as shown below in Figure 169:

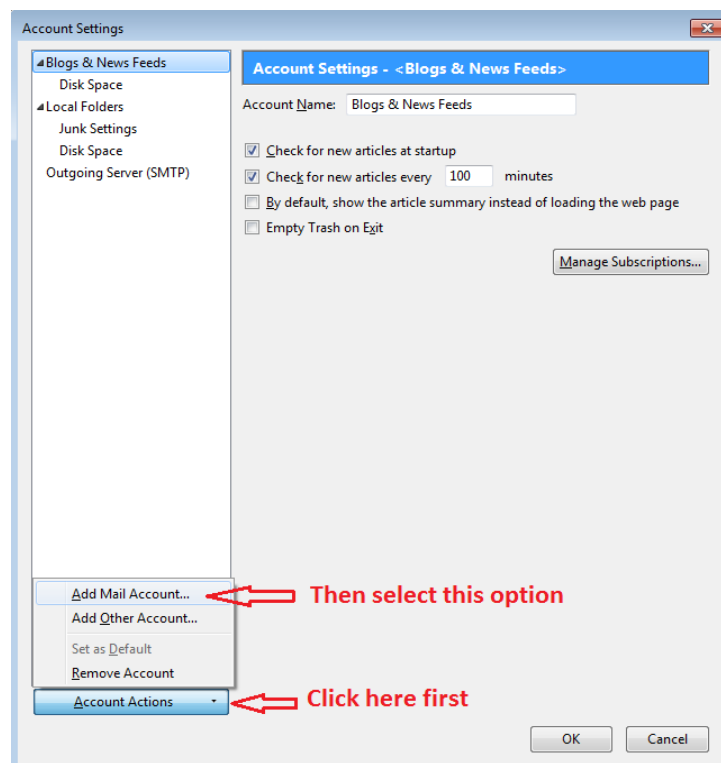


Figure 169: The follow up actions to add mail account Thunderbird

You may follow one of the two ways since both will pop up the screen shown in Figure 170:

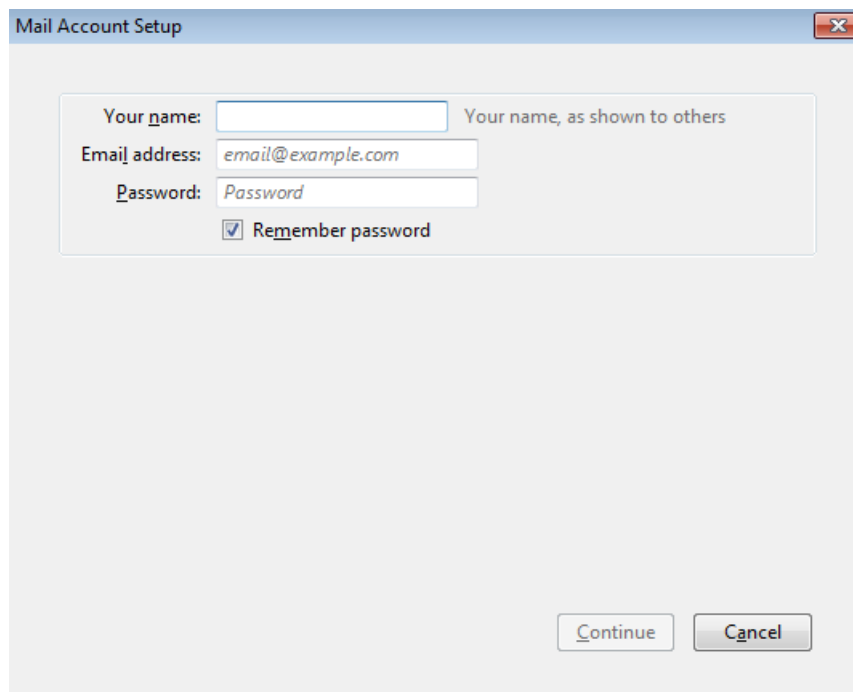


Figure 170: Screen that appears after selecting to add a new email account in Thunderbird

Here you must fill in your name (this is how recipients will see who sent them the email), your email address and your password. *A very important note here is to unclick the “Remember my password” option if you are using a public computer (more on this in the Securities issues subsection).*

When you fill in the required information and click the “Continue” button, more settings will be revealed at the bottom of the screen:

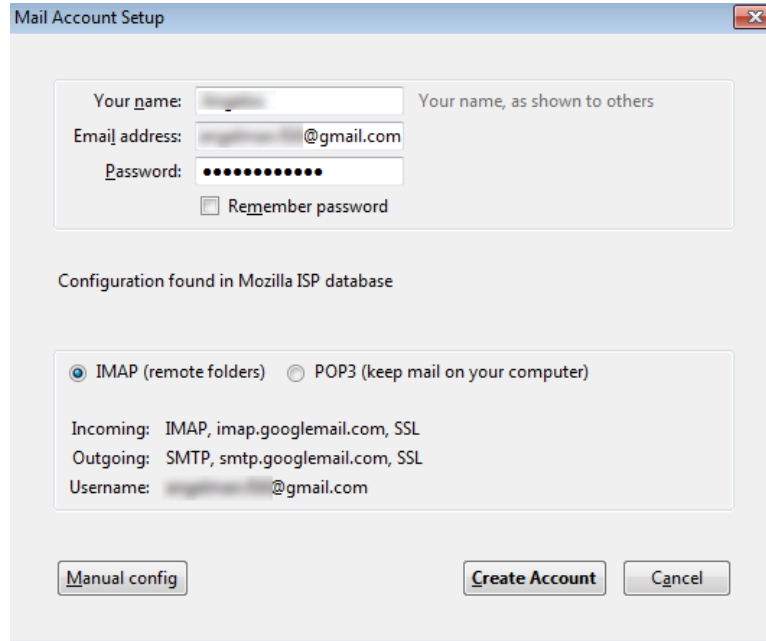


Figure 171: Final form to select an Internet standard by which to access your email account in Thunderbird

You now have to select one of the two Internet standards for retrieving emails from your account, IMAP or POP3 (Figure 171). The IMAP protocol offers access to your emails without downloading their contents on the computer *currently* being used. This is useful when you are not the owner of the computer or when you are using a public computer. On the other hand, POP3 protocol downloads the emails and their contents and makes them available for offline use (that is, even when you do not have access to the Internet). When you have decided on the protocol, select the “Create Account” button. Now and every time you launch the application the main screen will appear (Figure 172).

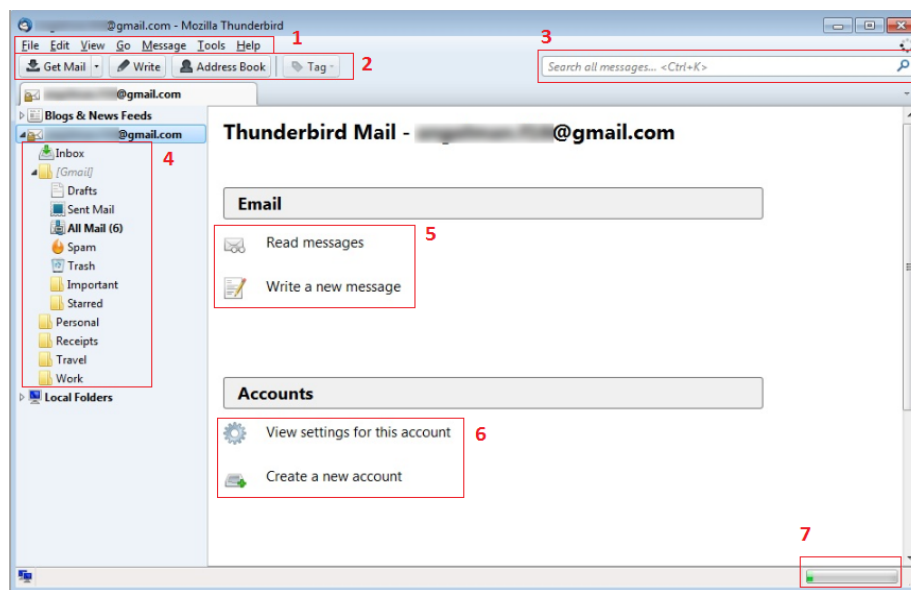


Figure 172: Main window of Thunderbird after creating an account, with numbered sections

The numbered areas are:

1. Tool menu bar where you can find sub-menus with all allowed actions on the application
2. A sub-menu bar where you can see specific functionalities for quick access
3. Search engine to find specific messages in your email folders
4. The tree with all folders (default and created by you) in which your messages are classified and stored
5. Access to the two most basic functionalities, to read and write messages
6. Quick access to the settings functionality for the email accounts setup in the application

2.7.3.3 Reading emails

To check your email account for new messages you must select the “Get mail” option from the Mail toolbar (Figure 172, section 2) and wait for the bar at the bottom right (Figure 172, section 7) to become inactive (the green moving rectangle  should disappear). This indicates that the procedure for downloading your new emails has been completed. You can also get your new messages by selecting the “Get new messages” option (Figure 172, section 5). If you need to enter your password in order to authenticate your connection (log in) the client will ask you to do so by using a pop up screen, as shown in Figure 173.

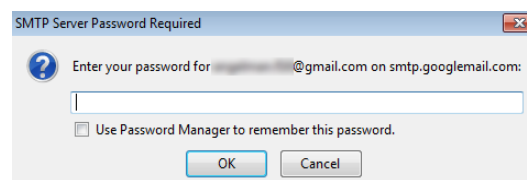


Figure 173: Window in which you provide your password in order to gain access to your email account from Thunderbird

All of your emails, either read or unread, are placed in the *Inbox* folder by default. To view this folder, select the “Inbox” label from the list on the left, as in Figure 172, section 4. If you single click on a

message's title, its content will appear in the window at the bottom half of the screen, but if you double click the email will open in a new tab.

Some emails may contain files, such as documents or images, known as attachments. When you receive an email with an attachment a clip symbol  will appear at the left or at the right of the subject (the title of the email). If you open the email, at the bottom of the screen you will find details regarding the files attached and options to manage them (Figure 174):



Figure 174: The attachments and the options to manage them, at the bottom of an email message in Thunderbird

At the left side the number of the files will be displayed. For one attachment only, you will be able to see its name and file type. At the right of the display there is an option to save the files. When you click on this button a list of options appears in order to manage the attachment (Table 15):

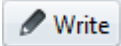
Table 15: Options available to manage an attachment in an email in Thunderbird

Option	Description
Open	Opens the file without the option to save it on the computer
Save As	Asks for a place to save the file to be available on the user's computer
Detach	Saves the file like the Save As option but removes it from the email
Delete	Deletes the attachment, leaving the email without any files attached.

2.7.3.4 Sending emails

Sending an email can be done either by creating a new one (known as composing a message), by replying to another email or by sending a copy of the received email (known as forwarding).

i. Creating a new email

To create a new email simply click the  button from the main window (Figure 172, section 2) or from the main menu (Figure 172, section 1) and select File→New→Message as shown in Figure 175:

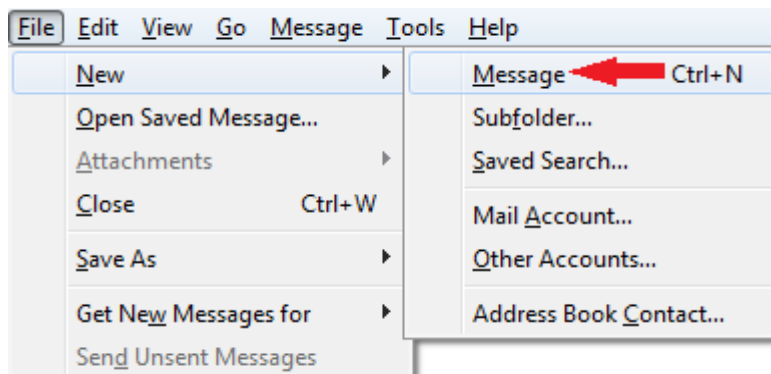


Figure 175: Selections on the main page of Thunderbird, to create a new email message

You can also create a new message by selecting the “Write a new message” option from the main window (Figure 172, section 5).

Either way, the new screen for composing a new message will be the same and looks like in Figure 176 below:

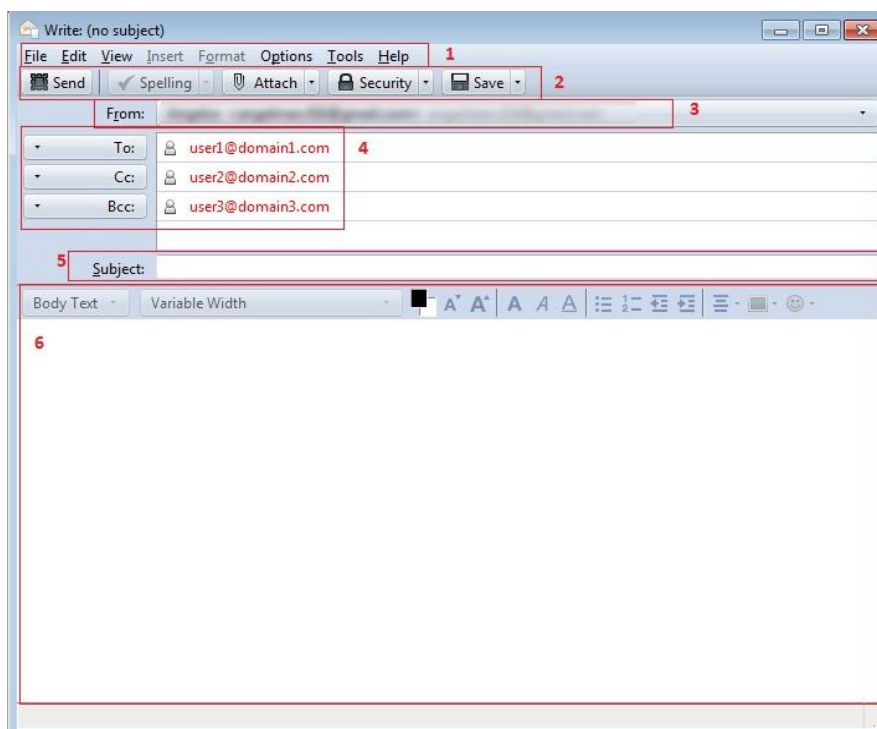


Figure 176: Screen for composing/creating a new message in Thunderbird, with numbered sections/parts

To write a message, you must first decide who will receive this email. The email address of the receiver must be filled in the To: field like the example given (Figure 176, section 4). If you want to send the email to more than one receiver, separate their emails with a comma.

As you may have noticed there are other fields available as well and they can be customized by clicking on their name (Figure 177):

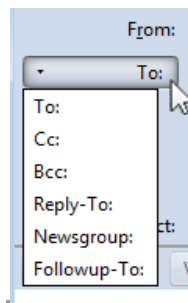


Figure 177: The selection box to define the type of the recipient *To*, *CC*, *BCC*, etc, in Thunderbird

The **Cc:** (stands for Carbon Copy-Figure 176, section 4) is another way of sending an email to secondary recipients. You can fill-in as many email addresses as you like but always separated with commas.

One important note regarding these two field types is that all the recipients are aware of each other. That is, user1 will know that user2 also received the email and vice versa (Figure 176, section 4). There are cases when you might want to keep recipients' addresses hidden from each other. In that case you must select the **Bcc:** option (stands for Blind Carbon Copy). With this option, all the addresses in the Bcc field are hidden from each other and from the primary (To) and secondary (Cc) recipients. As a result user3 will be aware of user1 and user 2 but these two will not see user's 3 address.

Your sending address and name will appear to others the exact way as shown in the **From:** field (Figure 176, section 3) and they are the same as configured earlier in the account setup. You can access these settings by selecting the "View settings for this account" option (Figure 172, section 6).

After deciding the recipients, the next step is to find a title (subject) for your email (Figure 176, section 5). You may leave this field blank but it is not recommended as some email providers might consider it fake and block it, that is, it will not be delivered.

Then, the next step is to write the actual content of the email. You can write as many words as you like in the space given (Figure 176, section 6) and there are options for formatting the text, just like in a word processing tool. If you would like to save your email and continue later you can do so by selecting the **Save** button (Figure 176, section 2). This will save the email in the Drafts folder (Figure 172, section 4) and you will be able to continue writing it at any time later. An alternative way to save a message is from the menu bar (Figure 176, section 1). Select File→Save and the email will be saved in the drafts folder (Figure 178).

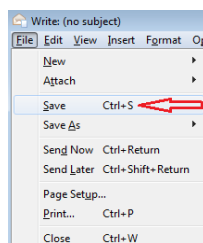


Figure 178: Showing the selections required in order to save an email in the Drafts folder, in Thunderbird

Just like receiving files as attachments to emails, you can send files as attachments as well. Depending on what email provider you use there is a maximum size to the files you can attach to an email. The email providers mentioned earlier in this text support attachments up to 25MB in size.

However, the people you are sending the files to might have smaller limits. It is therefore recommended to attach files of maximum 9MB in size. To attach the files, click the  button and using the new window, navigate to the location of the files on your computer. This can be done by the main menu too (Figure 176, section 1), by selecting File→Attach→File(s) (Figure 179).

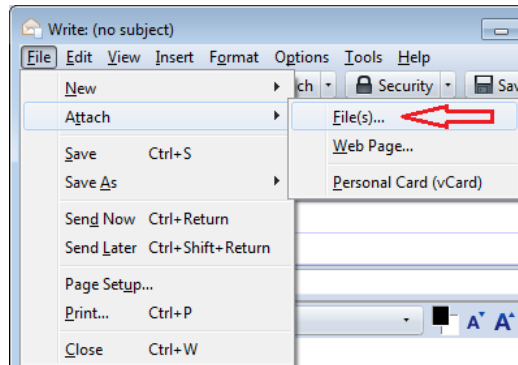
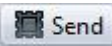


Figure 179: Selection required in order to attach a file in an email message, in Thunderbird

To attach multiple files at once, hold down the “Ctrl” button on the keyboard and single click on the files, once at a time.

The final step is to send the email. To send it, simply select the  button (Figure 176, section 2) or use the main menu by selecting File→Send Now (Figure 180).

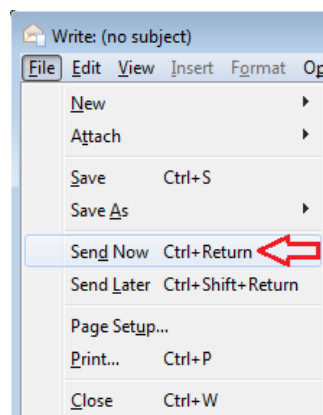


Figure 180: Selection from the File menu to send the created email message, in Thunderbird

When you click on the send button, a pop-up window (Figure 181) indicating the sending progress will appear:

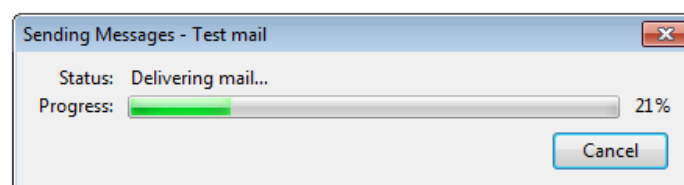


Figure 181: Popup window indicating the sending progress of an email

Once the bar reaches 100%, the program will copy the sent email to the “Sent Mails” folder (Figure 172, section 4), Figure 182.

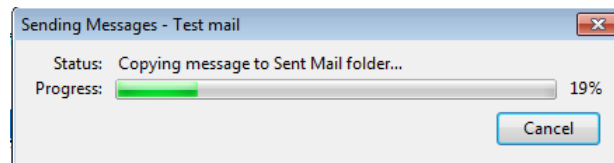


Figure 182: Window that shows the process of copying the sent email to the Sent Mail folder

All the emails that you send are stored in this folder and you can access them anytime, until you permanently delete them from that folder.

You *must not* exit the program or disconnect from the internet until the progress bar reaches 100%. When everything is completed the “Write” window (Figure 176) will close and you will be transferred to the main window.

ii. Replying to an email

To **reply** to an email you must select the “Reply” button found at the top of the email content (when opened in a new tab), as shown in Figure 183.

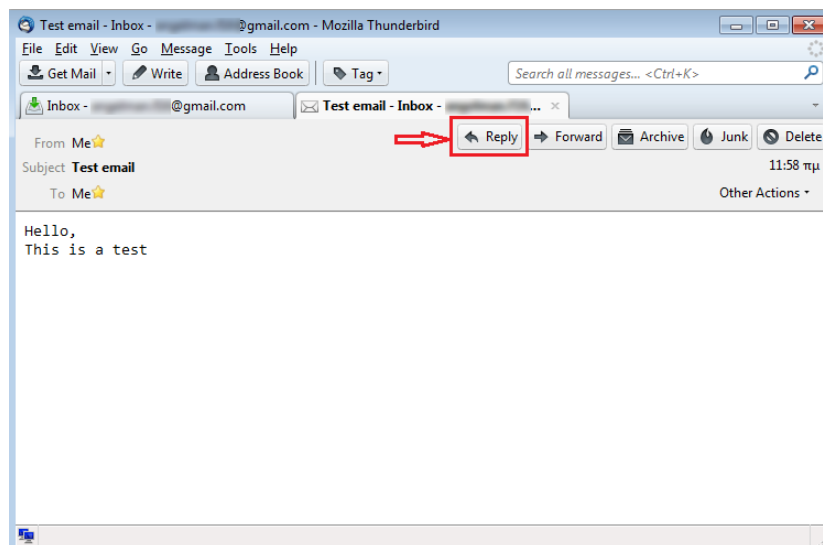


Figure 183: An opened message with a mark on the Reply option

You can also reply by selecting the reply button on the main screen of the program, without opening the email in a new tab, as shown in Figure 184 below:

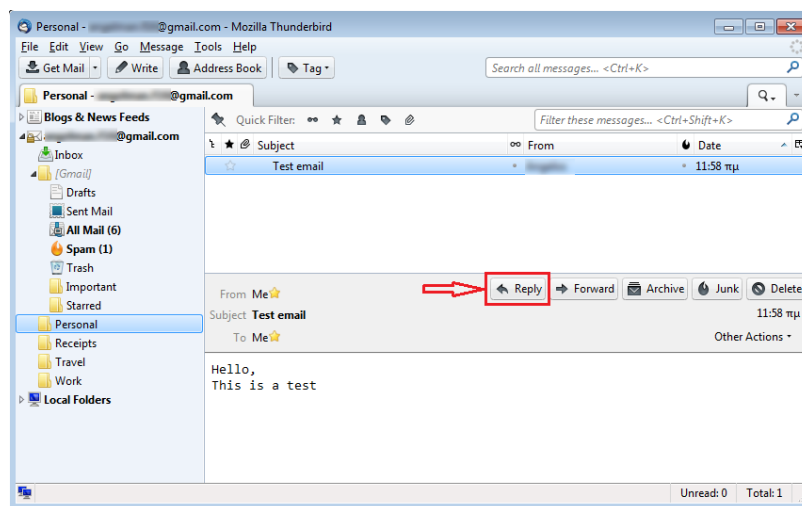


Figure 184: Marking the Reply option in the main screen of Thunderbird where emails are listed

Another way of replying is to navigate from the menu bar (Figure 172, section 1) to the “Reply” option by selecting Message→Reply (Figure 185):

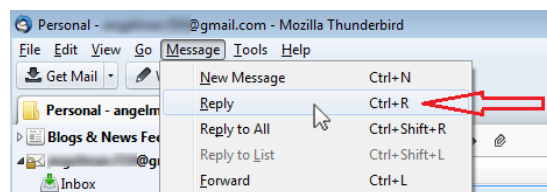


Figure 185: Finding the Reply option in the Message menu on the top menu bar

In some cases the sender of the email, might send the same email to other users too. If you would like to reply to the sender but also to the other recipients as well, you can do so by selecting the “Reply to All” option (Figure 186).

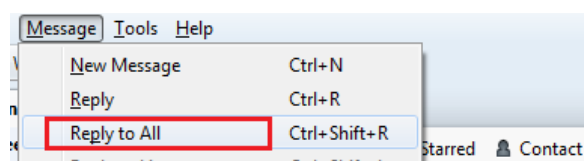


Figure 186: Finding the Reply to All option from the Message menu in the top menu bar

Before using this function you will have to be sure that the email is of common interest and will not distract other recipients.

When you use the Reply (or Reply to All) function, your email subject will begin with the prefix “Re:” to indicate that this is a reply to a previous email, as shown in Figure 187.

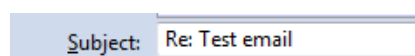


Figure 187: The subject of the message with the Re: prefix, when replying

The remaining procedure is identical to the one described in sending a new email.

iii. Forwarding an email

When you want to send a received email to someone else, instead of writing it again you can use the *Forward* function. This function includes the original message but allows the user to add extra content to the email, such as text, images or other files. To forward a message select the “Forward” button when viewing an email in the main window (Figure 188):

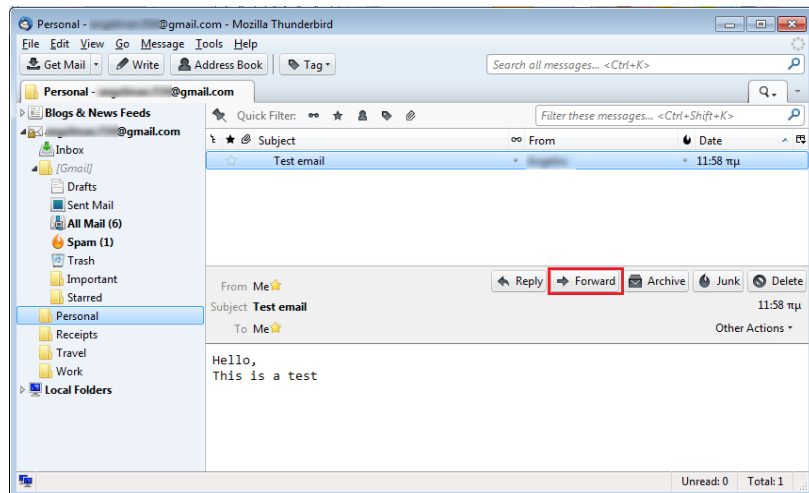


Figure 188: Marking of the Forward option in the main window of listing emails in Thunderbird

You can forward an email when opened in a new tab too (Figure 189):

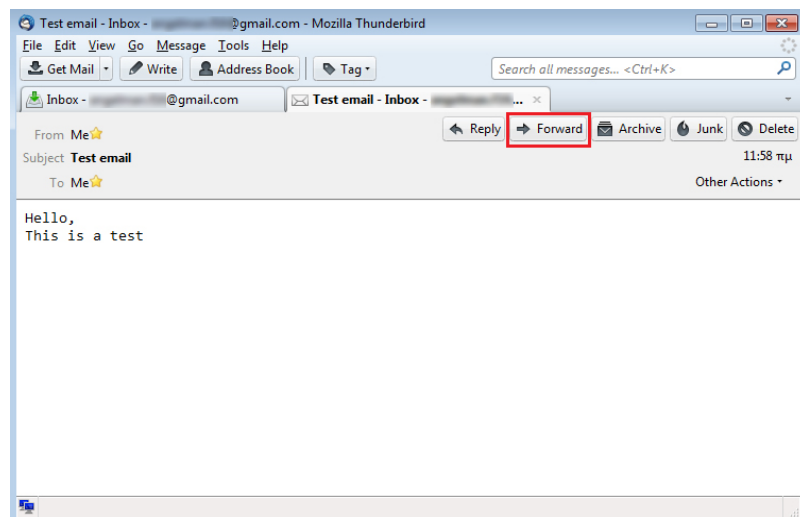


Figure 189: Marking of the Forward option in the window of a specific email in Thunderbird

Finally, you can forward it by selecting Message→Forward from the menu bar (Figure 172, section 1 and Figure 190)

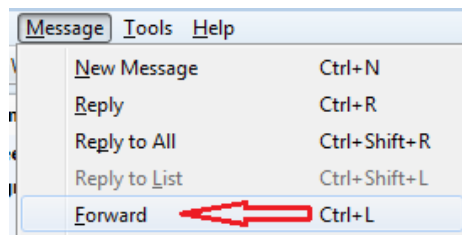


Figure 190: Marking of the Forward option in the Message menu item in the top menu bar

To indicate that your email contains forwarded content the prefix “Fw:” will be inserted in the email’s subject. Also the email will contain the forwarded content but it will be separated from your additional content (Figure 191).

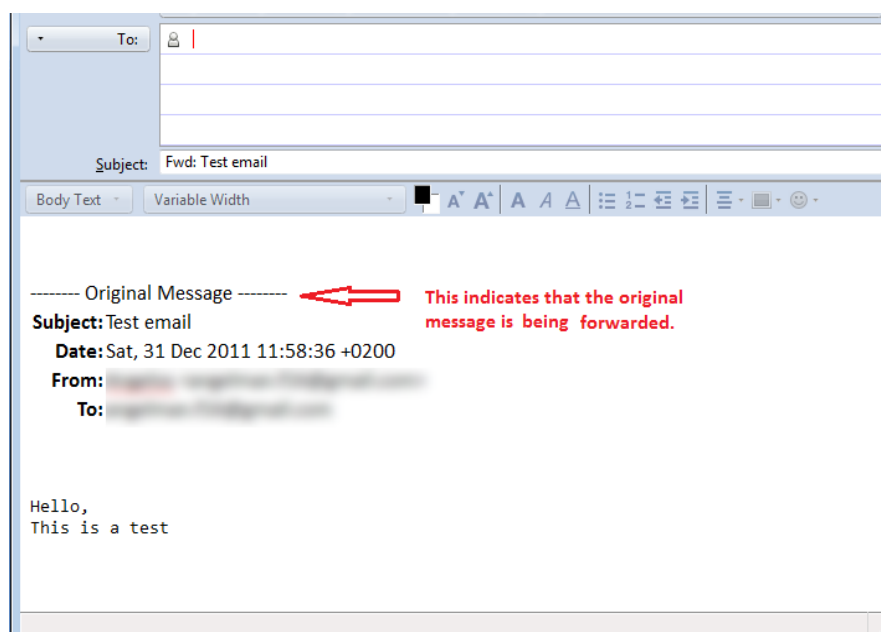


Figure 191: Marking of the text appearing in the forwarded message content, that indicates the original message

2.7.3.5 *Organizing and searching your emails*

One easy and fast way of finding emails in your account, is to use the search function. Simply enter the keywords in the search field and press enter (Figure 172, section 3).

You can also create folders to move your messages for easier access. Right click on the folders list (Figure 172, section 4) and select “New Folder” (Figure 192).

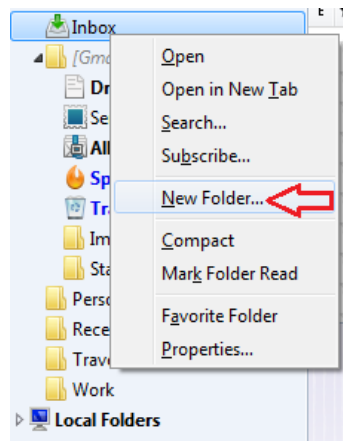


Figure 192: Creating new folder to organize the email messages in Thunderbird

Name the folder and move your emails by right clicking on their subject and by selecting “Move to” or “Copy to” if you want to make a copy of the email (Figure 193).

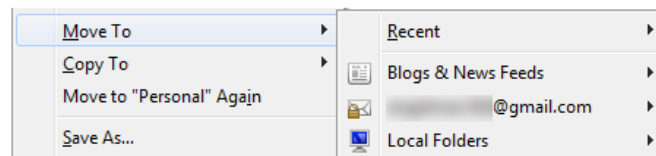


Figure 193: Showing how to move or copy a message in another folder than the original one (usually the Inbox)

If you want to delete a message, right click on its subject and select “Delete Message”.

a) Dedicated websites of providers (Internet email clients)

As mentioned earlier, another way to access your email account is by using your provider’s dedicated tool on her website (gmail.com for this example). All functions explained earlier are achieved by the same procedures described in the case of email software clients, so here we shall focus on where you can locate the dedicated tools of providers.

The first thing to do when you navigate to the website is to log in or sign in, that is, enter your username and password (Figure 194).

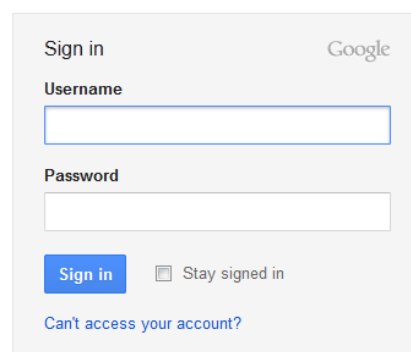


Figure 194: The page to login to the gmail.com email provider

Do *not* check the “Stay signed in” option and decline any offer to remember your password if you are using a public computer.

After successfully logging in, you will be transferred to the main window of your email account (Figure 195) and to your Inbox messages:

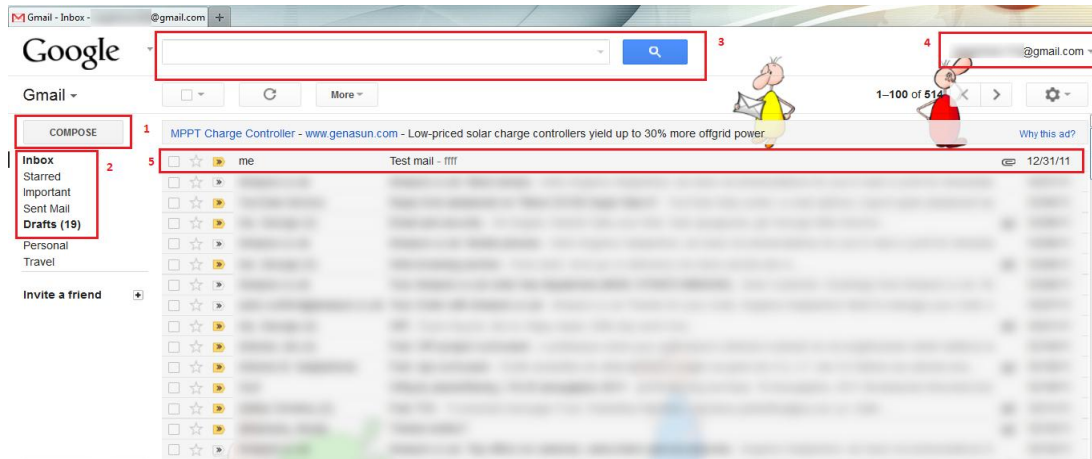


Figure 195: Main window of the gmail.com email client, with numbered sections

To write a new email select the **COMPOSE** button (Figure 195, section 1), in order to navigate to the “Compose mail” screen where you can compose your email as explained at the “Creating a new email” section above.

You can see the sent mails at the “Sent Mail” folder from the list on the left (Figure 195, section 2) and you can search your account as well by entering the text at the search box (Figure 195, section 3).

To read an email, you may click anywhere on the highlighted line (Figure 195, section 5). If there is an attached file with the email the clip  icon will appear next to the title and you will be able to download it once you open the email. (Some tools perform also a scanning of the email for malware code before opening it). To reply or forward the message, select the corresponding option at the bottom of the email (Figure 196):

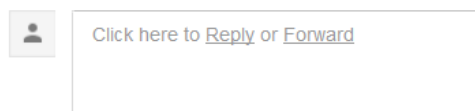


Figure 196: Options to Reply or Forward an email, in gmail.com

To delete a message, click on the tick box on the left of the sender’s name and then click on the



button. This can be also done when you open the email.

Finally, do not forget to sign out when you are done by clicking on your username (Figure 195, section 4) and selecting the “Sign out” option (Figure 197).

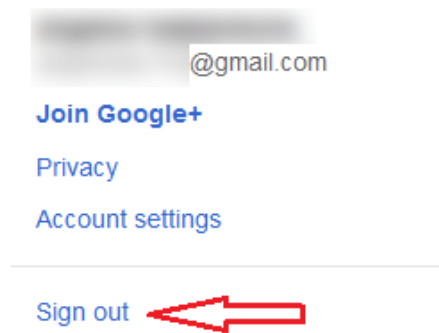


Figure 197: Signing out from your gmail.com account

2.7.4 Alternative Email software

In the subsection 2.7.3.1, Mozilla Thunderbird has been introduced as a dedicated type of software that allows you to access and organise your emails. There are also alternative email applications, two of the most widely used are the Microsoft Outlook™ and the Windows Live Mail™.

Figure 198 shows the basic and common functions of the two alternatives of email software. Their features are marked with red-line borders. Each one is given with a short description in the next paragraph. Detailed explanation about the usage of each option can be found in subsection 2.7.3.1 (*Email and Security → Email software and Internet access → Dedicated email software*).

1. **New message:** This option launches a new window to write a new email as explained in section 2.7.3.1 (*Email and Security → Email software and Internet access → a) Dedicated email software → Sending email*).
2. **Reply, Forward & Delete message:** The reply option allows the user to reply to an email, while the *reply all* option is used to reply to the group of email addresses that were included in the To and CC fields of the received message. With the forward button you can send the selected email (or the opened email) to another address. Finally, the Delete option moves the selected message to the *Deleted items* folder.
3. **Send/Receive:** Use this button to refresh your inbox in order to receive all the latest emails or to send any emails pre-created and saved in the *Outbox* folder.
4. **Search box:** Here you can search your inbox for specific messages by using words or phrases that might be included in the title and/or content of the email messages.
5. **Personal Folders:** the folders where your email messages are stored in. Usually new emails are placed in the Inbox folder unless they contain advertisements or offensive content. In that case the software moves them automatically in the “Junk email” folder. The recognition of such junk emails is performed by the email software using pre-existing knowledge on senders and offensive content, but it can also be trained by you when marking specific emails as *spam/junk*.
6. **Other pages:** These dedicated email applications offer the ability to have a personal calendar to save your appointments or other notes. You can use the *Contacts* page to add new email addresses in order to have quick access to them while sending an email.
7. **Emails list:** This is the main window of the email application. The contents of the selected folder are displayed here.

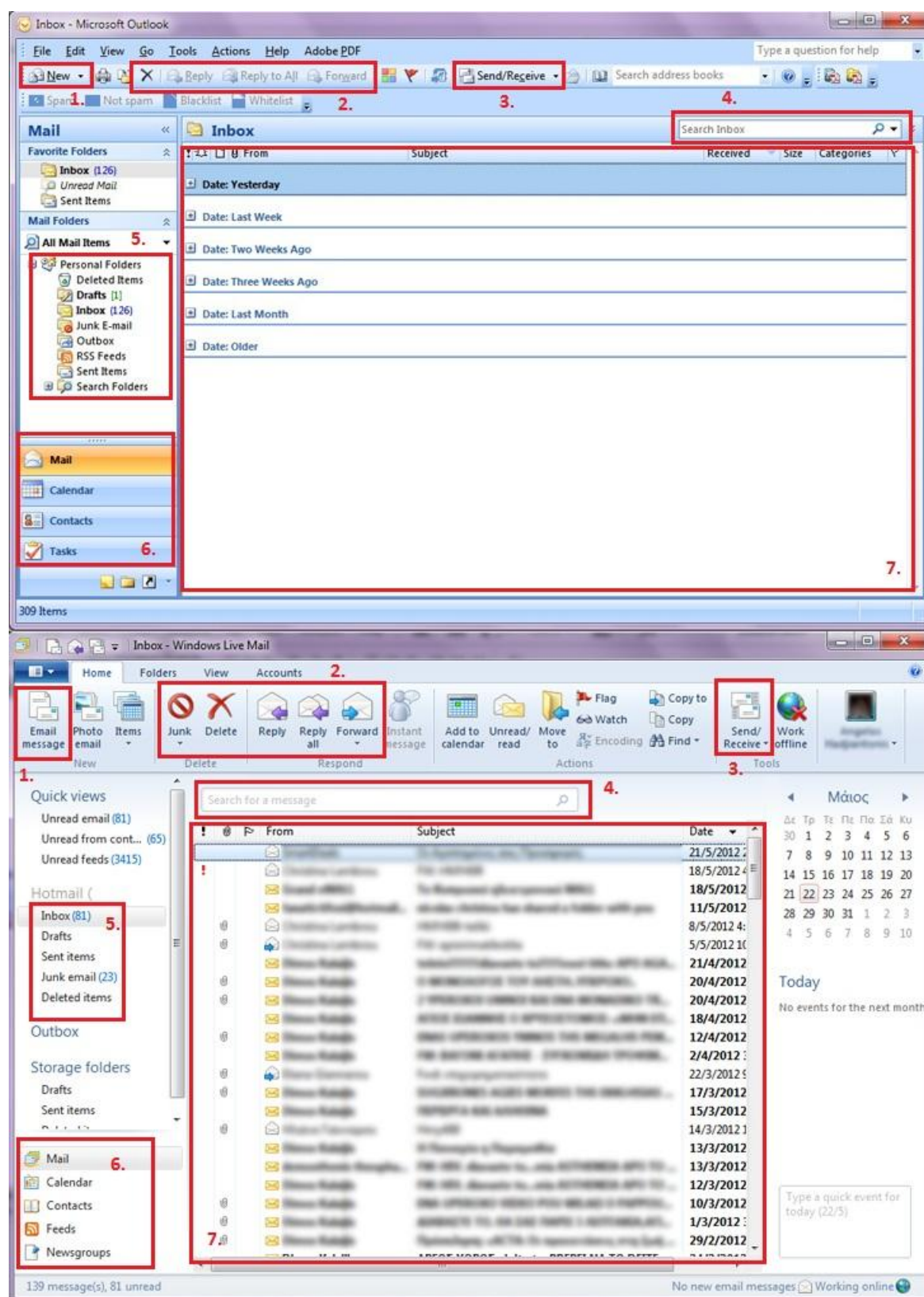


Figure 198. Alternative email software (Microsoft Outlook™ on top and Windows Live Mail™ at bottom). The figure presents screenshots with the positions of the numbered items as explained in the text.

2.7.5 Security Issues

Unfortunately with email usage some vulnerabilities issues have been emerged. However, knowing better these issues will make it easier to protect yourself and your account. You may find additional information on risks and dangers from using the Internet and communicating through email, in the Web sites of the Centers promoting safer Internet in your country. Links are available in Table 18.

2.7.5.1 *Logging-out of account and saving passwords*

One of the most important actions you must remember is to *always log out* of your account when you finish your work. Never close the browser or the email applications without logging out since they might keep you logged in to your account, thus increasing the risk of someone else accessing your account.

Another important thing to consider is NOT to save your password on a public computer, e.g. an internet cafe. You *must neither* save your password on a computer that you do not own (nor click the “Remember my password” option), since the password will be saved even if you log out.

2.7.5.2 *File Attachments and dangerous extension types*

Sometimes you might receive emails from unknown senders. You must open this emails with caution as they might contain dangerous attachments infected with malware code. Usually a potentially dangerous type of attachment is an executable (a file ending in .exe). Most email providers scan your emails for malwares but you must run an antivirus scan yourself or delete the email if you are feeling unsure (Section 2.11, Safety and Security).

2.7.5.3 *Spam / Unwanted emails*

Always be very careful in what websites you share your email address since spam email messages (massively sent and usually unwanted emails) are a constantly growing problem. These are messages that contain advertisements or even offensive content and usually come from unknown users. Most of the times they are sent from automated computers that find your address when you share it with a not so trustworthy website. Fortunately, email providers have filters that cut out spam emails and save them in the “Spam” folder (Figure 172, section 4). Again be extremely cautious with these emails and avoid opening them.

2.7.5.4 *Phishing/Spoofing*

A sub category of spam messages are the phishing/spoofing messages. This kind of messages may come from an unknown sender and pretend to be sent from a trusty account or website. Their purpose is to trick the recipient and try to acquire information such as usernames, passwords and credit card details. Some emails ask you to navigate to a website to enter your username and password. This website might have exactly the same appearance as the original website. Most websites and online services *never* ask for any sensitive information to be given through email. You

must therefore be suspicious when someone asks for personal or other kind of information through email.

2.7.5.5 *Copyright issues*

Finally, you must be aware that images, documents and other form of work exchanged through emails, retain their copyrights and their creator can claim them. This means that before sharing/distributing any content of which you are not the original creator, you have to ensure that it is not bounded by a license that prevents such actions. Alternatively, you can ask for the explicit right by the owner of the content.

2.8 Communication software

2.8.1 Skype

Skype is one of the most popular programmes used for chatting, internet phone calls and communication with everybody around the World. You can download the programme for free at: www.skype.com.

1. Installation

- When the File Download screen is displayed, click **Save**.
- Choose somewhere on your computer to save the SkypeSetup file and click **Save**.
- When it has downloaded, go to the location you saved the SkypeSetup file to and double-click it.
- When the Open File screen is displayed, click **Run**.
- Select your language, read the Skype End User License Agreement and the Skype Privacy Statement, and then click **I agree – next**.
- Your Skype installation starts. When it is complete, Skype opens and the Welcome to Skype sign-in screen is displayed.
- Select the language you would like to be used for Skype. Afterwards, you can still change this language from the **Menu → Tools**. The programme supports more than 32 languages.
- On the Welcome screen, enter your Skype Name and password and click **Sign me in** or create an account by clicking **Create a new account** and follow the steps.
- If this is the first time that you have signed in to Skype, you can now check your sound and video to ensure they are set up correctly and add a profile picture for your Skype account.
- Click **Continue**.
- Select the speakers, microphone and webcam you want to use with Skype, and then click **Continue**.
- You can now add a profile picture to make it easier for your friends and family to find you on Skype.
- If you don't want to add your profile picture right now, just click **Add later** and go to the next step.
- To take a picture of yourself using your webcam, click **Take a picture**. Alternatively, if you already have a picture that you want to use as your profile picture, click **Browse...** to find and select it.
- The picture you have taken or selected is displayed. If you want to resize the picture, use the slider underneath it. If you are not happy with the picture, click **Try again** to take another picture or select a different one.
- When you are happy with your profile picture, click **Use this picture**.
- Your profile summary is displayed. Click **Start using Skype**.



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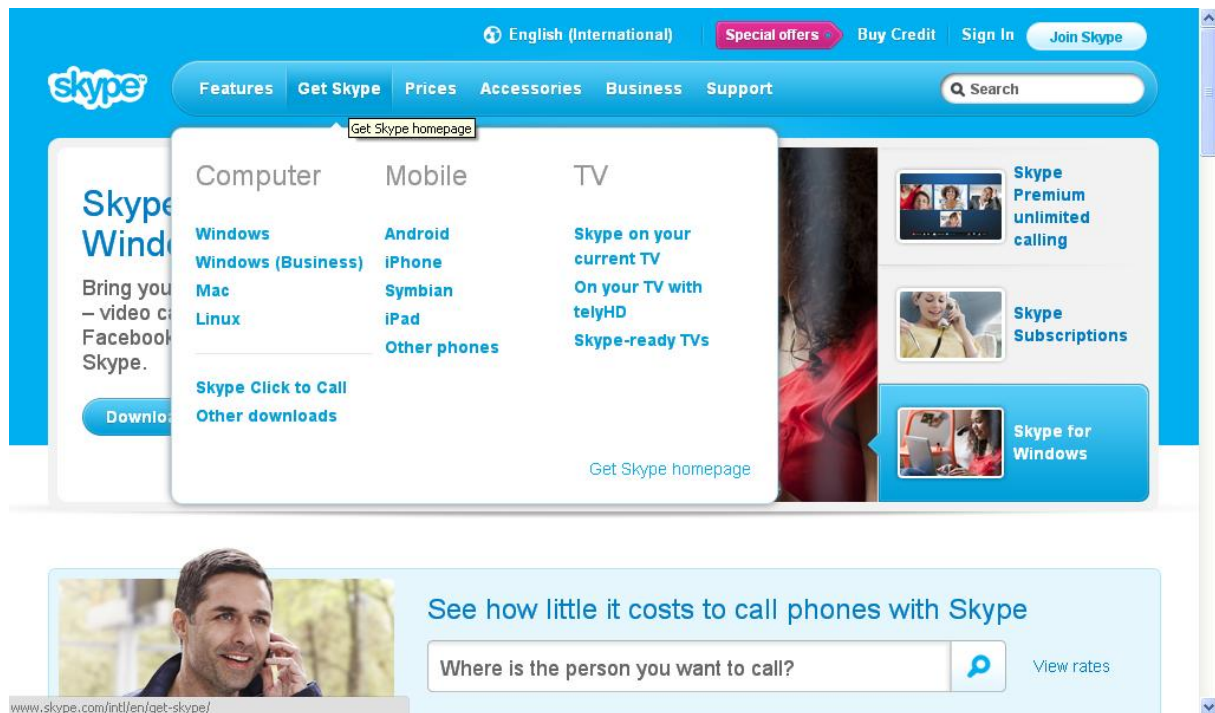


Figure 199: Skype webpage



Figure 200: Installation box

2. Using Skype

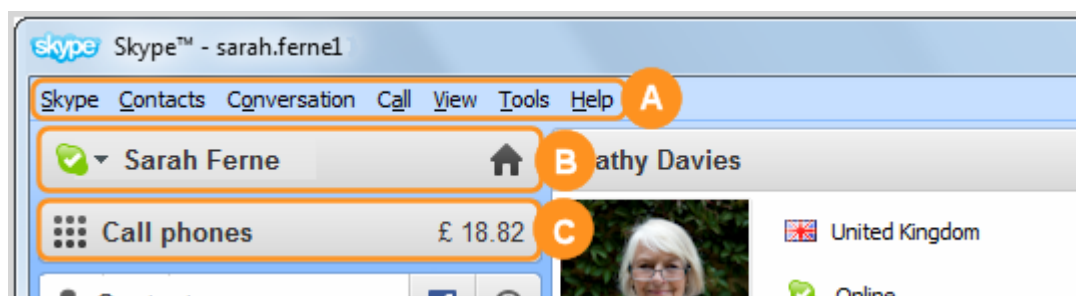


Figure 201: Skype top screen with menu, status and call phones bar

- A. Menu bar.** Includes all the options that will help you get the most out of Skype.
- B. Status bar.** You can change your Skype status and access Skype Home from here.
- C. Call phones bar.** Displays the dial pad so you can call phones and mobiles (this requires you have provided payment details, because calling to phones and mobiles is not free).

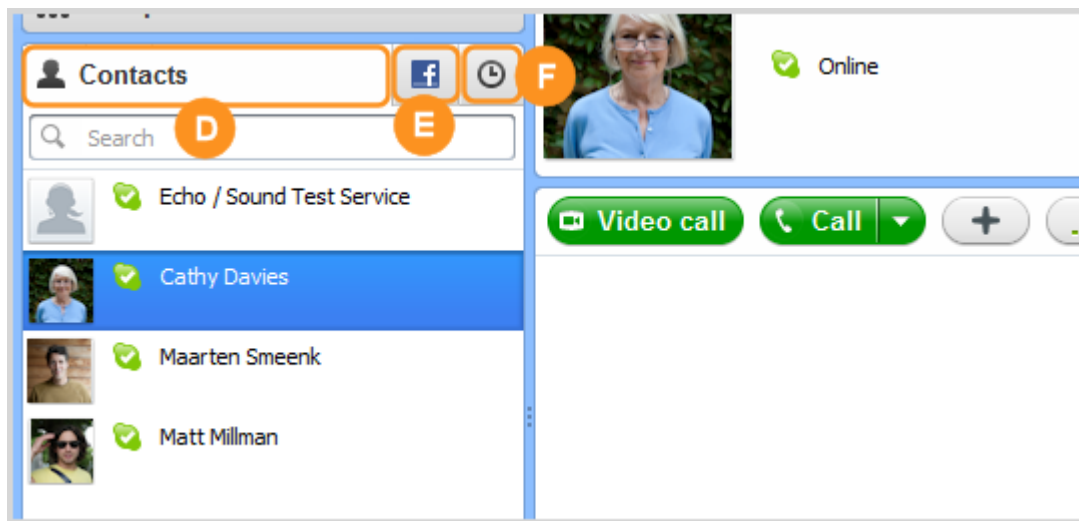


Figure 202: Skype top screen with contact list, facebook list and recent list.

D. Contact list. Lists your contacts and lets you see their status.

E. Facebook list. Lists all of your friends from your Facebook account, and shows whether they are online, away, or offline on Facebook.

F. Recent list. Lists the recent conversations you've had in Skype.

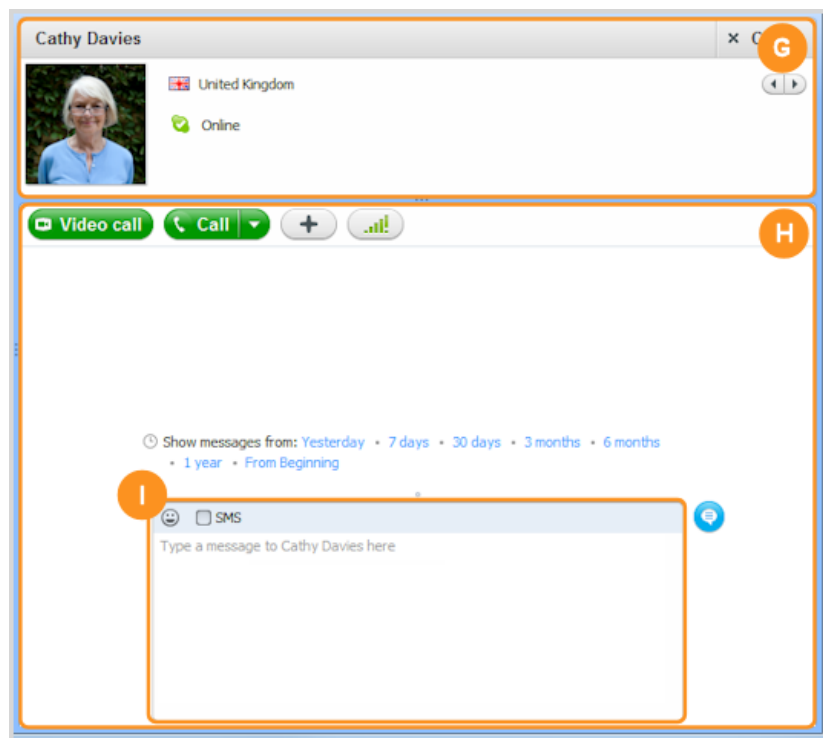


Figure 203: Skype screen with contact summary, conversation window and box.

G. Contact summary. Displayed when you select a contact or set up a group chat. Summarizes the details of the contacts you're currently chatting to in Skype.

H. Conversation window. Displayed when you select a contact or set up a group chat. Shows the instant message conversation you're having. The buttons at the top of the conversation window let you call someone on Skype, send files, send contacts, share your screen or add more people to the conversation. You can also check your call quality information.

I. Conversation box. Displayed when you select a contact or set up a group chat. Use this box to type and send your instant messages and text messages.

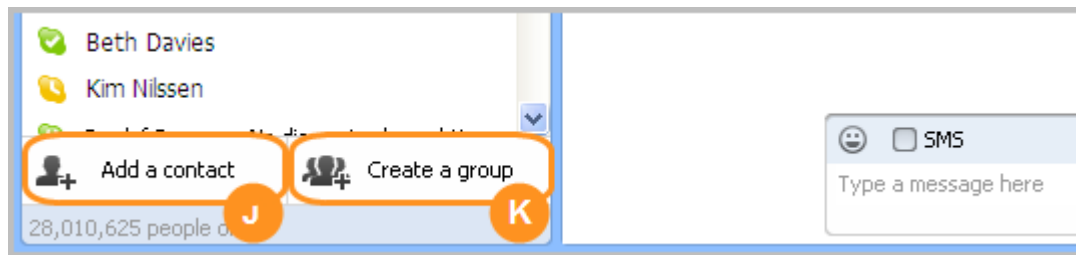


Figure 204: Skype screen with functionalities to add a contact and create a group.

J. Add a contact. Lets you search for your friends and add them as contacts.

K. Create a group. Lets you create a group so that you can make a conference call or group video call.

3. Skype Hotkeys, Shortcuts and Chat Commands

These hotkeys all Call Related and must be enabled and defined at Skype- Tools- Options -Advanced- Hotkeys. Undefined means that the user needs to define what combination he would like to use.

- Alt-PgUp: Answers a call
- Ctrl-Alt-PgUp: Answers a call with video
- Undefined: Ignore call
- Alt-PgDn: Reject/Hang up call
- Undefined: Focus Skype
- Undefined: Search for Skype Users
- Undefined: Mute Microphone

Main Window:

- Ctrl+E: Switch between Events History and Contact List
- Ctrl+U: Show/Hide Offline Contacts
- Ctrl+W: Hide Main Skype Window
- Ctrl+Q: Quit Skype

Chat Window:

- Ctrl+F Find/Search this Chat
- F3/Shift-F3: Find Next/Previous Match (use after Ctrl+F)
- Ctrl+W Close/Hide Chat Window

Quickfilter:

- F6: Jump to Quickfilter
- Escape: Clear Quickfilter

Chat commands:

- /add skypeName: add the specified Skype Name to this chat (example: “/add john”)
- /help: list available system commands
- /topic newtopic: change chat topic to “newtopic”
- /me something: others will see an action that you perform (example: “John smiles”)
- /history: show full history for the chat (you can then review and search it)
- /find text: find messages containing “text” in the chat
- /fa or /: repeat last search
- /alertsoff: disable new message alerts for this chat. Useful if you don’t want chat window to pop up or the taskbar entry to blink for this chat, but would still like to be “connected” to it. If a chat is in this mode, it will be in the “Unread chats” section on Start Tab when new messages are posted to it.
- /alertson or /alertson text: restore default behaviour, to be notified when new messages are posted. If you use “/alertson text”, you are notified only when a message is posted that contains “text”.
- /leave: leave the chat (does the same as clicking the “Leave” button on toolbar).

An updated list of these commands is provided at
http://kosi2801.freepgs.com/2008/12/20/skype_chat_commands.html.

2.8.2 Google Talk

Google Talk (GTalk) is Google Talk, a downloadable chat application by Google with which you can do the following:

- Text chat
  - o Instant messages: share quick thoughts in real time
  - o Status updates: see if friends are around and what they are up to
  - o File transfer: instantly send and receive files, pictures and more
- Voice chat
  - o Free long distance: make PC-to-PC calls to people anywhere in the world
  - o Audio conferencing: talk to multiple people at once
  - o Google Mail integration: chat with your friends on Google Mail
- You can also get the video chat plug-in to make voice and video calls within Google Mail.

How to install it on a PC:

- Visit www.google.com/talk/ OR by type Google Chat or Google Talk in Google and then clicking on the first page that is shown.
- When you open the website of Google Chat or Google Talk, look for a Download link.
- Click on the Download link. The website may automatically recognize your OS (Windows, Mac or Linux) or you may have to choose yourself.
- Download the installation files for your OS.
- Wait for the Download to finish. Double click on the downloaded installation file. (Make sure that all web browsers are closed. It is also recommended that all other programs be closed).
- Follow the step by step installation process – it will take a small amount of time.
- If you are a Windows user, you will then have to restart your computer.
- The Google Talk window will open on starting the computer.
- You can log in by entering your Google (or GMail) username and password.
- After this, you can add friends and chat with them.

- Google Talk is also integrated with Google Voice and it allows for video and voice calls. A complete online guide for every functionality is available at <http://support.google.com/talk/?hl=en>.

2.8.3 Windows Live Messenger

This product can be downloaded at <http://windows.microsoft.com/en-US/windows-live/essentials-home>.

Note: it is free.

1. Installation

- Ensure you have an e-mail address.
- Download MSN Messenger by going to the download website and clicking Download.
- Once downloaded, install it.
- After installation, launch the application.
- Log in or in case you are a new user select Sign up.

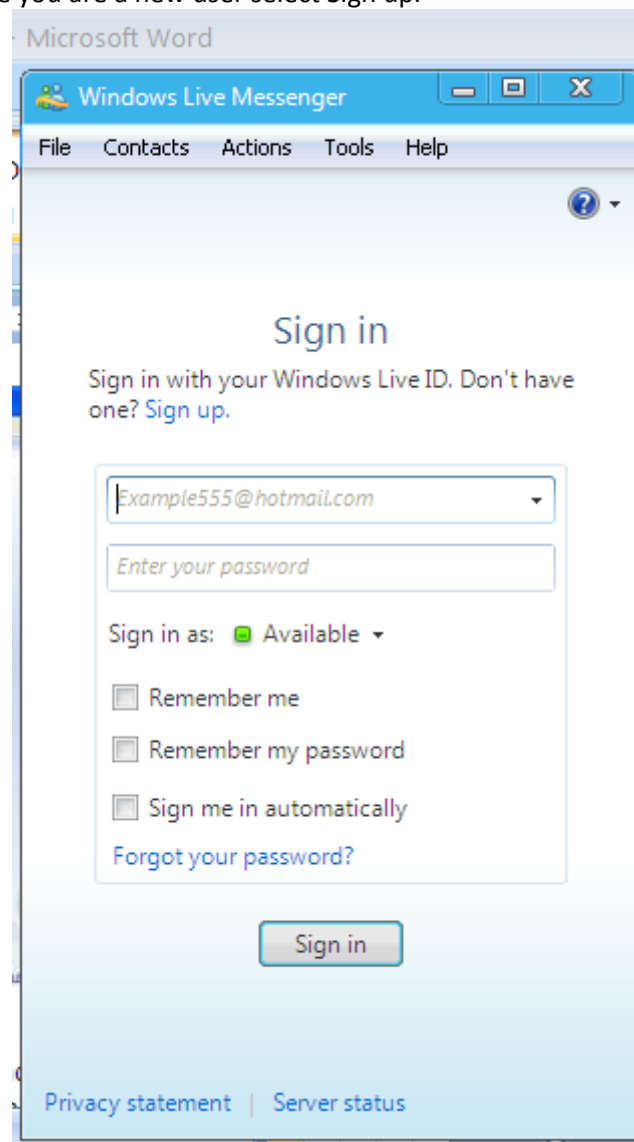


Fig. 60 Windows Live Messenger login screen

- Add a contact, a person to talk to, by clicking **Add A Contact** on the Contacts menu.

- When/If the person is online, a green figure will appear beside their name in your contact list. Double click on their name and type a greeting into the lower rectangular box. Click **Send an Instant Message**.
- Type a message to the person. Click Send. Wait for the person to answer you. You can see when the person is typing a letter to you.
- Engage in conversation if they reply. If desired, many options can be taken from here. You can select an action to take by selecting something from the Actions menu on the conversation's toolbar.
- Click **Tools** or **Actions** to use some of Messenger's other features. Use emoticons if you want to send an icon to someone as part of your message.
- Click the **Invite** button at the top of the chat window to invite another person to your conversation. You can now chat with two people at once. Click the red X at the top of the screen to close the chat window. Click **File** and then **Sign Out** to be offline.

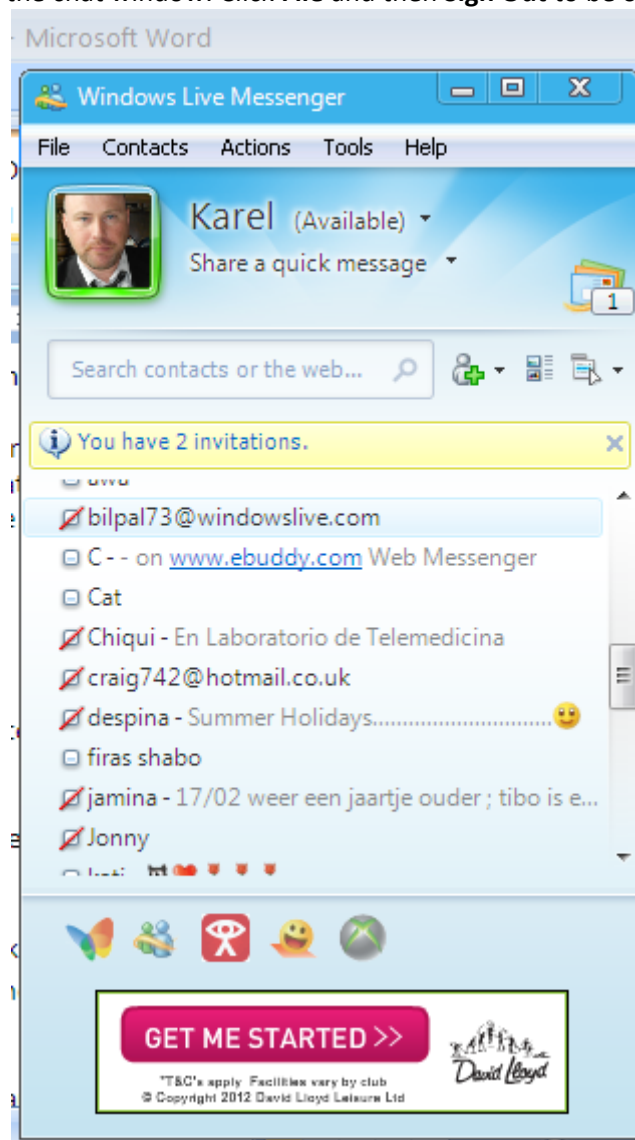


Fig 61 Windows Live Messenger Chat screen

More detailed instructions can be found on <http://windows.microsoft.com/en-US/messenger/features>.

2. Windows Messenger keyboard shortcuts

Following shortcut keys exist for Windows Messenger.

Table 16: 2. Windows Messenger keyboard shortcuts - For the Messenger conversation window

For the Messenger conversation window	
Shortcut	Command
Invite someone to this conversation	Alt+I
Create a Sharing Folder	Alt+L+H
Send a single file	Alt+L+F
Start or stop a video call	Alt+O
Call a computer	Alt+C
Call a contact at home	Alt+C+H
Call a contact at work	Alt+C+W
Call a contact at a different number	Alt+C+O
Call a new number	Alt+C+N
See a list of activities	Alt+V
See a list of games	Alt+G
Block a contact from seeing you or contacting you	Alt+K
Select an emoticon	Alt+M or Ctrl+E
Select a wink	Alt+W
Send a nudge	Alt+N
Select a background for your conversation window	Alt+B
Keyboard shortcuts for Windows Live Call	
Make a call	CTRL+D
End a call	CTRL+D
Open the Options dialogue box	ALT+T+O
Open Help	F1
Show Options	CTRL+E
Delete selected Call History entry	DELETE
Show Call History	CTRL+H
Get more information about Windows Live Call	CTRL+I
Add minutes	CTRL+T
Manage your account	CTRL+O
Mute the speaker	CTRL+S
Mute the microphone	CTRL+M

More shortcuts can be found at <http://shortcutkeys.net/windows-live-messenger-keyboard-shortcuts/>.

2.8.4 Safety and communication software

While online communication offers a wide variety of advantages (cheap, easy and possible on mobile and PC), there are also risks associated to using online communication software. Here are some recommendations (based on <http://www.chatdanger.com/>):

- Do you know everyone on your contacts list? Think carefully about who is on your list. People may not be who they say they are, so a friend of a friend is not necessarily a friend.
- Keep your personal information secret when talking to someone you don't know in the real world. Also think about what visible information you have, for example in your profile.
- Keep an archive/save a copy of your conversation, and don't be afraid to tell someone you are saving their conversation. This is supported by most applications.

- Archiving or saving your conversations can provide useful evidence if you come to make a report about something or someone.
- Check your preferences or privacy options in the applications you use. For others that do not offer this option, you can still highlight the conversation with your mouse and copy and paste conversations into a Word document which you can save.
- Don't hesitate to block/ignore people.
  - To do this you right click on the name of the person in the contact list which should give you a range of options, and one of these is mostly Block. It will mean that you will not receive messages from this person anymore. Block is sometimes called 'Ignore', and if right-clicking doesn't work, have a look in your Preferences for this function.
- Check you know how to report something you feel uncomfortable about:
  - Keep a copy of the conversation that you want to report and provide that to your parents or supervisor.
  - Look for a way to contact your Messenger provider by clicking the Help tab.
- Use a nickname, not your real name, and a nickname that is not going to attract the wrong type of attention.
- Keep your username and password private, and change your password on a regular basis
- Don't reply to abusive messages. Don't send abusive messages either. It's best not to say anything that you wouldn't say to someone's face.
- Don't accept messages from people you don't know.
- Meeting someone you have only been in touch with online can be dangerous. If you feel that you 'have to' meet, then for your own safety you must inform your parent or carer or friends and take them with you – at least on the first visit – and meet in a public place in daytime.
- If someone you have accepted on your buddy or contacts list is acting weird, don't pass them on to a friend. You could be putting your friend at risk. Just block them and report them.
- Be also careful when accepting files that are being sent, especially the ones with an .exe extension. They are often malicious software that can harm your PC, but also extract personal data from your PC.
- Never provide credentials of any sorts over chat sessions, and definitely not credit card details.

2.9 Mobiles Smartphones and Tablets

Smartphones and Tablets are devices comprising a combination of cell phone with computer, web browser, multimedia player and camera. The smartphone opens up new possibilities for educational purposes. The ease-of-use and the mobility of such devices make it possible to use it on buses, public places, parks and train for studying. To utilise such a training device it must be easy for an educator to produce, edit, and upload training material and also to be able to follow the student's progress. Here are some features that differentiate smartphone from ordinary cell phone.

- Mobile devices
- Operating System
- Software
- Web access
- QWERTY Keyboard
- Messaging
- Solid PIM Functionality (Plenty of info and fields for each contact. Good calendar view, flexible, etc.)
- Universal Search

- Office documents editing

2.9.1 Mobile devices¹

This unit will introduce:

- Phones
- Smartphones
- Tablets based on Android, iPad

The shape of a mobile phone can be an important factor in finding a phone that best fits with your needs. There are several main categories a mobile phone may fall into. The following briefly describes how each shape may be useful depending on your circumstances.



Clam Shell / Flip Phone

For people with limited or low vision or who are blind, a phone that flips open and answers automatically may be useful.



Candy Bar / Monobloc/ Stick

For people with arthritis or poor dexterity, a 'candy bar' or 'bloc' phone may be useful to avoid the need for added movements like sliding or flipping open the phone to use it.



Slide

Like a flip phone, this style of phone may be useful for people with limited or low vision or who are blind, as they will answer automatically upon sliding open.



Swivel

Like a flip or sliding phone, this style of phone could be useful for people with limited or low vision or who are blind as they will answer automatically upon opening.



Touchscreen

This style may be useful to those people who are deaf or have moderate to profound hearing loss and who will use their larger screen sizes for texting or video calling (using e.g. sign language).



Smart Phones

Similar to a touchscreen, this style could be useful to those people who are deaf or have moderate to profound hearing loss and who will use the larger screen size for texting or video calling. In addition, increasingly also the accessibility for people with visual impairments is being enhanced, using multi-touch and gesture technology.

ce.cfm?lang=eng

Fig 62. Various smartphones (Resource: <http://electronics.howstuffworks.com/smartphone.htm>)

2.9.1.1 *What is a smart phone?*²

Unlike many traditional mobile phones, smartphones allow individual users to install, configure and run applications of their choosing. A smartphone offers the ability to conform the device to your particular way of doing things. Most standard mobile-phone software offers only limited choices for re-configuration, forcing you to adapt to the way it's set up. On a standard phone, whether or not you like the built-in calendar application, you are stuck with it except for a few minor tweaks. If that phone were a smartphone, you could install any compatible calendar application you like.

Here's a list of some of the things smartphones can do:

- Send and receive mobile phone calls – some smartphones are also Wi-Fi capable
- Personal Information Management (PIM) including notes, calendar and to-do list
- Communication with laptop or desktop computers
- Data synchronization with applications like Microsoft Outlook and Apple's iCal calendar programs
- E-mail
- Instant messaging
- Applications such as word processing programs or video games
- Play audio and video files in some standard formats

The following sections detail particular features that may be useful in different circumstances. It is important to realise that there is no one solution for all, and as such, finding a suitable phone will involve considering all of the available features of a particular model, knowing what you need or what is likely to be more useful to you and testing the phone to ensure that it really does meet your particular needs.

Resource:

<http://mobileaccessibility.info/device.cfm?lang=eng>

<http://electronics.howstuffworks.com/smartphone.htm>

2.9.1.2 *Features of smartphones*

Inside a Digital Mobile Phone

On a "complexity per cubic inch" scale, mobile phones are some of the most intricate devices people use on a daily basis. Modern digital mobile phones can process **millions of calculations per second** in order to compress and decompress the voice stream.

A mobile phone contains following components:

- A circuit board containing the brains (processing power) of the phone
- An antenna to receive and transmit the audio signal
- A liquid crystal display (LCD) to display messages, phone numbers, addressbook, etc.
- A microphone to provide audio input

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² Based on <http://electronics.howstuffworks.com/smartphone.htm>

- A speaker to provide audio output
- A battery that provides the power source for the phone functions.
- An input mechanism to allow the user to interact with the phone. The most common input mechanism is a keypad, but touch screens are also found in some high-end smartphones.
- Basic mobile phone services to allow users to make calls and send text messages.
- All GSM phones use a SIM card to allow an account to be swapped among devices.
- Individual mobile phone devices are uniquely identified by an International Mobile Equipment Identity (IMEI) number. This is useful in case your mobile is stolen to block any usage with the mobile.

The functionalities that are supported are mainly the following:

- phones of different types and in different countries can communicate with each other (calls, smses, etc.)
- roaming permits the same phone to be used in multiple countries, providing that the operators of both countries have a roaming agreement.
- send and receive data and faxes (if a computer is attached), access WAP services, and provide full Internet access using technologies such as GPRS, mobile internet or WiFi.
- applications like a clock, alarm, calendar and calculator and a few games.
- sending and receiving pictures and videos through MMS, and for short distances with e.g. Bluetooth.
- GPS receivers integrated or connected (i.e. using Bluetooth) to cell phones.
- push to talk, available on some mobile phones, is a feature that allows the user to be heard only while the talk button is held, similar to a walkie-talkie.
- features aimed toward personalisation, such as user defined and downloadable ring tones and logos, and interchangeable covers
- usually one can choose between a ring tone, a vibrating alert, or a combination of both.

Smartphone Operating Systems

The most important software in any smartphone is its operating system (OS). An operating system manages the hardware and software resources of smartphones. The most common smartphone operating systems are: RIM (Blackberry), Symbian (developed by NOKIA but now in hands of Accenture), iOS (developed by Apple), Android (developed by Google), Windows Phone (developed by Microsoft). iOS and Android are the most popular OS³

Symbian



Symbian was the number one smartphone platform by market share from 1996 until 2011 when it dropped to second place behind Google's Android OS due to a rather old technology that is being used. It will be discontinued most likely by the end of 2016

Photo source: <http://www.zdnet.com>

Windows Mobile

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³ Gartner Smart Phone Marketshare 2012 Q1, Gartner, Inc. Retrieved 2012-05-26.



The multi-touch-enabled Windows Mobile 7 (now replaced by Windows Phone) arrived in 2010. The OS is based on Windows OS. Much of the strength of this OS lies in the compatibility with the Microsoft Office suite of programs.

Photo source: <http://www.digitaltrends.com>

Android



Android is a Linux-based operating system for mobile devices such as smartphones and tablet computers. It is developed by the Open Handset Alliance, led by Google, and other companies.

Android 4.0 (Ice Cream Sandwich) is the latest version of the Android platform for phones, tablets, and more. Refined animations and feedback throughout the system make interactions engaging and interesting. An entirely new typeface optimized for high-resolution screens improves readability and brings a polished, modern feel to the user interface.

Photo source: <http://www.aliexpress.com>

Multitasking is a key strength of Android and it's made even easier and more visual on Android 4.0. The Recent Apps button lets you jump instantly from one task to another using the list in the System Bar. The list pops up to show thumbnail images of apps used recently — tapping a thumbnail switches to the app.

Rich and interactive notifications let you keep in constant touch with incoming messages, play music tracks, see real-time updates from apps, and much more. On smaller-screen devices, notifications appear at the top of the screen, while on larger-screen devices they appear in the System Bar.

Unique Operating Systems

iPhone

Apple's iPhone uses a variation of the Mac OS, known as OS X. iOS (originally iPhone OS) is a mobile operating system developed and distributed by Apple Inc. Originally released in 2007 for the iPhone and iPod Touch, it has since been extended to support other Apple devices such as the iPad and Apple TV. Unlike Windows CE (Mobile and Phone) and Android, Apple does not license iOS for installation on non-Apple hardware.

The user interface of iOS is based on the concept of direct manipulation, using multi-touch gestures. Interface control elements consist of sliders, switches, and buttons. The response to user input is immediate and provides a fluid interface. Interaction with the OS includes gestures such as swipe, tap, pinch, and reverse pinch, all of which have specific definitions within the context of the iOS operating system and its multi-touch interface. Internal accelerometers are used by some applications to respond to shaking the device (one common result is the undo command) or rotating it



in three dimensions (one common result is switching from portrait to landscape mode).
iOS is derived from OS X.

Photo source: <http://iphonedevopmenttutorial.org/>

BlackBerry



BlackBerry OS is a proprietary mobile operating system, developed by Research In Motion (RIM) for its BlackBerry line of smartphone handheld devices. The operating system provides multitasking and supports specialized input devices that have been adopted by RIM for use in its handhelds, particularly the trackwheel, trackball, and most recently, the trackpad and touchscreen.

Photo source: <http://www.qsmarena.com>

Bada

The Bada is an [operating system for mobile devices](#) such as [smartphones](#) and [tablet computers](#). It is developed by [Samsung Electronics](#) and announced in 2009.

Resource: Ed Hansberry (11 November 2009). "Samsung Bailing on Windows Mobile"

2.9.2 Using mobile devices

The mobile phones provide an incredible array of functions. The following provides an overview.

2.9.2.1 Calling operation

The primary function of a mobile phone is voice communication. Like traditional landline phones, mobile phones allow one user to call another and talk from afar. Functions related to voice communications include automatic redial, last number recall, caller ID, logging of incoming and outgoing calls, speakerphone or hands-free capabilities, and speed dialling.

Some phones also are equipped with voice-activated dialling and features like a silent mode, which disables ringing or indicates incoming calls and alerts by vibration. Many mobile phones also feature the ability to block calls from unwanted numbers or customize ringtones to send an audible indication of the source of an incoming call.

Read more: What Are the Functions of Mobile Phones? | eHow.com

http://www.ehow.com/list_6363799_functions-mobile-phones_.html#ixzz1y8ZhSLMt

2.9.2.2 Text messages⁴

SMS stands for **short message service**. Simply put, it is a method of communication that sends text between mobile phones, or from a PC or handheld to a mobile phone. The "short" part refers to the maximum size of the text messages: 160 characters (letters, numbers or symbols in the Latin alphabet).

Even when a mobile phone is not in use, it is constantly sending and receiving information. It is talking to its mobile phone tower over a pathway called a **control channel**. The reason for this chatter is so that the mobile phone system knows which mobile your phone is in, and so that your phone can change mobiles as you move around. Every so often, your phone and the tower will exchange a packet of data that lets both of them know that everything is OK.

The phone also uses the control channel for call setup. When someone tries to call you, the tower sends your phone a message over the control channel that tells your phone to play its ringtone. The tower also gives your phone a pair of voice channel frequencies to use for the call.

The control channel also provides the pathway for SMS messages. When a friend sends you an SMS message, the message flows through the Short Message Centre, then to the tower, and the tower sends the message to your phone as a little packet of data on the control channel. In the same way, when you send a message, your phone sends it to the tower on the control channel and it goes from the tower to the Short Message Centre and from there to its destination.

The actual data format for the message includes things like the length of the message, a time stamp, the destination phone number, the format, etc.

2.9.2.3 Accessing internet services

An E-mail Message

To look at e-mail messages, an **e-mail client** is used (e.g. Gmail on Android). All e-mail client programmes generally do four things:

- Show you a list of all of the messages in your mailbox by displaying the **message headers**. The header shows you who sent the mail, the subject of the mail and may also show the time and date of the message and the message size.
- Select a message header and read the body of the e-mail message.
- Create new messages and send them. You type in the e-mail address of the recipient and the subject for the message, and then type the body of the message.
- Add attachments to messages you send and save the attachments from messages you receive.

Get information (news, entertainment, etc.) from the Internet

Staying connected has become so important that internet services moved also to mobile phones. That's where **wireless Internet** comes in, whether accessed through a Wifi spot, or using the 3G and 4G capacities of the phones.

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⁴ <http://computer.howstuffworks.com/e-mail-messaging/sms.htm>

2.9.3 Applications

An 'App' is an application that does something – whether that's for business, communication, or entertainment. In recent years, the term 'App' has been referred to as an application that primarily runs on the web (i.e. Chrome applications), or on a mobile device – such as a mobile phone or a tablet computer.

The rise of smartphones and tablet computers has meant that there are now thousands of apps available, from simple note-taking apps, to news readers, and increasingly games.

In terms of operating system, the two big contenders at the moment are Apple's iOS and Google's Android. Apple's iPad runs their own iOS system, while Google's Android system is a lot more open, so that other manufacturers are able to use it in on their devices. While this variety is good, it also means there is a wide range of screen sizes and performances which must be taken into account when creating an app for Android devices.

As of March 2012, there were over 360.000 active apps in the Apple App Store, and nearly 300,000 in the Android Market. Nearly 700 new apps are being added daily to the Apple App Store and nearly 1.000 are being added daily to the Android Marketplace. Games account for 16% across both platforms and books have about 14% of the market.

Once you have your tablet pc, it is easy to purchase an app and install it on your device. On the iPad you can use Apple's App Store directly from the device, or hook it up to your computer and download it through iTunes. The experience on an Android device is very similar. You can access the Android Market directly from the device, or go to the Market website from your computer which will push the app to your device.

Apps come in a wide variety of prices, from free all the way up to almost € 1.000. As of March 2012, 33% of the Apps were free in the Apple App Store, and 63% in the Android Market.

2.9.4 Purchasing a matching device considering alternative text input and browsing methods⁵

Following provides a quick overview of advice regarding what characteristics one needs to pay attention to when purchasing a new mobile phone.

2.9.4.1 Customers who are blind or visually impaired

There are many degrees of visual impairment ranging from difficulty in reading small characters through to complete blindness.

All mobile phones incorporate displays that provide a range of options for users with visual impairments:

- Tactile markers to help orient your fingers on the keypad
- Audible or tactile feedback to confirm a button has been pressed
- Adjustable font sizes

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⁵ <http://mobileaccessibility.info>

- Audible cues for low battery, caller waiting or ending a call and volume level
- Adjustable brightness/contrast controls for the display
- The size of the main display
- Backlit display

The shape of the device may also be something to consider. In this case a sliding or flip phone design may be of interest to make it easier to answer or hang up a call.

Voice recognition is also a very useful feature that can help people with a visual impairment. This allows the user to use voice commands for dialling and accessing features on the phone.

Another feature is the ability to assign different ring tones to different numbers stored in the phone. Most phones have a raised dot on the number 5 to help you find your way around the keypad, as well as making a noise when you press keys. Others let you chose individual ringtones for different people. You can even set up voice-activated calling for your most popular numbers.

Look out for:

- Large, well spaced, keypad & raised keys
- Audio feedback
- Back-lit keypad
- Adjustable contrast
- Adjustable font size
- Large, clear, screen display
- Voice calling
- Profiles
- Audible battery indicator

2.9.4.2 Customers who are deaf or hard of hearing

For people with moderate to profound hearing loss using a telephone of any type can be a real challenge. Most mobile phones offer a range of features that can certainly make a noticeable difference to those with hearing difficulties, including:

- A range of visual alerts to notify the user of incoming calls/messages
- Adjustable volume control
- Display of missed, received or dialled calls through call logs
- Visual or tactile indicators showing what's been pressed on the keypad, and visual display of text
- Text based messaging options

Two-way video conferencing allows sign language to be used to communicate. This sort of facility depends heavily on the network speed and video capabilities (front camera is needed) of the phone. Other features that may be interest include hearing aid compatibility and Text phone/TTY compatibility for those using such services. As the quality, immunity and customization of hearing aids vary greatly, hearing aid wearers should definitely test different phones before buying to ensure that the particular model of phone is going to work well with their hearing aid.

Adjustable volume, vibrating alerts and the ability to send emails are very much standard features today. You can also use your phone to send & receive texts. Many models can also be used in conjunction with an induction loop.

Look out for:

- Vibrating alert or flashing
- Predictive text
- Tactile feedback
- Volume control
- Changeable ringtones
- Hearing loop
- WAP
- GPRS

2.9.4.3 Customers with limited dexterity or poor grip

For people with limited dexterity such as those with arthritis, operating the keypad or simply holding the phone can be difficult. For these people, the following features may be of interest:

- Ability to use the phone in handsfree mode
- Predictive text input that predicts the word and minimizes the number of key presses
- Any key answering which allows the call to be answered by pressing any key
- Voice recognition for dialling or accessing features within the phone
- Design where the controls of the phone do not require pinching, twisting or rotation of the wrist

Consideration may also be given to the shape of the device with a 'candy' bar design being more useful to avoid the extra movements that a phone with a folding or sliding design requires. A flat back on the phone can also be helpful to allow for operation on a table top rather than having to be held.

Optional accessories such as a Bluetooth headset or keyboard can also make life easier by making texting and talking much easier.

Many phones now have voice-activated calling for your most popular numbers, while a hands-free loudspeaker means you don't have to hold your phone while talking. Accessories such as belt clips and headsets keep your mobile ready for use whatever you're doing

Look out for:

- Voice calling
- Hands-free loudspeaker
- Lightweight
- Large, well spaced, keypad
- Recessed keys
- Tactile feedback
- Vibrating alert

- Shock/Water/Dust resistant casing

2.9.4.4 Speech impairment

People that have speech related accessibility needs will tend to rely on the text-based features of phones to help them communicate effectively. These options may include:

- Text Messaging/SMS (including making reusable sms'es)
- Email
- Instant Messaging
- Real-time texting
- Multi-media Messaging
- Predictive Text

2.9.4.5 Cognition

Ensuring menus and instructions are clear and simple to understand, providing simple instructions when something is required from the user and providing enough time for people to enter the required information are all features that most people will benefit from.

Another useful feature is the ability to associate photos with telephone numbers in the phones memory. Other features that may be useful include:

- Having a choice between audio, visual or vibrating alerts to let users know when they're receiving a call
- Keys provide audio, visual and tactile feedback when pressed
- Popular functions such as placing a call can be controlled by repeating pre-recorded voice commands
- Help menus designed to anticipate the information being sought
- Keypad shortcuts to make every step quick and efficient

2.9.4.6 *Mobile security*⁶

While the number of immediate threats to mobile devices remains relatively low in comparison to threats targeting PCs, there have been new developments in the field. And as malicious code for mobile begins to generate revenue for malware authors, there will be more threats created for these devices, especially as people increasingly use mobile devices for sensitive transactions such as online shopping and banking.

Security company Symantec has classified the types of threats into a variety of categories based on their functionality. The following are specific definitions of each subcategory:

- **Collects Device Data**—gathers information that is specific to the functionality of the device, such as IMEI, IMSI , operating system, and phone configuration data.
- **Spies on User**—intentionally gathers information from the device to keep monitor a user, such as phone logs and SMS messages, and sends them to a remote source.

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⁶ Based on

http://www.symantec.com/threatreport/topic.jsp?id=threat_activity_trends&aid=analysis_of_mobile_threats

- **Sends Premium SMS**—sends SMS messages to premium-rate numbers that are charged to the user's mobile account.
- **Downloader**—can download other risks on to the compromised device.
- **Back door**—opens a back door on the compromised device, allowing attackers to perform arbitrary actions.
- **Tracks Location**—gathers GPS information from the device specifically to track the user's location.
- **Modifies Settings**—changes configuration settings on the compromised device.
- **Spam**—sends spam email messages from the compromised device.
- **Steals Media**—sends media, such as pictures, to a remote source.
- **Elevates Privileges**—attempts to gain privileges beyond those laid out when installing the app bundled with the risk.
- **Banking Trojan**—monitors the device for banking transactions, gathering the sensitive details for further malicious actions.
- **SEO Poisoning**—periodically sends the phone's browser to predetermined URLs in order to boost search rankings.

Mobile applications ("apps") with malicious intentions rose to prominence in 2011, presenting serious risks to users of mobile devices. These metrics show the different functions that these bad mobile apps performed during the year. The data was compiled by analyzing the key functionality of malicious mobile apps. Symantec has identified five primary mobile risk types:

- **Collect Data.** Most common among bad mobile apps was the collection of data from the compromised device. This was typically done with the intent to carry out further malicious activities, in much the way an information-stealing Trojan might. This includes both device- and user-specific data, ranging from configuration data to banking details. This information can be used in a number of ways, but for the most part, it is fairly innocuous with IMEI⁸ and IMSI⁹ numbers, taken by attackers as a way to uniquely identify a device. More concerning is data gathered about the device software, such as operating system (OS) version or applications installed, to carry out further attacks (say, by exploiting a software vulnerability). Rarer, but of greatest concern is when user-specific data, such as banking details, is gathered in an attempt to make unauthorized transactions. While this category covers a broad range of data, the distinction between device and user data is given in more detail in the subcategories below.
- **Track User.** The next most common purpose was to track a user's personal behaviour and actions. These risks take data specifically to spy on the individual using the phone. This is done by gathering up various communication data, such as SMS messages and phone call logs, and sending them to another computer or device. In some instances they may even record phone calls. In other cases these risks track GPS coordinates, essentially keeping tabs on the location of the device (and their user) at any given time. Gathering pictures taken with the phone also falls into this category.
- **Send Content.** The third-largest group of risks is bad apps that send out content. These risks are different from the first two categories because their direct intent is to make money for the attacker. Most of these risks will send a text message to a premium SMS number, ultimately appearing on the mobile bill of the device's owner. Also within this category are

risks that can be used as email spam relays, controlled by the attackers and sending unwanted emails from addresses registered to the device. One threat in this category constantly sent HTTP requests in the hopes of bumping certain pages within search rankings.

- **Traditional Threats.** The fourth group contains more traditional threats, such as back doors and downloaders. Attackers seem keen to port these types of risks from PCs to mobile devices, and progress has been made in 2011.
- **Change Settings.** Finally there are a small number of risks that focus on making configuration changes. These types attempt to elevate privileges or simply modify various settings within the operating system. The goal for this final group seems to be to perform further actions on the compromised devices.

2.9.4.6.1 Viruses, Malware and Spyware⁷

The mobile developer professionals are stressing that common sense is often the best defence against malicious attacks - don't click on links in emails and only go to sites you trust. People tend to forget those advices.

The solution to this problem is simple. Software companies have developed antivirus software for mobiles and Smartphone's and the download is as simple as it would be on a PC. Here are some examples.

Lookout

Lookout is an Android virus protection software that scans every app on your smartphone and immediately alerts you of any mobile viruses, spyware or malware on your phone. The Android virus scanner remains vigilant by automatically scanning your smartphone – daily or weekly – at any time of day you request. In addition, the Lookout virus scan is constantly updated with the latest threat information.

AhnLab Mobile Security

AhnLab Mobile Security is a solution for viruses and worms protection that runs on Windows Mobile, Symbian and Palm OS.

BitDefender Mobile Security

BitDefender Mobile Security provides permanent antivirus protection for mobile devices running Symbian or Microsoft Windows Mobile. Relying on the valuable BitDefender experience in fighting computer threats, BitDefender Mobile Security is a light, easy to use instrument that will keep your mobile device on the move.

Kaspersky Mobile Security

Kaspersky Mobile Security is a complete protection package for the Smartphone. The package includes anti-theft protection, virus protection, firewall and anti-spam for SMS, EMS and MMS.

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⁷ <http://www.comptalks.com/top-10-mobile-antivirus-for-download-2010/>

Norton Smartphone Security

Norton Smartphone Security is a well known antivirus package which includes anti-spam and firewall for Smartphone protection. The package is offered by Symantec.

ESET Mobile Antivirus

A fully integrated real time protection package against any malicious attacks to your Smartphone. Its On-Demand Scanning includes scanning of principle memory and portable memory media, full memory and running processes scan. Specific folder scanning is also possible. Advanced On-Access protection offers effective scanning of all created/used files with enhanced virus detection capabilities and access time. Scanning of files incoming via wireless connections is covered (Bluetooth, Wi-Fi, Infrared). Like others it also provides SMS spam protection and a user friendly activity log.

Whatever mobile antivirus you go for, a few extra tips to protecting your phone is to never accept any content on Bluetooth if you do not know the sender. Be very cautious when installing third party softwares such as games, ringtones, wallpapers, or theme-packs.

2.9.4.6.2 5 Privacy Tips for Mobile App Users⁸

Look For Signs Of Trust

Check consumer reviews before you download an app. Users are quick to publicize bad experiences so you can typically find out if you're dealing with a "scammy" or "spammy" app by reading recent reviews of the app in your mobile app marketplace or store.

Read App Privacy Policy

An app should contain a privacy policy or link to an external policy – contact the app developer and request this information if they fail to include it. An app's privacy policy contains important disclosures, such as what information the app collects and how it uses that information. Some apps, for example, may access your contact information or notify your social contacts of your app use after asking you to sign-in using your existing email or social network log-in credentials. Activities like this are disclosed in an app's privacy policy so by reading it you can make informed decisions about sharing your personal information.

An app's privacy policy is typically found under the "Settings" or "About this App" tab, or as a link at the bottom of the app screen.

Review and Set App-Level Privacy Settings

Many mobile apps have privacy settings within the app itself, typically via a "Settings" or "Privacy" tab on the home screen or control panel. These settings can manage activities like whether the app can access your location information. Before using an app, review the privacy default settings on the app to make sure you agree with them.

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⁸ http://www.truste.com/why_TRUSTe_privacy_services/harris-mobile-survey/TRUSTe-Mobile-Survey-Consumer-Tips.pdf

Some apps engage in mobile ad targeting, collecting information about your online activity or using such information to deliver you targeted ads on your mobile phone. It may be possible to opt-out of targeted mobile advertising directly within the app privacy settings, but in some cases these opt-outs may only be available via the company's traditional website.

Review and Set OS-Level Privacy Settings

Most mobile operating systems (OS), including iOS (iPhone), Android, and Blackberry, offer privacy settings. By using OS privacy settings, for example, you can usually turn off the phone's ability to geo-locate you, thus denying all apps the ability to access your location data. You can also use these settings to create a password to access the phone, a smart idea if you have sensitive information stored on it that could be compromised in the event of phone theft or loss. If you're using the Android mobile OS, for example, you can find the phone's location privacy settings under the "Settings" menu option. Android users can deny or allow various location permissions on their phones, such as permitting wireless networks to detect their position or enabling GPS satellite location. iPhone users, via their OS privacy settings, can restrict or allow location data sharing on an app by app basis. For example, iPhone users might want to allow map and restaurant apps to access their location data, but restrict gaming apps from accessing this information.

Pay Attention to Pop-Up Notices

Many mobile apps may ask to show you pop-up alerts or will display them by default. Usually, these pop-ups are about app updates or activity (such as a friend request), but sometimes you'll see privacy pop-ups, like a pop-up requesting your location data. It's worth taking five seconds to read these short notices before clicking "accept" or "ok". Also, if you turn off an app's notifications, be aware that you may disable privacy-related pop-up notices as well.

2.9.5 Communication software

Almost all mobile smartphones and tablets have the ability to use the communication software mentioned in the previous section (2.8 Communication Software), therefore the use of Skype, MSN and Google Talk is similar and follows the principles described. In the following paragraphs we will make a quick review of the installation and use of the two main communication applications, Skype and Google Talk. The User Interface in both cases is almost the same and the experience of the User in handling the applications in a desktop / laptop environment or a smartphone / tablet has minor differences.

2.9.5.1 Skype

For Android OS, we use the mobile app repository, Google Play, to search and find Skype for Android. For other mobile operating systems download and installation is also possible through the official website of Skype (Symbian, Windows, IOS, etc. <http://www.skype.com/intl/en-us/get-skype/>).

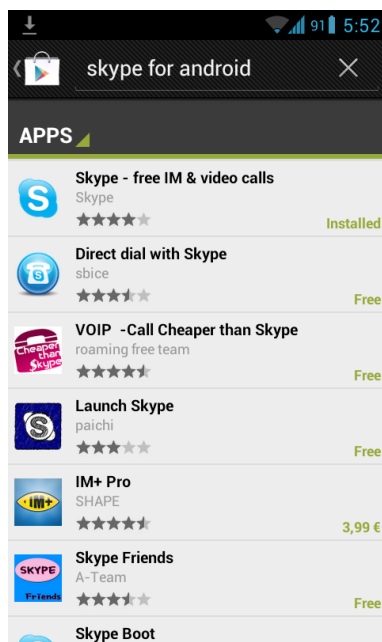


Figure 205: Finding Skype app in Google Play

We select the app, by tapping on the relevant icon, and select to install it.



Figure 206: Skype installation process in Android

At the next prompt, we select the “download and install”.

When the installation process is completed, we select “Open”. We assume at this point that the User will have an existing Skype account used with his / her desktop or laptop (otherwise the user may

follow the steps of creating one through the mobile app) and a working wifi or data connection. The user enters the login credentials to the relevant input fields, and the application connects to the Skype service

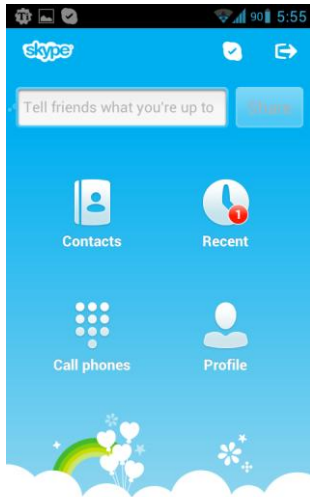


Figure 207: User has logged-in to his / her Skype account through the smartphone

The User can then open the contacts (the same ones existing on his / her desktop Skype installation), select one or more contacts in order to start a chat or a voice call, or a video call, or transfer a file.

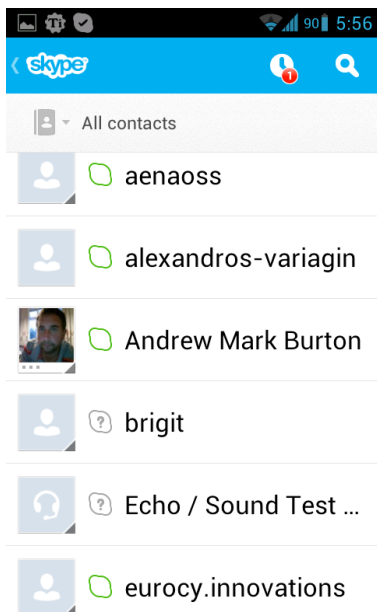


Figure 208: Contact list on Skype installed on an Android smartphone

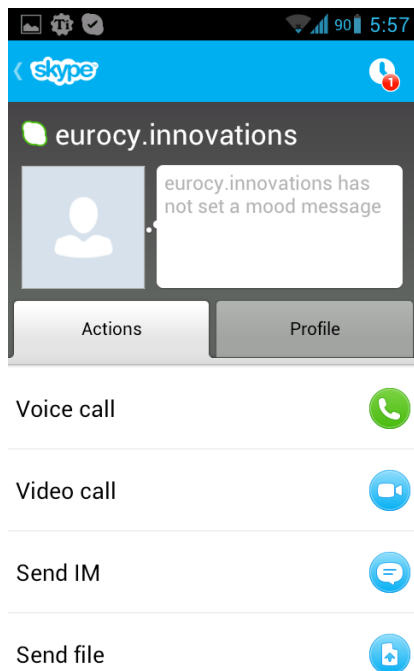


Figure 209: The User has selected a contact to communicate (Voice / Video call or Chat or by sending a file)

2.9.5.2 Google Talk

Google Talk (GTalk) is an embedded application to all Android smartphones, but can also be downloaded and installed to devices with other operating systems (Windows mobile, blackberry, etc.) With Google Talk, we can do the following:

- Text chat
- Voice chat
- Video chat

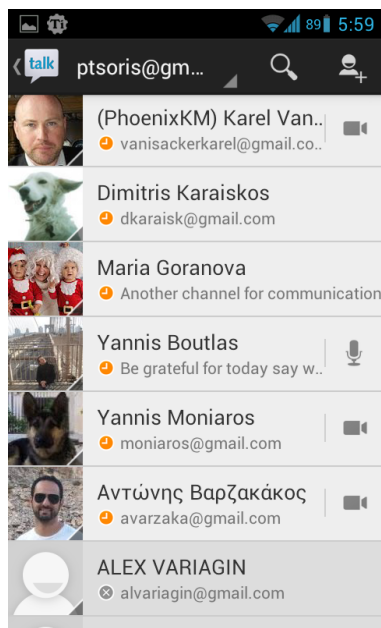


Figure 210: Contact list of a Google Talk installation on an Android smartphone

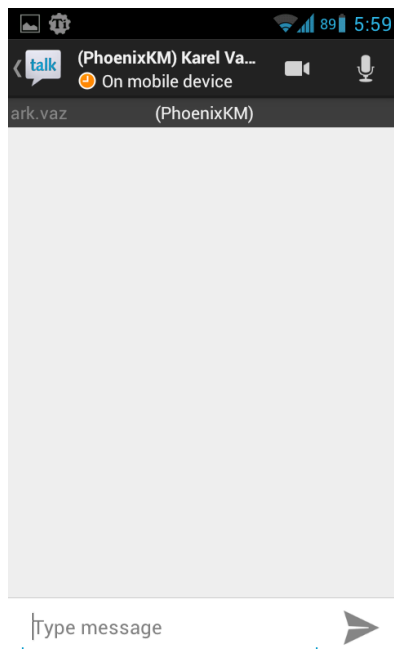


Figure 211: Text chat (IM) with a contact via Google Talk. (Video and Audio chat is also available)

2.9.5.3 Gestures

These days, the use of a contemporary smartphone or tablet device provides convenient and hassle-free ways of operating trivial tasks, such as browsing, searching, writing and reading to and from our apparatus. Smart phone users have focused a lot on the voice-oriented operation and control of their phone by interacting through Google's Voice Actions and Vlingo. But talking to a high-tech device isn't always a practical option, especially when the user has a disability.

Touch screens are a great way to interact with applications on mobile devices, where users can easily tap, drag, interactively zoom-in/out, or slide the screen, quickly performing specialised actions in their favourite applications. Gestures are a common feature in touch or multi-touch screens and hence are commonly used in smartphones and tablets. This subject was analysed in a previous section (2.2.3) but here we are going to make a review and a specific reference to Android gestures for version 4.0.x of the OS.

Gestures allow users to interact with your app by manipulating the screen objects provided. The following table shows the core gesture set that is supported in Android 4.0.x.

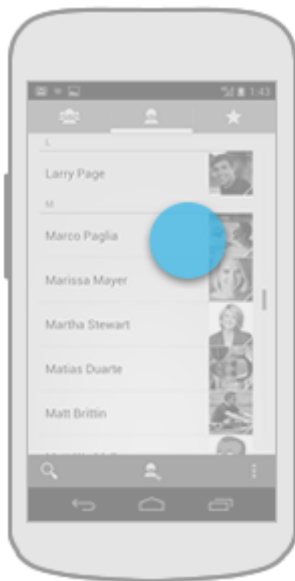


Figure 212: Touch gesture

Touch gesture - Triggers the default functionality for a given item.

Action: Press, lift



Figure 213: Long press gesture

Long press gesture - Enters data selection mode. Allows you to select one or more items in a view and act upon the data using a contextual action bar. Avoid using long press for showing contextual menus.

Action: Press, wait, lift



Figure 214: Swipe gesture

Swipe gesture - Scrolls overflowing content, or navigates between views in the same hierarchy.
Action: Press, move, lift



Figure 215: Drag gesture

Drag gesture - Rearranges data within a view, or moves data into a container (e.g. folders on Home Screen).

Action: Long press, move, lift



Figure 216: Double touch gesture

Double touch gesture - Zooms into content. Also used as a secondary gesture for text selection.
Action: Two touches in quick succession



Figure 217: Pinch open gesture

Pinch open gesture - Zooms into content.
Action: 2-finger press, move outwards, lift



Figure 218: Pinch close gesture

Pinch close gesture - Zooms out of content.
Action: 2-finger press, move inwards, lift

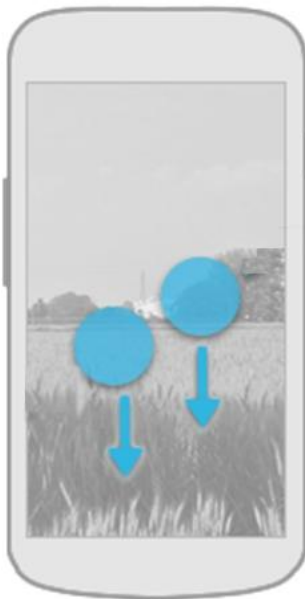


Figure 219: Two finger scroll gesture

Two finger scroll gesture - Scrolls content up / down.
Action: 2-finger press, move up / down, lift

2.9.5.4 QR Codes

QR code is the trademark for a type of matrix barcode (two-dimensional code) first designed for the automotive industry.



Figure 220: QR code paradigm

More recently, the system has become popular outside the industry due to its fast readability and large storage capacity compared to standard linear barcodes. The code consists of black modules (square dots) arranged in a square pattern on a white background. The information encoded can be made up of four standardised kinds ("modes") of data (numeric, alphanumeric, byte/binary, Kanji), or through supported extensions, virtually any kind of data.

QR codes in ICT are used for several occasions such as: to create website links, store phone numbers, email ids, direction, etc. QR Codes can be used in Google's mobile Android operating system via Google Goggles application or 3rd party barcode scanners like ZXing. The browser supports URI redirection, which allows QR Codes to send metadata to existing applications on the device. Nokia's Symbian operating system features a barcode scanner which can read QR Codes. For Apple iOS, a QR Code reader is not natively supported, but there are numerous paid and free apps available with both scanning capabilities and hard-linking to URI. BlackBerry devices with the App World application, have the ability to natively scan QR Codes and load any recognized Web URLs on the device's Web browser. Windows Phone 7.5 is able to scan QR Codes through the Bing search app.

2.10 Accessible ICT: What Is There For Me?

Using ICT is one thing, but what if I have a disability that necessitates me to use supportive technology to make adequate usage of ICT?

Following sections provide a concise overview of relevant initiatives that might be of interest to people with disabilities.

2.10.1 Europe

Assistive Technologies related projects and initiatives:

- ATLEC project - www.atlec-project.eu: This project aims to create an AT ICT curriculum, focused towards people with disabilities to empower them in becoming more aware about relevant ICT based assistive technologies that can help them in gain and or maintain employment.
- EASTIN Network - www.eastin-cl.eu/eastin: EASTIN is a European network that offers information on assistive technology to all citizens. It is the most comprehensive web-service in Europe on assistive technology, due to the joint effort of the partners in the EASTIN project and to the European Commission which initially financed part of the work. The core of the network is the EASTIN website www.eastin.info. This website provides, in all official languages of the European Union, and in a user-friendly and accessible manner, a complete



set of information and guidance tools concerning assistive technology. It includes information on over 50.000 assistive technology products available on the European market and over 5.000 manufacturers / suppliers; it also includes related info such as fact sheets and suggestions on assistive solutions for daily living problems.

- Oatsoft - www.oatsoft.org: OATSoft is dedicated to improving Assistive Technology and computer accessibility through the power of Open Source development techniques. OATSoft makes the best Open Source Assistive Technology Software (OATS) easy to find.

2.10.2 Belgium

Assistive technologies:

- ICTwijs - <http://www.ictwijs.eu/index.cfm?ee=2|262>
- Steunpunt Dyslexie - <http://www.steunpuntdyslexie.nl/dyslexie-op-school/aanpassingen-en-hulpmiddelen/>
- Center for Assistive Technology - Coaching in Hulpmiddelen - <http://www.cat-ch.eu/Wat%20bieden%20we/Wat%20bieden%20we.html>
- Dyslexiewegwijzer - <http://www.dyslexiewegwijzer.nl/cms/ict-hulpmiddelen.html>
- Instituut Samenleving en Technologie (till 2013) - <http://www.samenlevingentechnologie.be/ists/index.html>
- ICT en Handicap - http://www.ictenhandicap.nl/ondersteunde_communicatie.htm

Advisory organisations:

- Toegankelijkheidsbureau - <http://www.toegankelijkheidsbureau.be>
- Enter vzw – <http://www.entervzw.be>
- Westkans vzw – <http://www.westkans.be>
- Werkgroep Vorming & Actie - <http://www.wvavzw.be/>

Belgian computer- and internet organisations for blind and visual impaired:

- AnySurfer - <http://www.anysurfer.be/>, <http://www.toegankelijkheidsmonitor.be/>
- Computeracademie vzw – Vigita ICT-projects - <http://www.computeracademie.be/vigita/>
- GOCI vzw - <http://www.goci.be/>
- ICTwijs - <http://www.ictwijs.be/>
- Infovisie vzw - <http://www.infovisie.be/>
- MODEM Communicatie- en Computercentrum - <http://www.modemadvies.be/>
- Open IT - <http://www.openit.nu/>
- Webbra - <http://www.webbra.be/>
- Centre de Ressources et d'Evaluation de Technologies pour les personnes Handicapées (CREH) - <http://www.fundp.ac.be/medecine>
- La Place des Ados - <http://www.ados.ciger.be/index.html>
- Axistive - <http://www.axistive.com/>
- Blinden en slechtzienden - <http://www.facebook.com/pages/Blinden-en-slechtzienden/168310585097>
- TReyeIT - Uitleendienst van geavanceerde hulpmiddelen voor personen met een visusbeperking - <http://www.treyeit.be>
- GOCI vzw - <http://www.goci.be/>
- Sclera vzw – <http://www.sclera.be>
- Luisterpuntbibliotheek - <http://www.luisterpuntbibliotheek.be/>
- Kamelego - <http://www.kamelego.be/>
- SPK vzw – Digidak - <http://www.digidak.be/>

- Ithaka vzw – <http://www.vzw-ithaka.be>
- Flemish Disability Agency VAPH, Brussels - <http://www.vaph.be/vlafo/view/nl/10525-Hulpmiddelen.html>

2.10.3 Cyprus

Education and other training centres for basic ICT skills

- Christos Steliou Joannou Foundation (www.ioannoufoundation.org)
- Deaf School Cyprus (<http://agrino.org/deafschooldcy/>)
- School for the Blinds (<http://eid-scholi-tyflon-lef.schools.ac.cy>)
- Cyprus Private Training Centers Association (<http://www.sifk.org.cy/>)
- Epiteygma-ICT Training Center for PwDs (<http://www.epiteugma.com/>)
- G.E. English Center (<http://ge-centre.com/>)
- New hope Private Special & Tutorial Schools (<http://www.newhope.com.cy/>)
- MK Prosopsis CYPRUS ASSISTIVE TECHNOLOGY - special education Cyprus (<http://www.mkprosopsis.com/>)
- S.E.S and ICTEACH, CYPRUS (www.icteach.org/)
- Cybernet Training Centers (www.cybernet.ac.cy)
- eduCyber (<http://www.educyber.com/>)
- Futurekids (www.futurekidscyprus.com)
- CompuSuccess (<http://www.compusuccess.net/>)

2.10.4 Greece

- Open source and freeware accessibility and assistive software:
<http://access.uoa.gr/fs/eng/pages/home>

2.10.5 Lithuania

- Baltijos Kompiuteriu Akademija - <http://moodle.bka.lt/> - Basic ICT training resources

2.10.6 UK (English language resources)

Basic ICT Training

- ALISON <http://alison.com/course/category.php?id=1> “Whether you are new to computing or have some experience, this curriculum will help you develop a fundamental understanding of computers. The courses help you learn the essential skills to begin computing with confidence, be more productive at home and at work, stay safe online, use technology to complement your lifestyle, and consider careers where you can put your skills to work.”
- BBC WebWise - <http://www.bbc.co.uk/webwise/courses/computer-basics> - A set of learning objects consisting of a mix of interactive video and games and text based documents. Inaccessible to non-mouse users. Topics include: Your computer, using the web, email and sharing, safety and privacy.
- BBC Raw <http://www.bbc.co.uk/raw/computers/yourcomputer/index.shtml> Provides a further set of BBC computer training resources including computer basics, the mouse, the keyboard, icons and windows, music and photos, printing, internet basics, internet browsers, searching the internet, registering a website, shopping online and using email.
- ECDL (The European Computer Driving License) - <http://www.homeandlearn.co.uk/BC/ecdl.html>
- Excellence gateway - <http://www.excellencegateway.org.uk/> A portal of submitted learning resources from the Learning and Skills Improvement Service (LSIS). It gives you access to the

most comprehensive collection of information and resources, networks and development opportunities, brought together specifically for the further education and skills sector.

- FreeEd.net The Free Education Network - http://www.free-ed.net/free-ed/Navigation/Level01/Level02/02_CompInfoTech/02_Comp_InfoCommTech.asp A collection of online courses – including introductions to coding in several languages
- Goodwill Community Foundation - <http://www.gcflearnfree.org/computers> - A suite of free resources to teach a number of topics including computer basics, internet basics, email basics, social media basics, Google, Microsoft Office, Windows, Apple Mac OSX, Google Docs, Microsoft Word, Microsoft Excel, Microsoft Powerpoint, Microsoft Access, and OpenOffice.
- Home and Learn, free computer tutorials - <http://www.homeandlearn.co.uk/BC/BeginnersComputing.html>
- Microsoft Digital Literacy resources – A free basic ICT curriculum developed by Microsoft <http://www.microsoft.com/About/CorporateCitizenship/Citizenship/giving/programs/UP/digital literacy/eng/default.msp>
- Priory Woods School and Arts College provides a number of free game resources to develop skills in ICT literacy and maths. These resources are aimed at users with intellectual disability. http://www.priorywoods.middlesbrough.sch.uk/page_viewer.asp?page=Free+Program+Resources&pid=161
- ViPi at <http://www.vipi-project.eu/> – Accessible ICT training resources for people with disabilities
- CBeebies – the BBC provides some switch accessible games on its CBeebies website. <http://www.bbc.co.uk/cbeebies/games/theme/switch/>

Assistive Technologies:

- ACE Centre at <http://www.ace-centre.org.uk> initiative on communication devices – bumblebee
- BBC _ My Web My Way <http://www.bbc.co.uk/accessibility/guides/> - A number of guides to assist people with disabilities to access information online.
- Teach-ICT presents a list of recent news articles relevant to the use of ICT by people with Disabilities. http://www.teach-ict.com/news/news_stories/news_disability_and_ict.htm
- A list of Assistive Technology Resource Centre which may provide useful tutorials, software reviews etc. <http://webtoolboxes.wikispaces.com/AT>

2.11 Safety and Security

The Internet has so many advantages and potentials that outweigh possible risks. Even so, Internet users should be aware of these risks and know how to eliminate them. To emphasize on the criticality of the subject, you should know that even the Governments themselves realize the need to protect their citizens from risks and danger while surfing on the Internet. Therefore, dedicated Internet Centers are being established in each country, with the aim to promote the safer use of the Internet. You may find the Web site to the respective Center in your country, in Table 18. Through these Websites you can report any illegal or annoying content that you might come across on the Internet simply by clicking on dedicated links in the first page in their Web site and filling in forms. In addition, helplines are provided where you can ask for help (through chat, email, phone) about problems that you may face while using the Internet.

Specific information about how to configure and use your computer and respective software, are discussed in the following subsections.

2.11.1 Operating System (OS) and software updates

Operating systems are the most important type of software on a computer since they are responsible for starting the computer and allowing users to install and run all other software tools. As such, protecting the operating system from malware (malicious software) or other risks is the most crucial part in system security.

The first step is to make sure that you install the current OS updates. These updates are offered by the OS creator and, as the name suggests, they keep the system up to date by fixing any detected vulnerabilities. As an example, we shall illustrate how to install these updates on the Windows 7 operating system and how to configure the OS to install them automatically.

From the start  button on your computer's desktop, write "Windows Update" in the search box, wait for the option to appear (as in the figure below) and then click on its name (Figure 221).

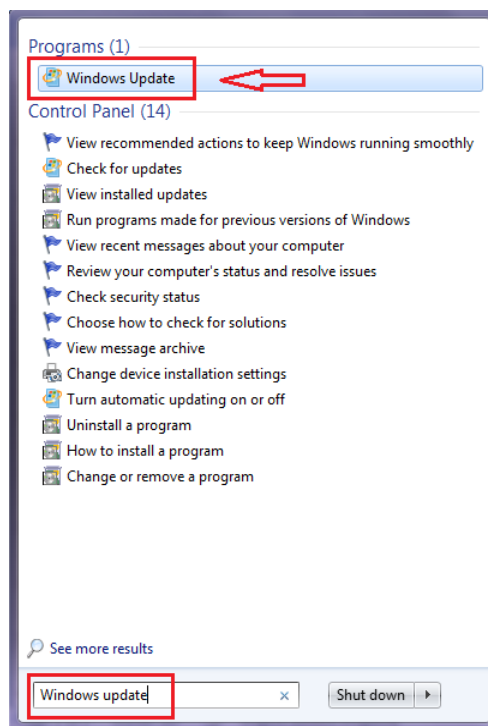


Figure 221: Using the start panel to launch the Windows Update tool

The main window of the Windows update software tool will appear (Figure 222) and in case there are available updates for the OS that are not already installed on your computer, it will display the amount and their size:



Figure 222: The main window of the Windows Update tool, displaying available updates

Otherwise a message will indicate that your system is up to date (Figure 223):

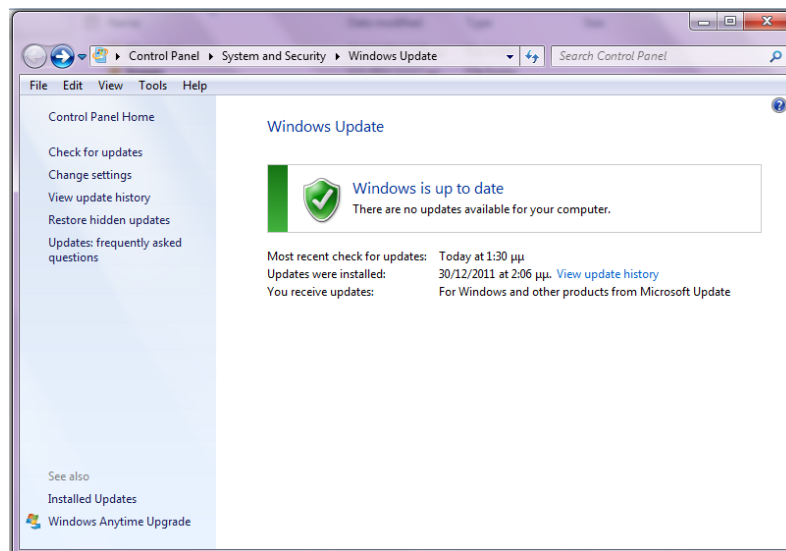


Figure 223: The main window of the Windows Update tool, displaying a message that indicates up to date system

In case your OS is configured to provide updates' notifications, when updates are available a notification icon (and a balloon) will appear at the bottom right of your screen (Figure 224):

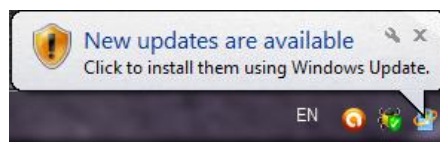


Figure 224: Notification about availability of new updates at the bottom-right of the screen

You can launch the Windows update tool by double clicking on the icon (or the balloon), an alternative way to the one described above. Either way, you will be transferred to the main window and you will have to select the updates to be installed. Click on the blue text indicating the available number of updates (Figure 225):

3 important updates are
available

Figure 225: Text indicating the available number of updates

Then select the updates for installation by ticking their box and click OK (Figure 226). Usually it is recommended to install all the updates in the list as some are required by other programs e.g. MS Word, to work properly.

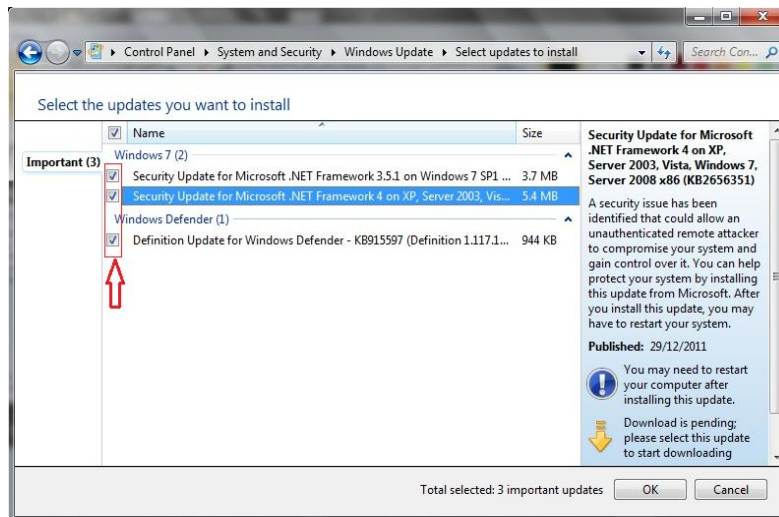


Figure 226: Selecting the updates which you wish to install and clicking ok to start the process

Finally select the **Install updates** button to start the downloading and installation procedure. When the process is completed the main window will change to green status indicating the successful installation of updates (Figure 227).

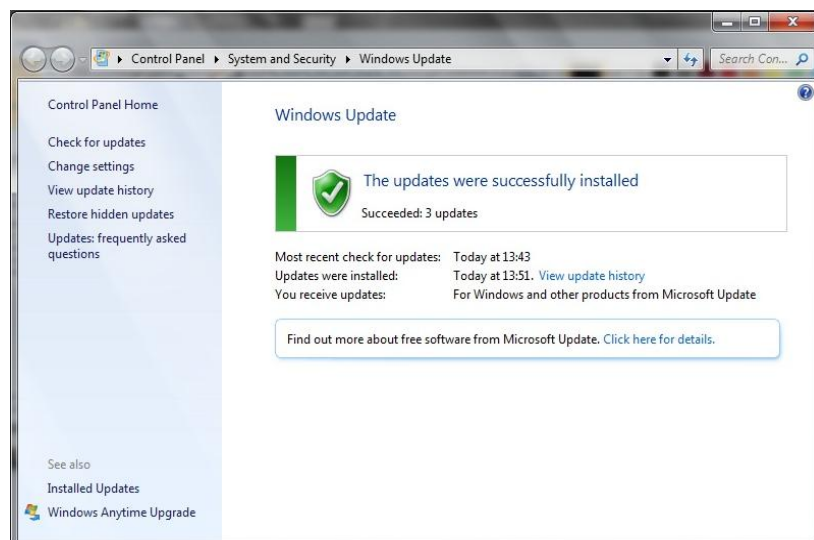


Figure 227: Indication of successful installation of updates, as soon as this is finished

There are cases where some updates require a restart of your computer in order to complete their installation. You can restart your computer either immediately or at a later stage, however make

sure that you do not disconnect the power supply in order not to disturb the update process. You also have the option to configure updates to be automatically installed. To do so, select the “Change settings” option from the left list, choose the “Install updates automatically” option and select OK.

2.11.2 Antivirus Programs

Another important category of software tools for system security are the antivirus programs. These programs scan your files and the data downloaded from the Internet (or from other sources), detect any malware (malicious software) and provide proper notifications and actions to avoid damaging your computer. There are many proprietary antivirus tools which you can buy from the software market (either via the Internet or from shops). Currently there are many free antivirus programs on the Internet. Table 17 gives a list with the most popular ones and their websites:

Table 17: List of the most popular Antivirus software tools

Antivirus	Logo	Website
Avast! Free Antivirus		http://www.avast.com/free-antivirus-download
AVG Anti-Virus Free		http://free.avg.com/
Microsoft Security Essentials		http://windows.microsoft.com/mse
Avira AntiVir Personal		http://www.avira.com/en/avira-free-antivirus

We use the Avast! free edition as example to illustrate basic functions, how to protect your computer and your data from viruses. All the programs mentioned above provide similar functionality and it is up to the user to choose which one to use.

Antivirus programs once installed are default always active, but without interrupting the user. They run in the background and scan every file you open or receive/download from the Internet.

There are a lot of potential viruses (one type of malware) sources which you must be aware of. The first one is downloading files from the Internet. The most dangerous file-type is the one used for files able to start a process on your computer, called executables (ending in .exe). As a result you must only open executables downloaded from trustworthy sites. Email is another common source of virus infections. Attachments may contain a virus, so if you are not sure of their source/sender avoid opening them. Also removable media such as flash drives and CDs are a potential virus source and should be scanned before opening as we explain in the following.

You can launch the antivirus tool from the desktop or from the start panel but you can also launch it by double clicking on its task bar icon on the bottom right of the screen (Figure 228).



Figure 228: The icon of the Antivirus software on the task bar

The main screen of the tool reports your antivirus status. Most antivirus tools download and install automatically updated lists with all detected and known viruses (known as definitions). However, there exist cases when this is not done automatically, if not configured so. Therefore, it is recommended to update them before scanning your computer. To do so locate and select your antivirus tool's "Maintenance" or "Update" option (Figure 229):

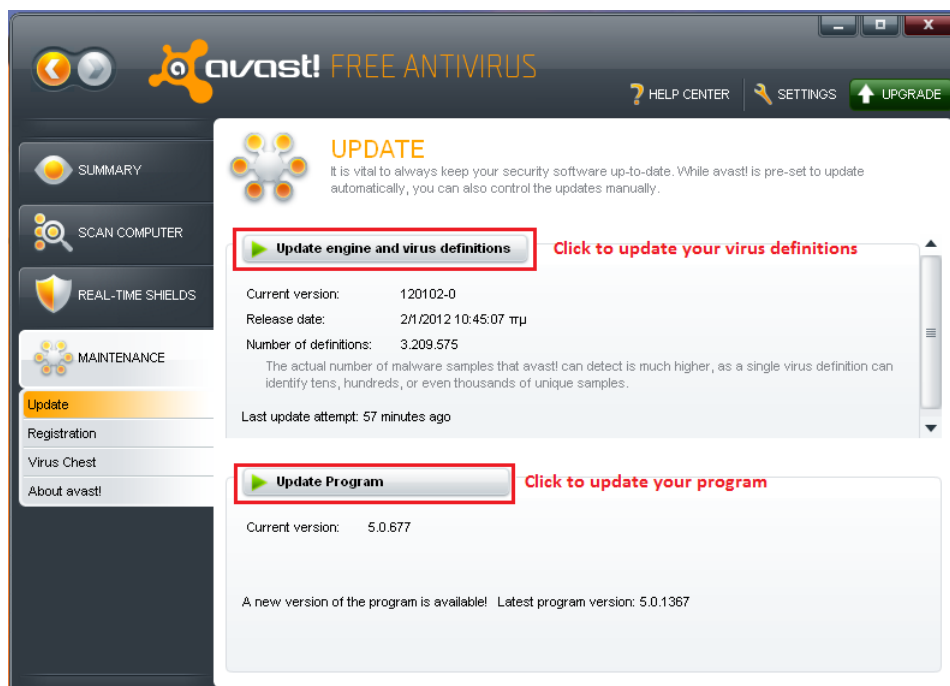


Figure 229: The maintenance window of the avast! Antivirus software tool

To scan your computer, locate the "Scan" option (Figure 230) where you might be given options about the scan you would like to perform with descriptions for their purpose:

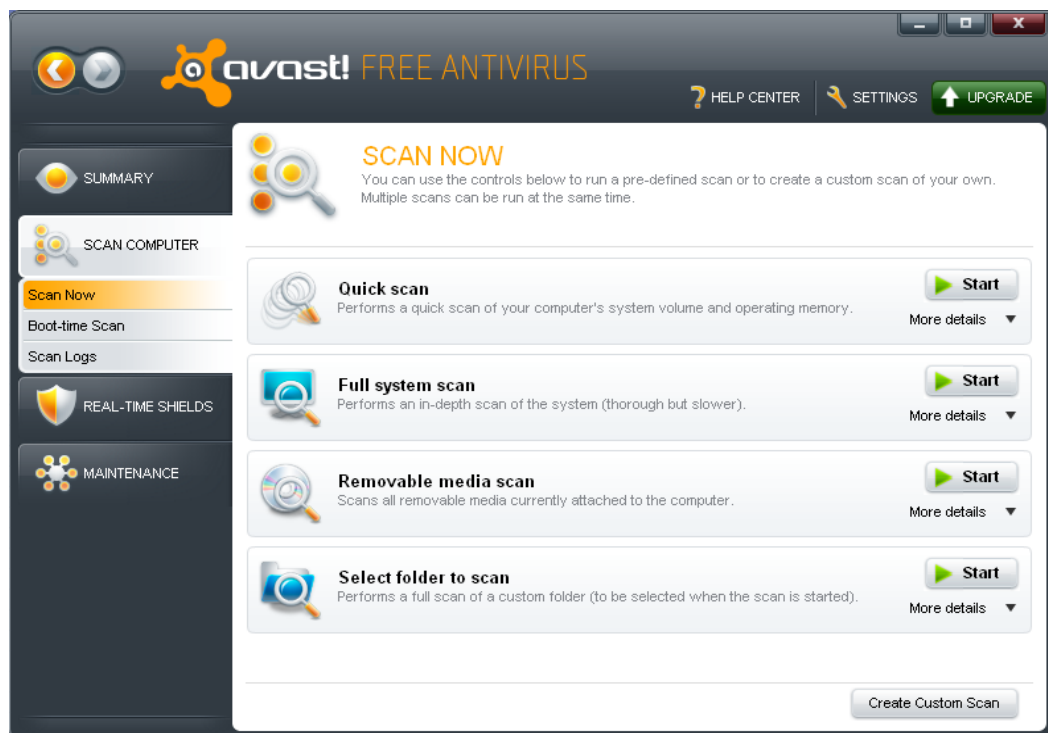


Figure 230: The Scan option from the avast antivirus main window

If you would like to scan a group of files and folders (or a single file), select them and right click on an item from the group. Then from the pop up screen (Figure 231), select the “Scan with ....” (where you will see your antivirus’ program name) or the text “Scan filename.type”.

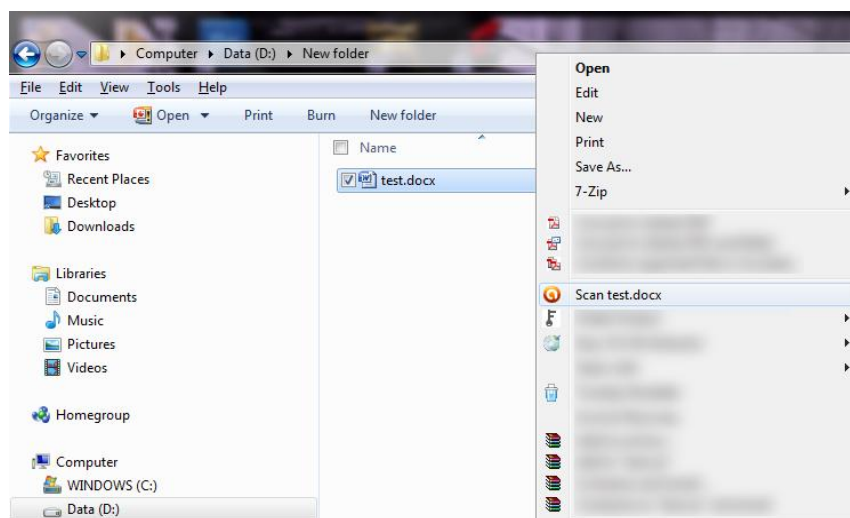


Figure 231: Selecting a single file in your local file system and choosing to scan it by right-clicking

2.11.3 Personal Firewalls

An additional protection measure against Internet’s dangers is a personal firewall. Personal firewall is a software tool that checks what kind of data your computer sends and receives and blocks potentially dangerous traffic (sent and/or received data). Again, there are plenty of free firewalls

available online and Windows 7 also has its own firewall installed together with the OS. To check if it is currently active, from the start panel , search for the “Windows firewall” (Figure 232).

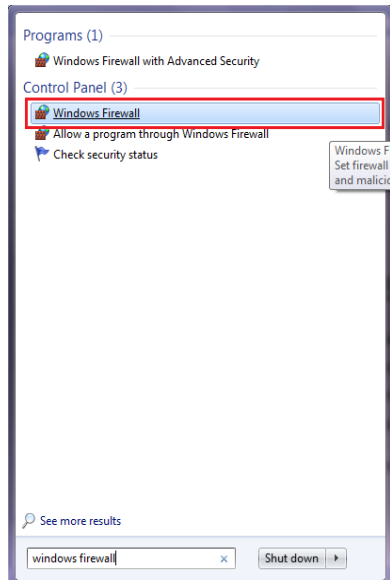


Figure 232: Finding the Windows Firewall tool from the Start panel

If the firewall statuses are both green then the firewall is ON, as shown in Figure 233 below:

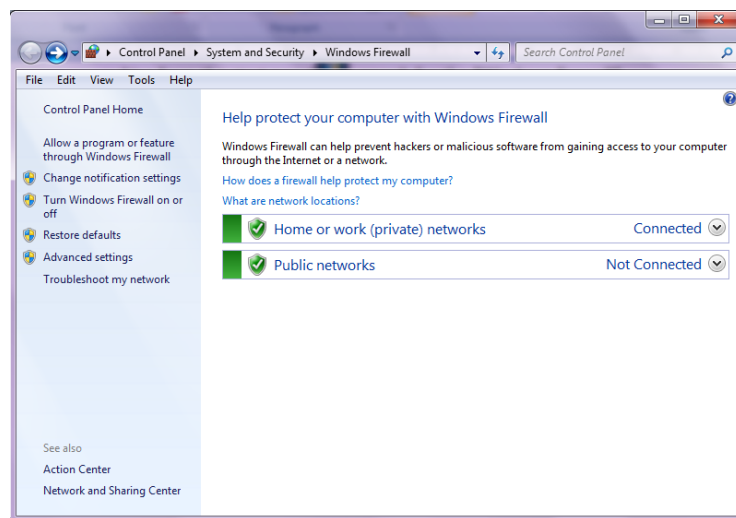


Figure 233: Window showing the status of the firewall as ON

If they are red, click on the “Use recommended settings” to enable the firewall protection (Figure 234):

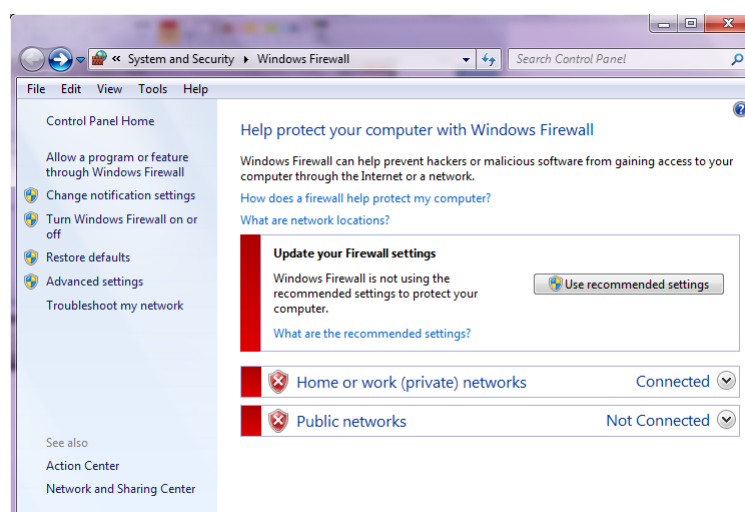


Figure 234: Window showing the status of the firewall as OFF and providing options to update it and set it up

Firewall tools, like antivirus tools, work silently in the background and take care of the system's protection to prevent any unwanted infections (traffic of malicious files or data from/to your computer).

2.11.4 Web security

As mentioned earlier in Section 2, there are some basic prerequisites to consider for a pleasant and safe web experience. Critical and sensitive information is transferred every second over the Internet. If this information is not protected, it would be exposed to anyone who would attempt to steal it. As a result, the connection between a user and a Web page, when sensitive information is exchanged, should be encrypted and secured. This encryption is even more necessary when personal details, for example passwords and credit card numbers are among the information exchanged. By encryption, it is ensured that when information is transferred through the Internet, anyone that intervenes in the communication channel, will not understand its content. On the other hand, the correct receiver has the proper keys to decrypt and understand the information. To find out more about encryption and how to recognise encrypted websites please refer to *Section 2 → Web security*. Then you may read further in this section where the issues of security and safety in Internet usage are analysed in more depth.

2.11.4.1 Safe online search

When searching for information on the Internet, a user may come across irrelevant but offensive content due to the fact that everyone is free to post information online. Fortunately, search engines are aware of this and have taken measures to protect their users by introducing the *Safe Search* option. This option acts like a smart filter that checks the results before the users access them and blocks any offensive content from reaching the final set of results. Usually this feature is enabled by default but in the following we illustrate how to enable/disable it.

For Google.com you will need to click on the gear symbol on the top right and select "search settings". Then depending on how much you want your results to be filtered, move the slider to the correct position and **click save** at the bottom of the page (Figure 235).

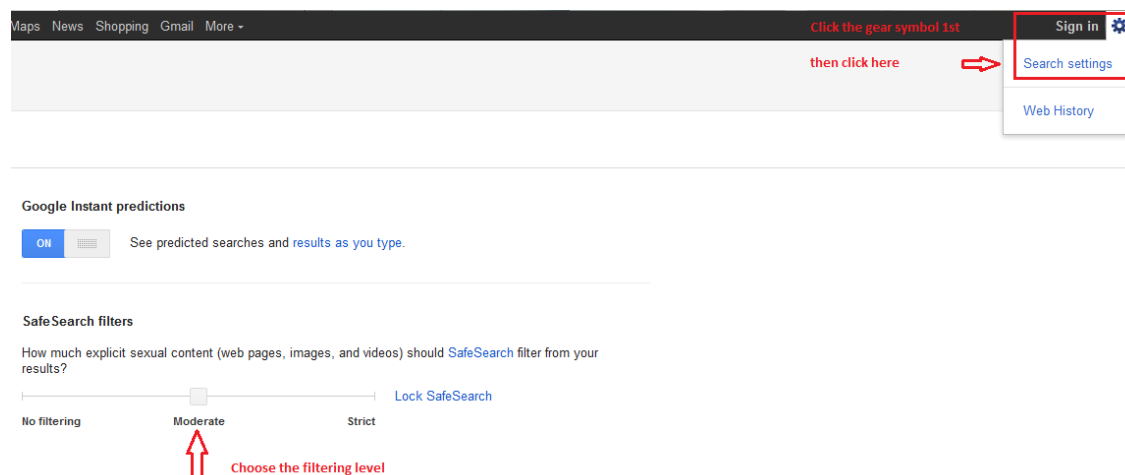


Figure 235: Defining the search settings and the level of desired filtering of results for protection reasons, in Google

For the Bing search engine the process is quite similar. Click on the link Preferences on the top-right corner of the page, then select the protection level from the list appearing on the page and finally click on the Save button on the right (Figure 236).

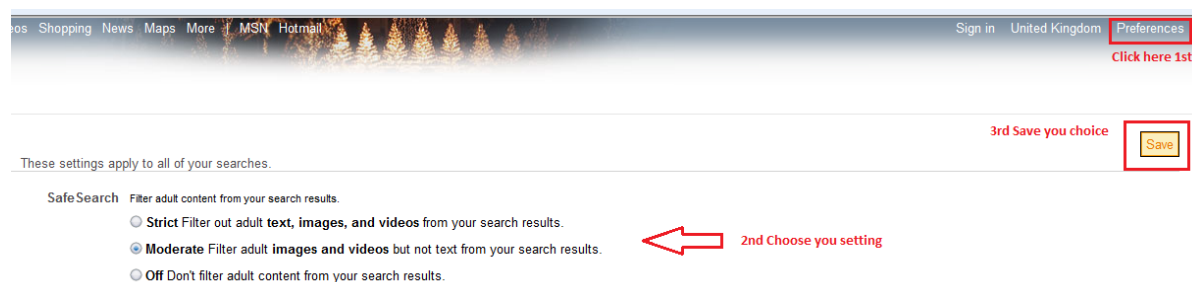


Figure 236: Defining the search settings and the level of desired filtering of results for protection reasons, in Bing

2.11.4.2 Important rules for secure Internet use

In course 2 *Web browsing and security*, an introduction was provided to the kind of malware (malicious software) that exists. In this course we illustrated how to use an antivirus and a firewall to protect your computer from infections. In the following we shall revise some important rules to keep in mind while surfing the web. The list is non-exhaustive; however, it covers the most important aspects.

- ✓ Do not visit websites whose reliability you are not sure of.
- ✓ Avoid clicking on pop up advertisements that might ask you for personal information to win a price, participate in a lottery, etc.
- ✓ Never download files from websites whose purpose you do not know
- ✓ Always look for the secure connection indicator before entering sensitive information like passwords or credit card details.
- ✓ If the website does not use encrypted connection and you are not sure, do not enter any details to avoid unwanted access to your personal details.
- ✓ Be very careful when you share personal pictures.

- ✓ When people unknown to you try to contact you by email or by friend requests you must be sure to know them before you reply.
- ✓ Avoid opening emails and messages from people unknown to you.

2.11.5 More security settings

Many websites try to draw your attention by opening new advertisement windows while browsing their content. This technique, also called “pop up advertising”, sometimes might hide potential risks such as viruses or spoofing websites. At some occasions, offensive content may pop up as well. In order to avoid all these, modern web browsers offer built-in pop up prevention.

To enable the pop up blocker in e.g. Internet Explorer 9, select Tools→Pop-up Blocker→Turn on Pop-up Blocker (Figure 237).

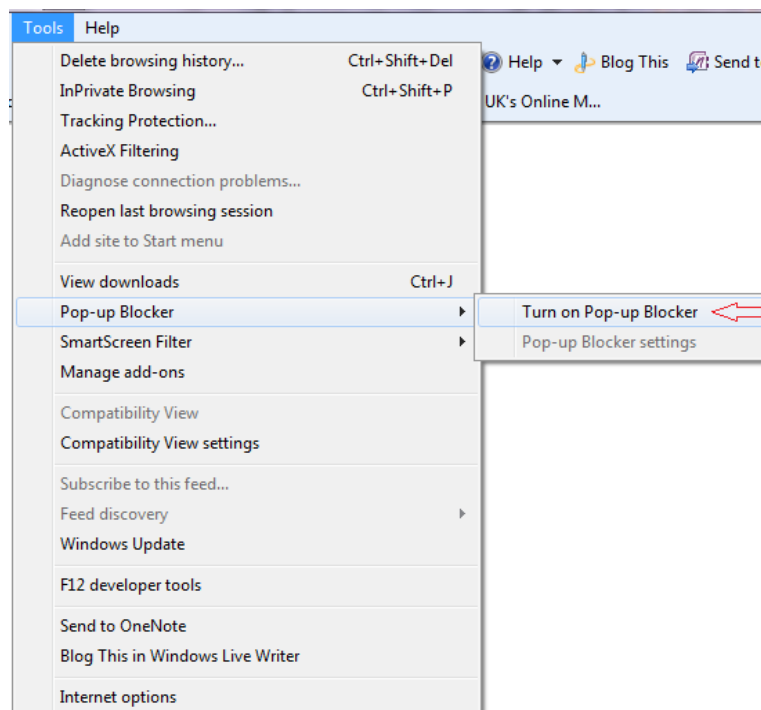


Figure 237: Enabling the Pop-up blocker in Internet Explorer 9

In addition, in case you do not want the browser to store visited pages and other data, (in case, for instance the computer that you using is at an Internet café), you can use a privacy mode to prevent unwanted intrusion. This mode is known as “InPrivate browsing” for Internet Explorer 9 (or Private Browsing for Mozilla Firefox and Incognito mode for Google Chrome) and can be launched by selecting Tools→InPrivate Browsing (Figure 238).

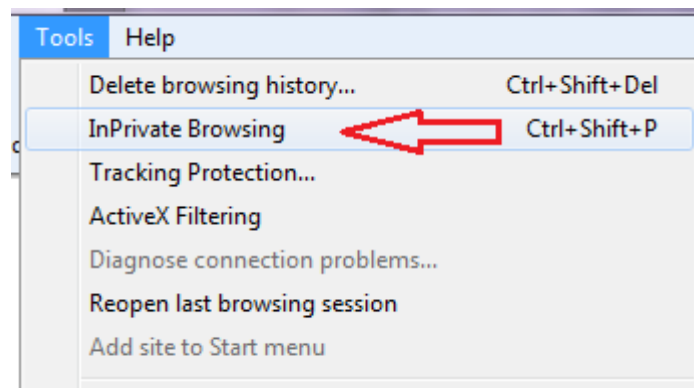


Figure 238: Selecting the option InPrivate Browsing in Internet Explorer 9

The new window (Figure 239) will have an indicator in the address bar, to indicate that you are using a private session that does not store anything:

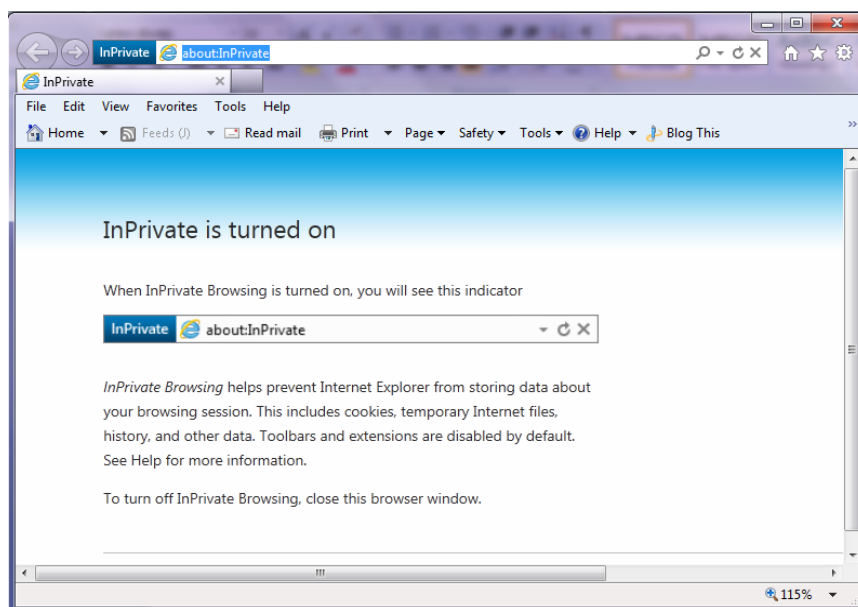


Figure 239: Window confirming that the InPrivate Browsing option is turned on

2.11.6 Illegal content

While surfing the Internet you might come across different types of data whose distribution is illegal. For example, a website that offers free downloading of a song that normally is sold at music stores. The illegal downloading of songs without the permission of the original author is known as music piracy. Moreover, Web piracy extends to other types of media such as movies and software. The distribution of these files is prohibited by law and there are cases where people faced justice and got severe financial penalties. As such, before downloading software and media, you have to be sure that their distribution is not illegal and if you think it is, you can report them to your country's organisation against web piracy.

Table 18, below provides a non-exhaustive list with some countries and the websites of the dedicated authorities, with more information on protecting yourself and reporting illegal content:

Table 18: Non-exhaustive list of websites of authorities acting for cyber security in different countries

Country	Website
Belgium	http://www.saferinternet.be/ http://www.clicksafe.be/
United Kingdom	http://www.saferinternet.org.uk/ http://www.getsafeonline.org/
Greece	http://www.saferinternet.gr
Cyprus	http://www.cyberethics.info/cyethics1/
Lithuania	http://www.draugiskasinternetas.lt/lt

2.11.7 Social Networking

In course 2-*Web Browser and security* we introduced the concept of a social network and provided some examples. In this course we illustrate common security and privacy settings to avoid unwanted access to your pictures, account etc. Note that the settings introduced in the following sections are *recommendations* for a safer social networking experience. You can always configure your account in a way that will make you feel more comfortable and safer.

2.11.7.1 Facebook

To access Facebook's privacy settings click on the small arrow pointing down () on the top right of the screen and select Privacy settings. You will be transferred to the Privacy Setting page (Figure 240). Here you can set who will be allowed to view your profile and other information related to your personal account such as your pictures and shared items. It is recommended to set this option to the Friends choice.

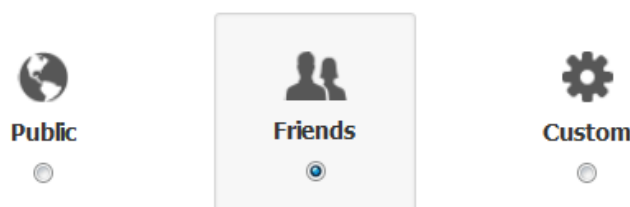


Figure 240: Setting Facebook privacy settings

You can also change who can sent you messages by selecting the "How you connect" option and then configuring the given options (Figure 241):



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How You Connect

Who can look up your profile by name or contact info? **Friends**

Who can send you friend requests? **Everyone**

Who can send you Facebook messages? **Friends of Friends**

Who can post on your Wall? **Friends**

Who can see Wall posts by others on your profile? (Note: Stories about likes, friendships, and some other types of wall content aren't included in these settings.) **Custom**

[Learn more](#) **Done**

Figure 241: Page where you can configure How You Connect options in Facebook

Be sure to click on the button *Done*, at the bottom of the window, once you have completed the changes to your personal settings. If you need more information you can always visit the Facebook's help page at www.facebook.com/help.

2.11.7.1.1 Facebook accessibility page

Although Facebook does not have a dedicated accessible webpage, it does have a useful help section about accessibility at www.facebook.com/help/accessibility, as also shown in Figure 242.

facebook HELP CENTER Search the Help Center **Back to Facebook**

Basics

Learn About Facebook

Manage Your Account

Explore Popular Features

Use Mobile

Something's Not Working

Report Abuse or Policy Violations

Ads and Business Solutions

Apps, Games and Credits

Safety Center

Community Forum

Using Facebook with Screen Readers and Other Assistive Technology English (US)

Basics » Manage Your Account » Accessibility [Expand All](#) [Share](#)

Facebook is committed to providing a great experience for all of its users. Learn about the built-in tools and technologies that help people with disabilities get the most out of Facebook.

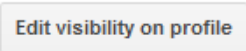
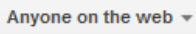
- ▶ **How do I submit a comment while using assistive technology or a virtual keyboard?**
To submit a comment, you must make an 'enter' key press into your operating system. If your virtual keyboard or assistive technology has changed the gener...
- ▶ **How do I register with Facebook using a screen reader?**
Facebook provides an audio captcha alternative to the written captcha, allowing a screen reading user to register with the site. Click the link an audio C...
- ▶ **Do you provide a HTML only version of the site?**
Yes, Facebook's mobile version of the site is HTML only and is compatible with Internet Explorer 7 (and above) and other supported browsers, like Firefox...
- ▶ **How can I report a problem with the assistive technology (i.e. screen reader) I'm using?**
If you are experiencing a problem with a piece of assistive software or hardware on Facebook, please click here to submit a report. When you submit a rep...
- ▶ **How do I increase/decrease the font/text sizes on Facebook?**
You can increase font/text sizes for Facebook from within most browsers: Hold the Ctrl or Cmd key and press the minus (-) key to reduce sizeHold the Ctrl...
- ▶ **How do I use Facebook Chat with a screen reader?**
At this time, Facebook Chat uses dynamic web content that may cause problems with some screen readers. We are working to resolve these problems. As an alt...
- ▶ **How do I make sure that my photos are accessible to assistive technology (i.e., screen readers for blind users)?**
The best way for you to ensure that images are accessible for everyone is to include a caption with your images. The caption will allow you to briefly des...
- ▶ **Do you provide navigational shortcut keys for the main pages on the site?**
We do provide shortcuts on Facebook for keyboard-only users. If you experience any problems with the feature, please email our accessibility team here. Th...

Figure 242: The accessibility page of Facebook

There you can find useful information like keyboard shortcuts when using Facebook. A simpler version of Facebook can be found at <https://m.facebook.com>. This is the mobile version of the website but works with desktop browsers too. Some important shortcuts mentioned in the accessibility page are the zoom in (Ctrl & plus "+") and the zoom out (Ctrl & minus "-").

2.11.7.2 Google +

To access privacy settings on Google+, click on the icon with a small arrow pointing down () and select "Privacy Settings". Here you can change who can view your profile information or your photos.

Select the *Edit visibility on profile* () option to change which information is available to whom. From the new window select the *Anyone on the web* () option and change it accordingly to your personal taste. It is recommended that you set your information's visibility among your circles as shown below (Figure 243):

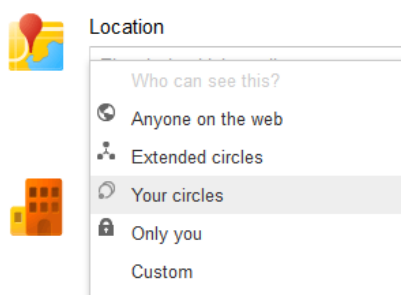
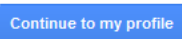


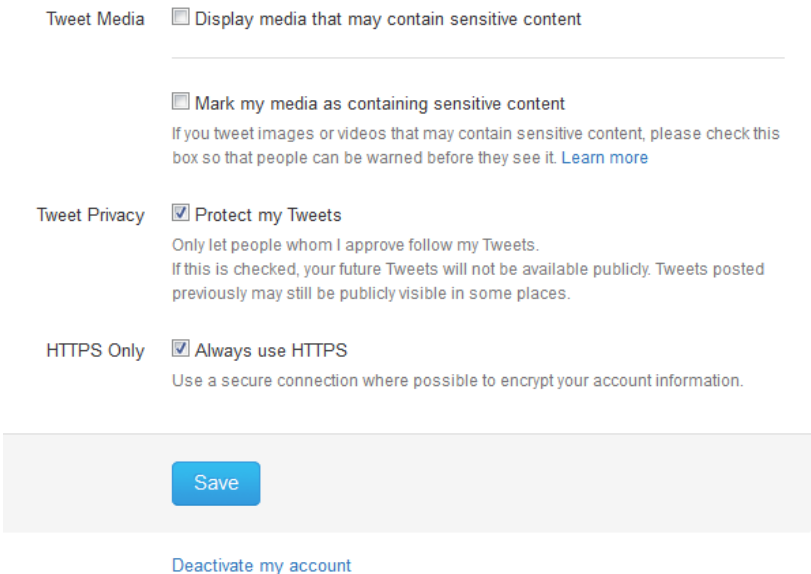
Figure 243: Window from where to define privacy settings in Google+

When done, select the *Continue to my profile* () option. Next, on the Google+ ( Google+) tab, you can change settings regarding your notifications and who can contact you. Keeping your personal information and pictures among your circles is safer since you protect them from unwanted access.

To find out more about Google+ visit <http://support.google.com/plus> .

2.11.7.3 Twitter

For Twitter's settings (Figure 244), select the small arrow pointing down () option on the top left, next to your username. If you do not want to add location to your tweets, thus increasing your privacy, make sure the "Add Location to your tweets" option is unchecked. Also, it is recommended that you do not check the "Display media that may contain sensitive content" option as this will stop Twitter from filtering the content you see from offensive or other type of media.



The screenshot shows the Twitter privacy settings interface. It includes three main sections: 'Tweet Media' with a checkbox for 'Display media that may contain sensitive content'; 'Mark my media as containing sensitive content' with a checkbox and explanatory text; 'Tweet Privacy' with a checked checkbox for 'Protect my Tweets' and explanatory text; and 'HTTPS Only' with a checked checkbox for 'Always use HTTPS' and explanatory text. At the bottom, there is a blue 'Save' button and a link to 'Deactivate my account'.

Tweet Media ☐ Display media that may contain sensitive content

☐ Mark my media as containing sensitive content
If you tweet images or videos that may contain sensitive content, please check this box so that people can be warned before they see it. [Learn more](#)

Tweet Privacy ☒ Protect my Tweets
Only let people whom I approve follow my Tweets.
If this is checked, your future Tweets will not be available publicly. Tweets posted previously may still be publicly visible in some places.

HTTPS Only ☒ Always use HTTPS
Use a secure connection where possible to encrypt your account information.

[Save](#)

[Deactivate my account](#)

Figure 244: Window from where to define privacy settings in Twitter

If you do not want your tweets to be available to public check the “Protect my Tweets” option and also the “Always use HTTPS” as this will encrypt your information sent over the website. You must click on the “Save” button for your changes to take effect.

To find out more about Tweeter visit <https://support.twitter.com/>.

2.11.7.3.1 Easy Chirp (Accessible alternative to Twitter)

Along with YouTube and mobile Facebook, Twitter also has an accessible website. It can be found at <http://www.easychirp.com>. Easy Chirp is not officially developed by the Twitter team but created by other users instead. Before you start using the site, you must first sign in with your Twitter account. Select the “Sign in with Twitter” option to navigate to the next page (Figure 245).

[skip to sign in](#) | [skip to main content](#)



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Web accessibility for the Twitter website application

Easy Chirp is a web-accessible alternative to the Twitter.com website. It is designed to be easier to use and is optimized for disabled users. It also works with keyboard-only, older browsers like IE6, lowband internet connection, and without JavaScript. Learn more about [web accessibility](#).

Refer to the [development tasks](#) further down this page for items currently in progress. Learn more about Easy Chirp on the [About](#) and [Features](#) pages. You may also read an extensive list of [user feedback and blogs/articles](#) about this application.

Sign In

[Sign in with Twitter](#)

Click here to sign in with your Twitter account.

Donate to Easy Chirp

Donate



Latest Tweets from Easy Chirp

- Did you know? In my app, you can view the date you or any user joined Twitter (from profile page)
- Neat! AFB wind-up talking book record player (YouTube) <http://t.co/aSoeOpYP> #blindness #music #history via @AFB1921
- RIM Launches #BlackBerry Screen Reader (announced last week) <http://t.co/onOjlgN> #mobile #a11y #rim via @berryaccess
- Neat news commentary: "User-friendly products help people with disabilities" <http://t.co/RucLx03R> HT @yahoohooaccess #a11y #ux
- Tips on braille for business cards: <http://t.co/6eraM69s> (2007) <http://t.co/84JL1L13> (2011) #a11y Thanks @slewith

Follow me on Twitter at: @EasyChirp.

Figure 245: The main page of Easy Chirp, the accessible alternative of Twitter

In order to use Easy Chirp, you must authorise the website to use the Twitter functions (Figure 246). This is needed because it is not an official Twitter web page.

Authorize Easy Chirp to use your account?

This application **will be able to**:

- Read Tweets from your timeline.
- See who you follow, and follow new people.
- Update your profile.
- Post Tweets for you.
- Access your direct messages.

☐ Remember me · [Forgot password?](#)

Authorize app

No, thanks

This application **will not be able to**:

- See your Twitter password.



Easy Chirp

By Web Overhauls/Dennis Lembree
www.easychirp.com

A user-friendly, web-accessible Twitter application. Works in all types of browsers, settings, and input/output devices.

[← Cancel, and return to app](#)

Figure 246: Window from where you can authorise the EasyChirp application to use your original Twitter account

Fill in your Twitter username and password in the respective field and select "Authorize app".

Once you authorize Easy Chirp, you will be automatically navigated to the main screen, as shown in Figure 247 below.



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Lifelong Learning Programme

following: 0 followers: 0 tweets: 0
Remaining API Hits: 349[Go To User »](#)[Home](#) [My Profile](#) [Tips](#) [Articles & Feedback](#) [Features](#) [About](#)[Timeline](#) [My Tweets](#) [Mentions](#) [Favorites](#) [DM](#) [Public](#) [Search](#) [Lists](#) [Trends](#) [Links](#)

What's happening?

Characters remaining: 140

[Tweet about Easy Chirp!](#)

1. Enter your tweet here.

Post

2. Select "Post" to send it online.

My latest tweet:

[Open Shorten URL »](#)

Timeline

None found.

[Older >](#)

Figure 247: The main screen of Easy Chirp after authorising it to access your Twitter account

From here to post your 140 characters text, click in the text box and write your tweet. Then select the "Post" button to send the tweet online and make it available to your subscribers.

2.11.7.4 Netlog

Here we present how to increase your privacy on Netlog. You can change at any time what status your friends will see by clicking your current status, next to your username (Figure 248).

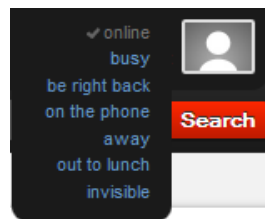


Figure 248: Window from where you can define your current status in Netlog

To access the privacy settings select the "Settings" option below your username, at the top right of the screen. Netlog offers some predefined settings but you can set your own by navigating through the tabs (Figure 249):

Settings / Privacy / Overview

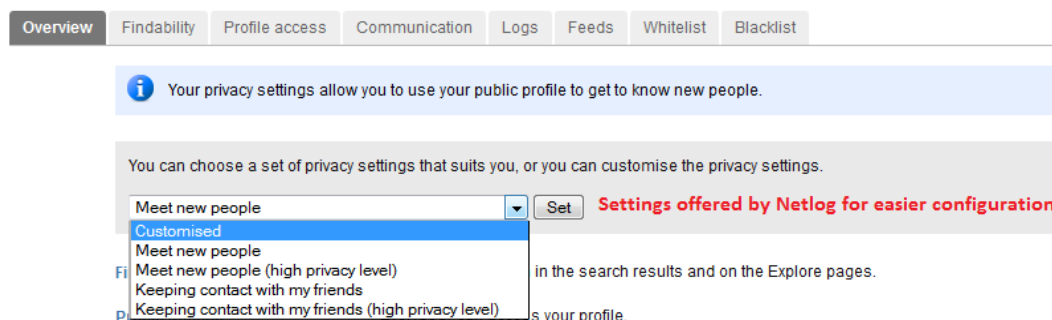
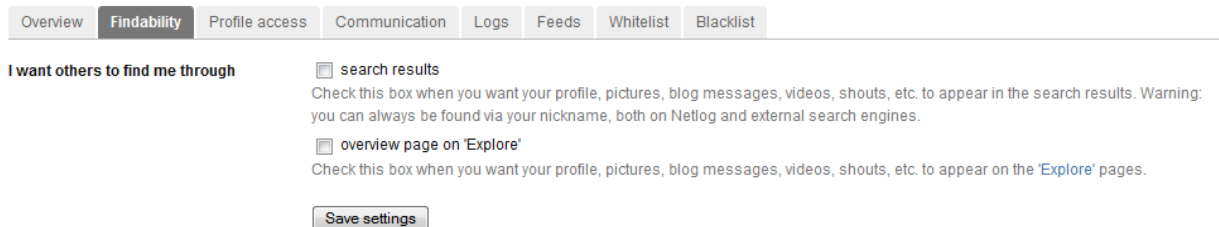


Figure 249: Customising the predefined privacy settings of Netlog

Here are some useful settings for protection of your privacy on Netlog. Always click on “Save settings” before moving to the next tab:

Findability:



Overview Findability Profile access Communication Logs Feeds Whitelist Blacklist

I want others to find me through

☐ search results
Check this box when you want your profile, pictures, blog messages, videos, shouts, etc. to appear in the search results. Warning: you can always be found via your nickname, both on Netlog and external search engines.

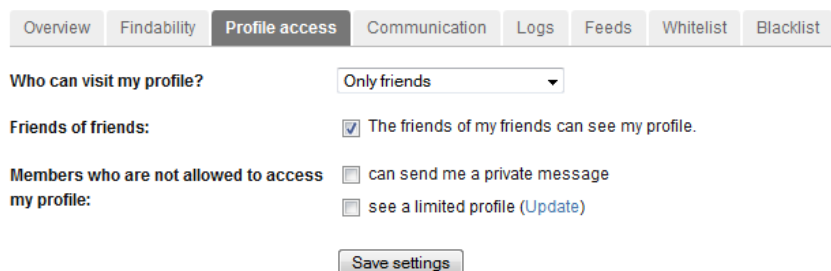
☐ overview page on 'Explore'
Check this box when you want your profile, pictures, blog messages, videos, shouts, etc. to appear on the 'Explore' pages.

[Save settings](#)

Figure 250: The Findability group of privacy settings in Netlog

The page (Figure 250) offers the options to allow others find you through search results or overview page on ‘Explore’. You may select any or both of the two options.

Profile access:



Overview Findability Profile access Communication Logs Feeds Whitelist Blacklist

Who can visit my profile? Only friends

Friends of friends: ☒ The friends of my friends can see my profile.

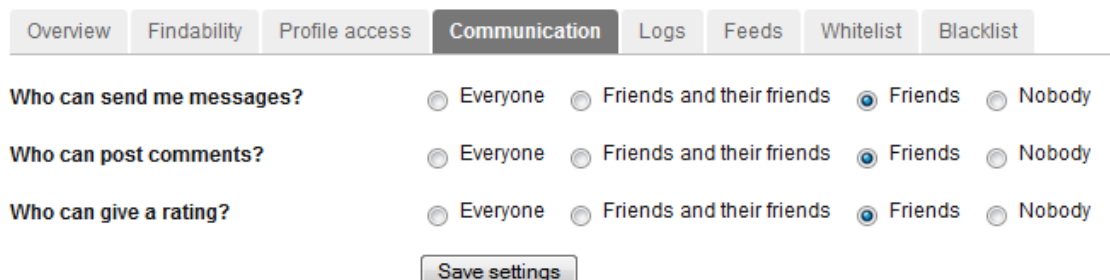
Members who are not allowed to access my profile: ☐ can send me a private message ☐ see a limited profile ([Update](#))

[Save settings](#)

Figure 251: The Profile Access group of privacy settings in Netlog

The page (Figure 251) offers the possibility to select who can visit your profile (recommended to select *Only friends*), indicate whether the friends of your friends can view your profile, as well as, whether members who are not allowed to access your profile could send you private messages and/or see a limited version of your profile (there is an update link to define what the limited version of the profile would be).

Communications:



Overview Findability Profile access Communication Logs Feeds Whitelist Blacklist

Who can send me messages? ☐ Everyone ☐ Friends and their friends ☒ Friends ☐ Nobody

Who can post comments? ☐ Everyone ☐ Friends and their friends ☒ Friends ☐ Nobody

Who can give a rating? ☐ Everyone ☐ Friends and their friends ☒ Friends ☐ Nobody

[Save settings](#)

Figure 252: The Communication group of privacy settings in Netlog

The page (Figure 252) offers the possibility to define who can send messages to you, who can post comments and who can give rating. The options in all cases are: everyone, friends, friends of friends, and nobody.

Logs:

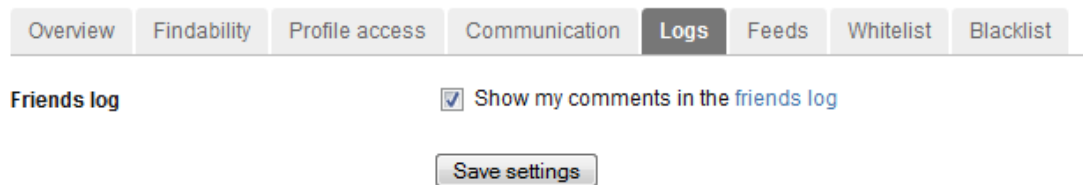


Figure 253: The Logs group of privacy settings in Netlog

The page (Figure 253) offers the option to define whether your comments will be shown in the logs of your friends.

To learn more about Netlog visit <http://en.netlog.com/go/helpdesk>.

2.11.7.5 *LinkedIn*

To access privacy settings on LinkedIn, select the “Settings” option below your username (Figure 254):

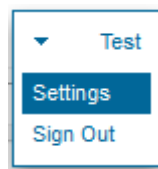


Figure 254: Selecting the Settings option under your username in LinkedIn

Here are recommended settings for the “PRIVACY CONTROL” section (Use the “Save” button after each change):

Turn on/off your activity broadcasts:

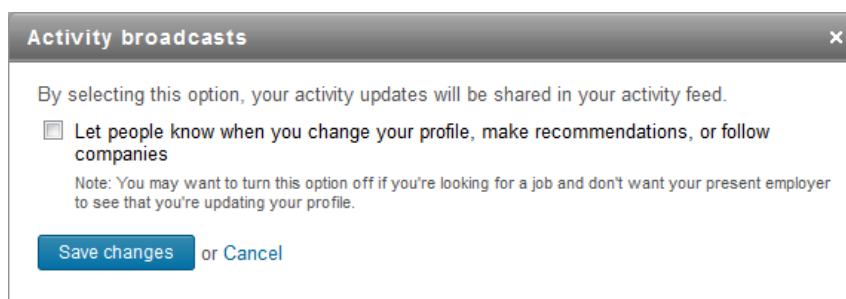


Figure 255: Turning off your activity broadcast in LinkedIn

The page (Figure 255) provides a selection box. By selecting it, you let people know when you change your profile, make recommendations or follow companies. It is recommended to keep this feature turned-off in case you are looking for a job and don't want your present employer to see your moves to that direction.

Select who can see your activity feed:

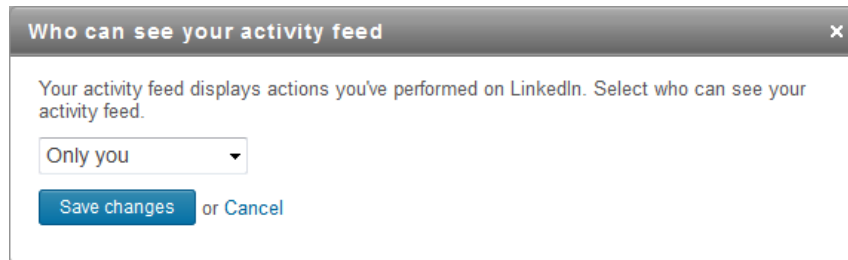


Figure 256: Selecting who can see your activity in LinkedIn

The page (Figure 256) shows a select box from which you can define who can see your activity feed on linkedin. E.g. you may choose the *Only you* option in case you do not want anybody else to have that right.

Select what others see when you've viewed their profile:

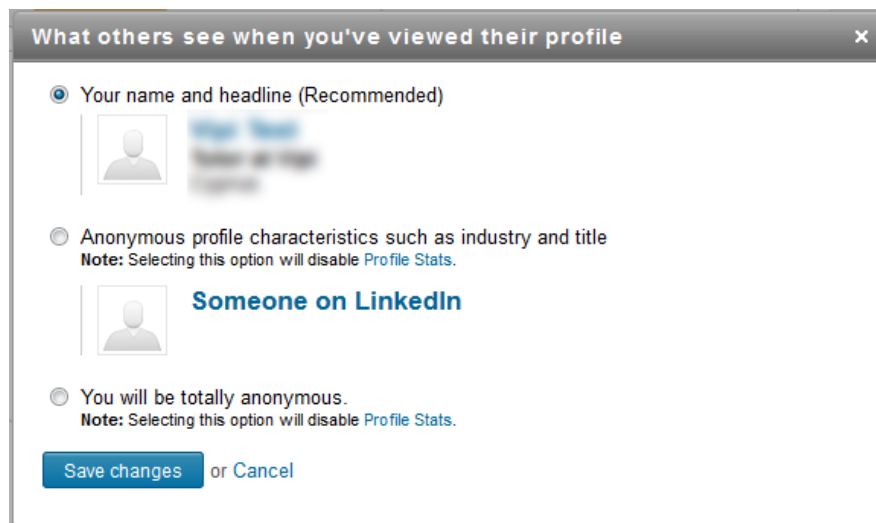


Figure 257: Defining what other can see when you have viewed their profile in LinkedIn

The page (Figure 257) provides buttons to select one of three options; the first is to allow other to see your name and headline (it is the recommended one), the second to allow them see your anonymous profile characteristics and the third to show you are totally anonymous.

Select who can see your connections:

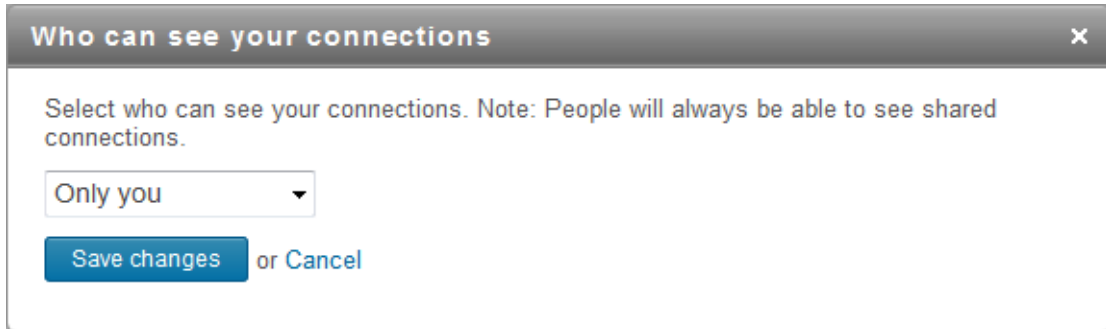


Figure 258: Defining who can see your connections in LinkedIn

The page (Figure 258) provides a selection box from which you can choose who can see your connections. For example, in case you do not want anyone to be able to see with whom you appear connected, you can choose the *Only use* option.

Change your profile photo & visibility:

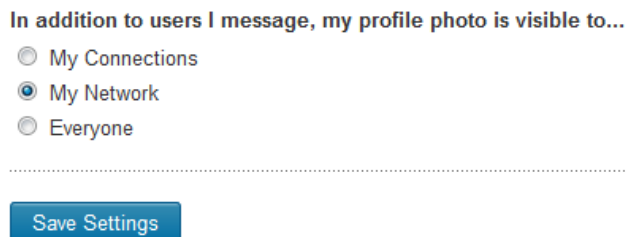


Figure 259: Changing profile photo and visibility in LinkedIn

The page (Figure 259) asks you to select one of the three options to define who can view your profile photo in addition to the users you exchange messages with. The three options are your connections, your whole network, or everyone. It is recommended to choose the second option.

Show/hide "Viewers of this profile also viewed" box:



Figure 260: Defining whether to display the "Viewers of this profile also viewed" box in LinkedIn

The page (Figure 260) provides a check box. By selecting it you define that the "Viewers of this profile also viewed" box will not appear in your profile page. That is, the users that visit your profile will not be provided with information on what profiles your visitors view in general.

To learn more about LinkedIn visit <http://learn.linkedin.com/> .

2.11.7.6 YouTube

The YouTube website is a very popular place to share your videos or watch videos shared by other users. If you have a Google account (Gmail or Google+) you can use it from there as well since they are interconnected Web sites. From the bar at the top of the page you can search for videos, upload your own, create an account or sign in if you have a user name, as shown in Figure 261.

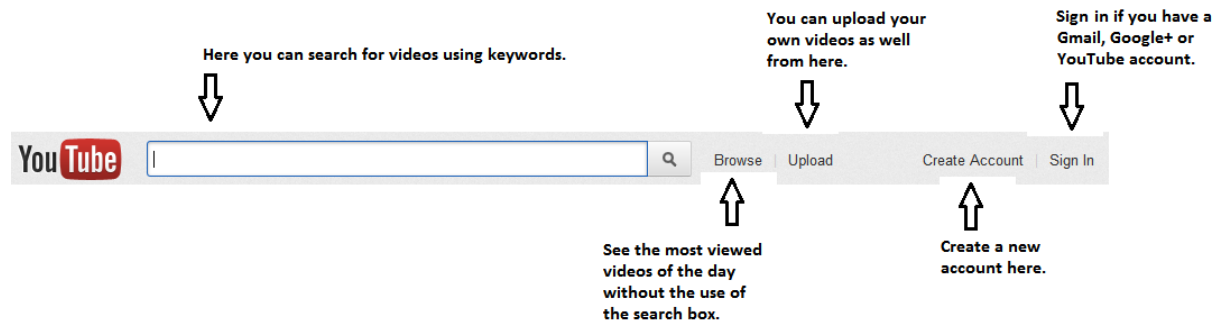


Figure 261: Top bar at YouTube page, with options to search, browse, upload, create account and sign-in

To view a video after performing a search or after browsing for the most viewed videos of the day, click on its title, as shown in Figure 262.

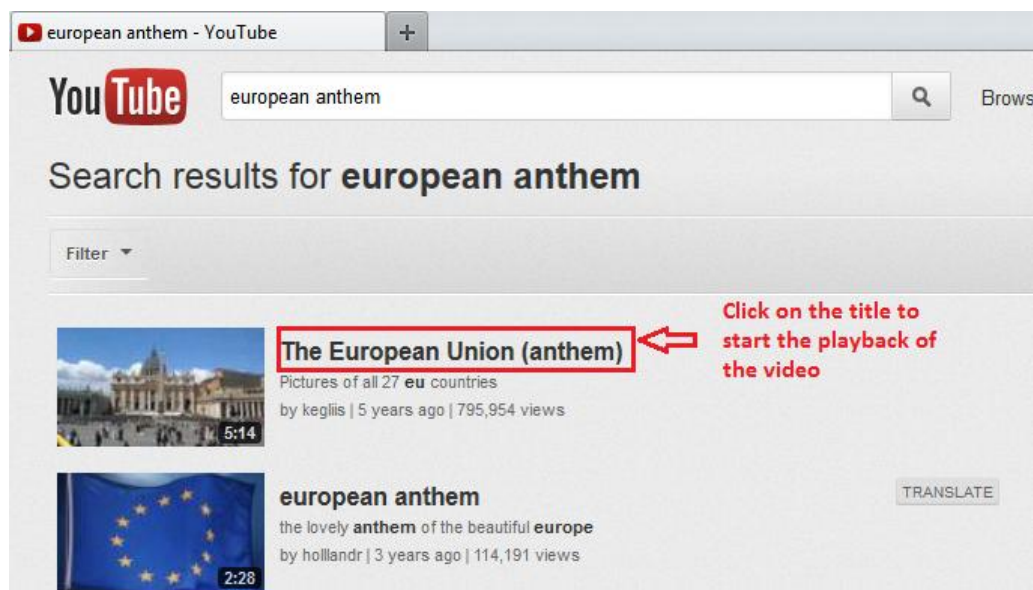


Figure 262: An example of search results in YouTube, with the title of a result marked in red-line box

In the playback page, YouTube offers some features in order to make it easier for the user to share the video and to find similar videos. They are marked in Figure 263 and further explained afterwards.

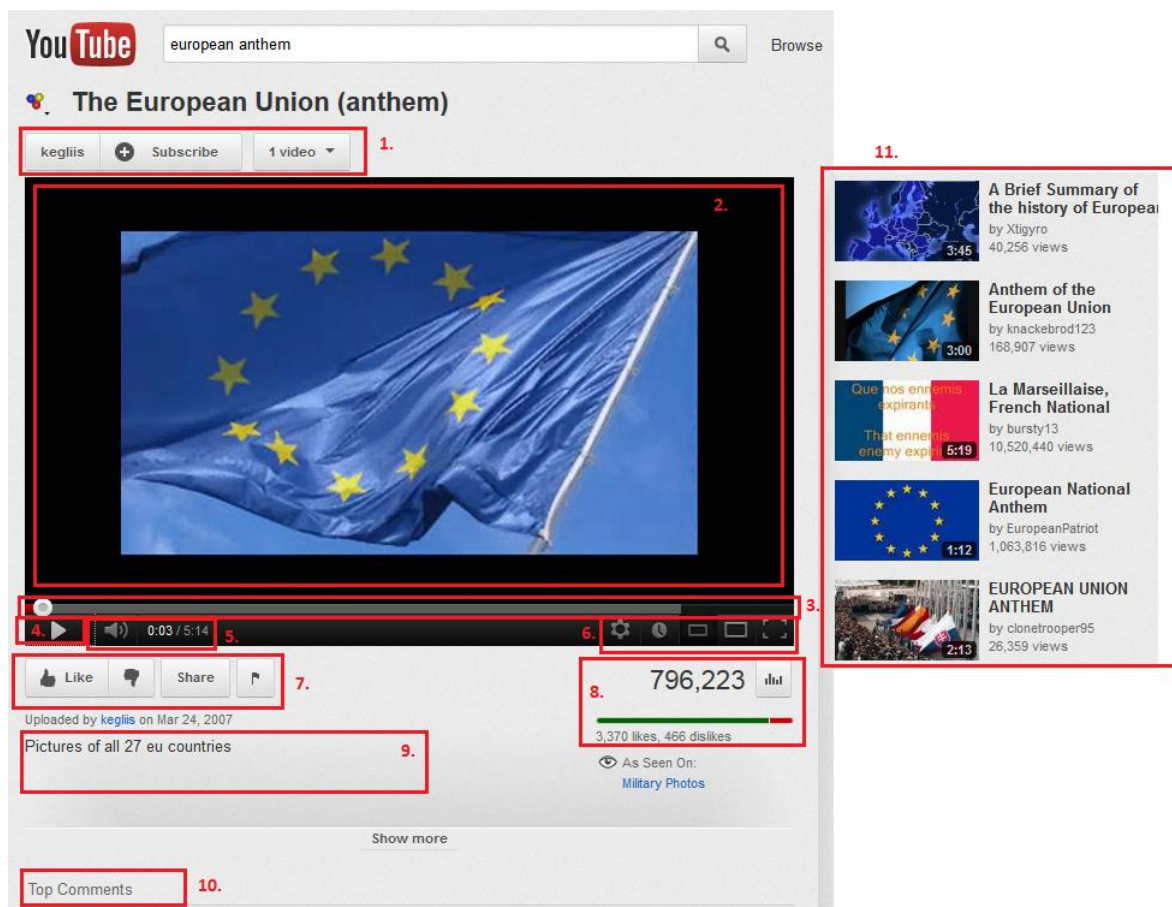


Figure 263: The page from where a video is played. The different options are marked in numbers and explained in the text

1. **Uploader's information:** Here the name of the user that uploaded the video is shown and you have the option by clicking "Subscribe" to be notified when the user will upload new videos.
2. **Main window:** The video will be played here.
3. **Playback bar:** From here you can move the video forward or backward by moving the white dot. Since YouTube is downloading the videos from the Internet it needs some time to complete this action. The grey bar shows the download process of the video.
4. **Play button:** The play button allows you to stop the video and resume it later.
5. **Video's volume and duration:** You can change the volume of the video here by clicking on the speaker symbol. The duration of the video is also shown along with the current process.
6. **Other controls:** With these controls you can view the video in full screen or save it for later. Some videos offer better resolution and needs to be selected from here.
7. **Share options:** Here you can like or dislike a video on YouTube by selecting the proper hand gesture. You can also share it with your friends or flag it as inappropriate.
8. **Views:** This is a statistic about how many views the video got since the day it was uploaded. You can also see how any people liked or disliked the video.
9. **Description:** Some uploaders write a description about their videos here.
10. **Comments:** YouTube allows registered users to comment on videos. Comment will be shown here, unless the uploader does not allow this feature.
11. **Recommended videos:** At this side list you can view recommendations made by YouTube based on the current video you are watching. This way you can find videos faster without further search.

2.11.7.6.1 Tube Majestyc (accessible interface to YouTube)

Tube Majestyc is a simpler, more accessible way to visit YouTube. It can be found at <http://tube.majestyc.net> (Figure 264). This minimalistic website uses high contrast theme to provide easy access to videos from YouTube. The website is not developed officially by YouTube but it was built as a technical exercise as explained in the welcome text. To search for a video, enter the website and at the search box type the video you are searching for.

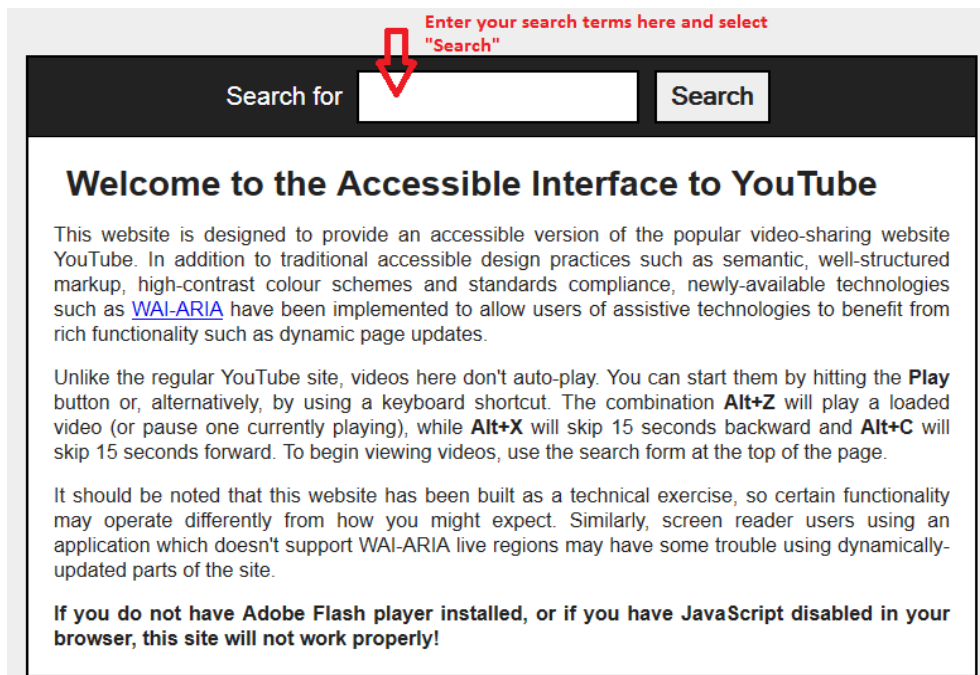


Figure 264: The main page of the Tube Majestyc, the accessible alternative of YouTube

From the results page select the desired video and you will be transferred to the video's webpage. In Figure 265, the basic functions for are marked. In the main screen (Label no. 1) the video will appear once you select the "Play" option (Figure 265, Label no.2). If you would like to move forward in the video select the "Skip Forward" option (Figure 265, Label no.4). To move back, select "Skip Backwards" (Figure 265, Label no.3). You can also mute the sound and keep the video playing (Figure 265, Label no.5). Detailed video information, like the total duration of the video and the time elapsed, can be found below the playback button (Figure 265, Label no.6). YouTube allows users to comment on the online videos (although some video uploaders disable this function). To view the video's comments scroll at the bottom of the page as shown in Figure 265, label no.7.



Figure 265: The playback interface of Tube Majestyc

2.11.8 Email Security

We introduced email's security risks in course 0-*Email and Security*. In this course we explain more security options to protect your system and data from potentially dangerous emails. The software tool, used here as an example, is the Mozilla Thunderbird.

Email clients and dedicated email websites usually block content that is not included in the email but instead linked to the email. When this happens a relevant notification appears, informing you that some content has been blocked, as shown in Figure 266 below.

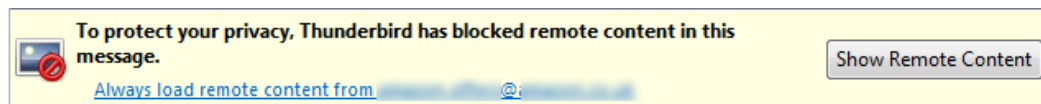


Figure 266: Notification about blocking of content in an email message, example from Mozilla Thunderbird

Read carefully the notification to find out from which address the content is linked to the email. If you recognise the address and if it is from the same source as the sender, click on the "Show Remote Content" button to see the email as it was sent. If you do not recognise the remote address, or if you are suspicious about the sender, do not allow the content to be shown.

You can also configure the email software to analyze your emails to avoid phishing/spoofing emails (explained in course 0) and to allow your antivirus to scan your messages. To access this options select from the main window, Tools→ Options and select the security tab (Figure 267):

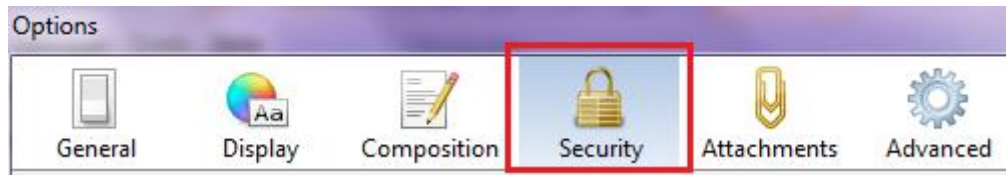


Figure 267: Marked Security Tab in the Options of Thunderbird

In the following screenshots we illustrate a set of recommended settings for each tab, to achieve increased privacy and better protection.

Junk

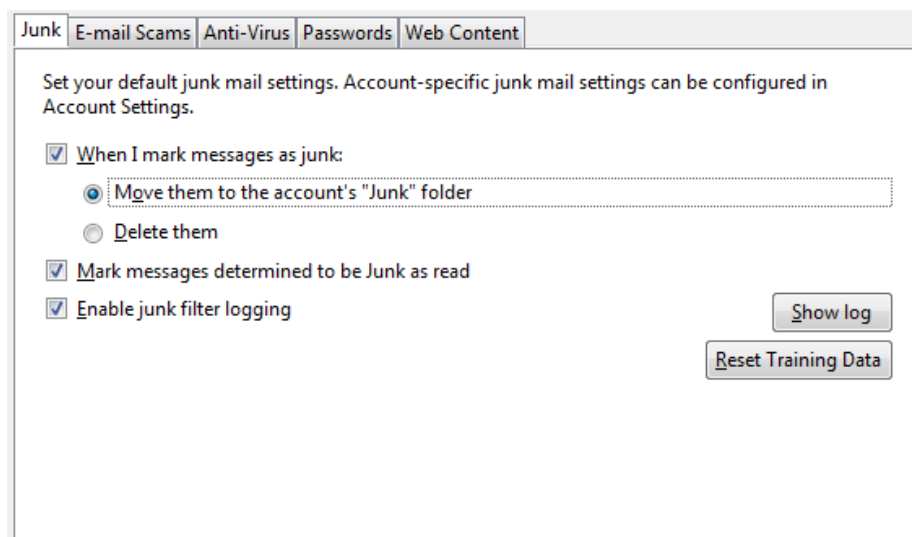


Figure 268: The Junk tab and subsequent settings in the security options

The page (Figure 268) offers three configuration options and each one can be activated with a check box next to it. The first allows you to define what the tool will do with the messages you mark as junk (here you can further select which folder the messages will be moved to or whether they will be deleted). The second option allows you to define whether the messages determined to be junk, will also appear as read. Finally, the third option allows you to enable logging on the junk filter, so that you can visit it later and check the actions taken by that filter on behalf of you.

E-mail Scams

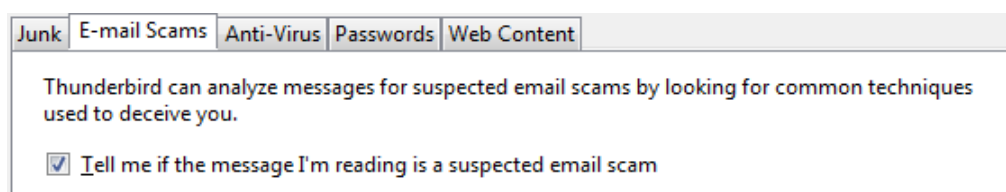


Figure 269: The E-mail Scams tab and subsequent settings in the security options

The page (Figure 269) offers one configuration option that can be activated with a check box. By selecting it, you ask the tool to inform you if the message you read is defined to be suspicious email scam.

Anti-Virus

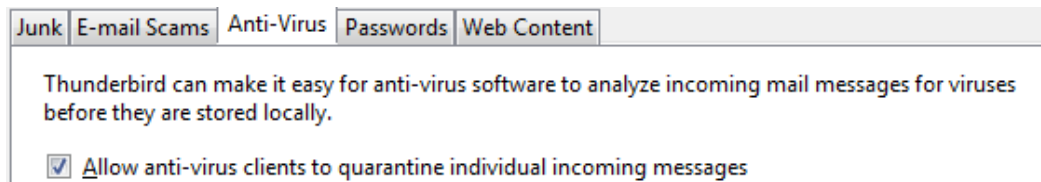


Figure 270: The Anti-Virus tab and subsequent settings in the security options

The page (Figure 270) offers one configuration option that can be activated with a check box. By selecting it, the email client will allow antivirus tools to keep suspicious incoming messages in a safe location (quarantine them) and inform you to take proper actions to prevent damage.

Passwords

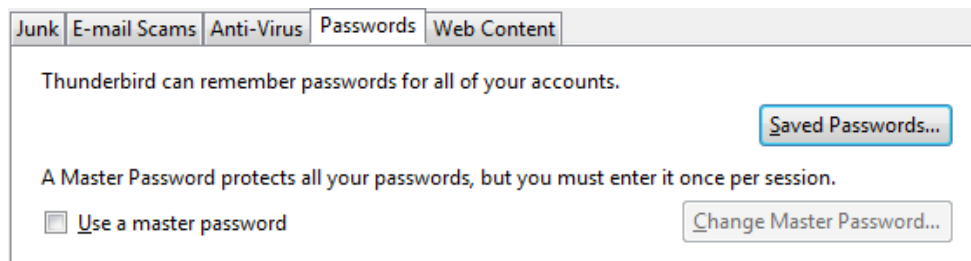


Figure 271: The Passwords tab and subsequent settings in the security options

The page (Figure 271) allows you to define how the client deals with your passwords and whether it shall remember them and help you filling-in the relevant fields on forms. If you would like to check what passwords the applications has stored click on the "Saved Passwords..." option. You can remove password that you do not want the program to remember.

Web Content

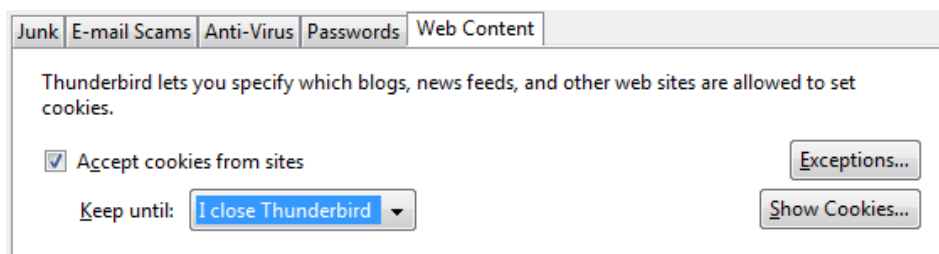


Figure 272: The Web Content tab and subsequent settings in the security options

The page (Figure 272) lets you to specify which third-parties (e.g. blogs, web sites, news feeds) are allowed to set cookies on your computer. It is recommended to check the box to Accept cookies from

sites and then select to keep until you close the tool. Note here that this is an independent setting and is not related with your internet browser's settings.

Finally, click on the OK button to save all performed changes in your settings.

2.11.9 MS Security centre

Microsoft Windows XP with Service Pack 2 and above, Windows Vista and Windows 7 come preloaded with many security features in order to maintain system stability and protect the user from known malware. All the security settings and systems status are gathered in one place and monitor the system to make sure that all the security features available are updated and working correctly. This centre was named *Windows Security Center* in Windows XP and Vista and has been renamed to Action Center for Windows 7. To access the Action/Security Center select the start button  and from the list on the right select Control Panel. Then select System and Security and finally the Action Center option (Security Center for Vista and XP) (Figure 273).

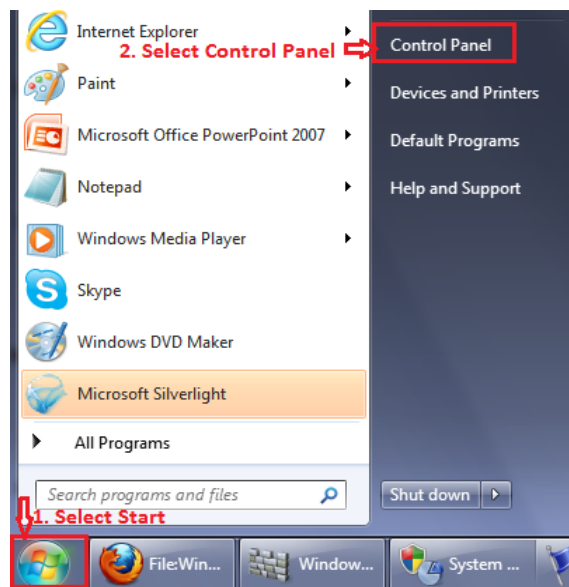


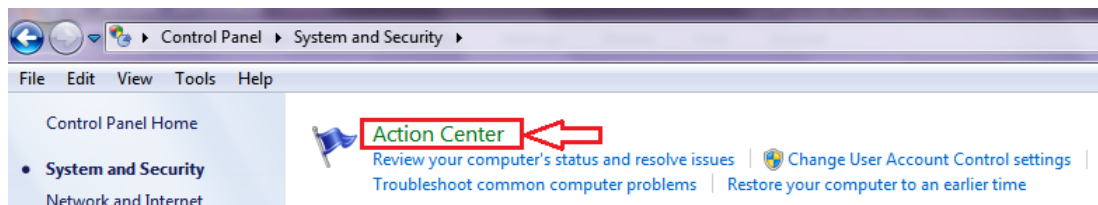
Figure 273: Accessing the Control Panel, from the Start panel

Then select System and Security (Figure 274),



Figure 274: The System and Security group of settings, in the Control Panel

and finally the option named “Action Center” (Figure 275).



Alternatively, you can select the start button, type “Action Center” in the search *program and files* and press enter.

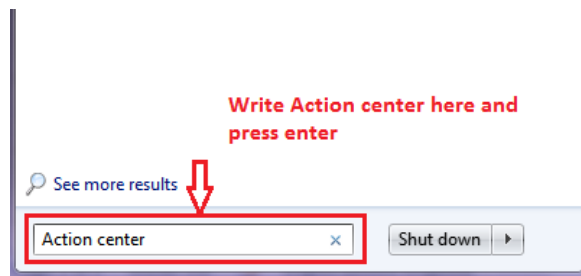


Figure 275: The Action Center settings from the Systems and Security group of settings, in the Control Panel

The start-up page of the Action Center will open (Figure 276), indicating the system’s security status.

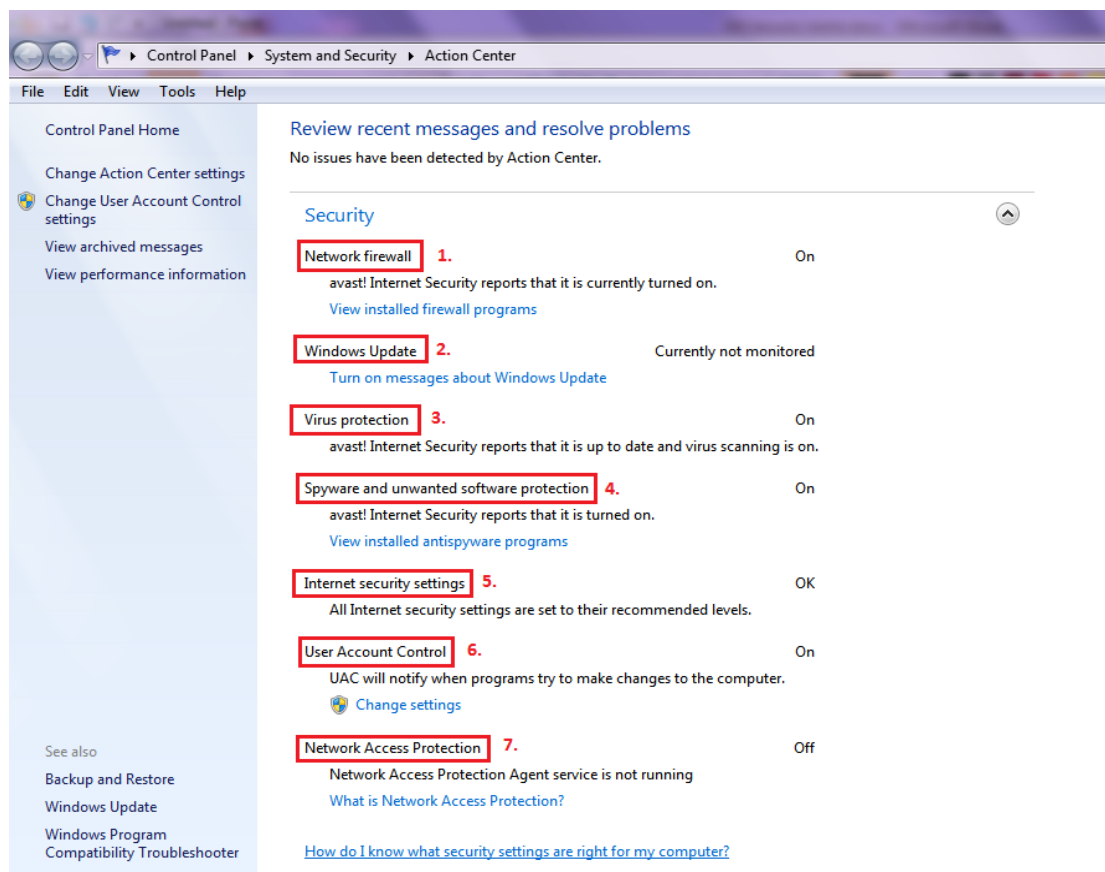


Figure 276: The Action Center settings in the Control Panel, with numbered sections/parts

In this screen (Figure 276) you should check the status of the following features to make sure you get maximum protection for your computer:

1. **Network firewall:** Windows firewall must be turned ON. If for any reason is OFF check the course *Safety and Security* → *Personal firewall* to find out how to turn it on.
2. **Windows updates:** Windows updates are responsible for keeping the system up to date with the latest software fixes. The recommended setting is to have the system automatically download and install the latest updates. More info is available at the course *Safety and Security* → *Operating System (OS) and software updates*.
3. **Virus Protection:** Here you can find information about the status of your installed antivirus. As with the firewall status, this should be set to ON as well. If you do not have an antivirus installed, please check the course *Safety and Security* → *Antivirus Programs* to find instructions to install an antivirus program.
4. **Spyware and unwanted software protection:** Spyware is another dangerous category of malware so a countermeasure is a must for a safer online experience. Fortunately Windows include a free spyware scanner, the *Windows Defender*. By default Windows Defender is set to ON, but if for any case is OFF, you can turn it on easily. Below the “*Spyware and unwanted software protection*”, select “View installed antispyware programs” (Figure 277).

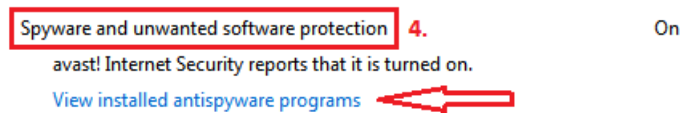


Figure 277: Selecting to view the installed antispysware programmes on your device

From the pop up window select the “Windows Defender” option and then select *Turn On* (Figure 278).

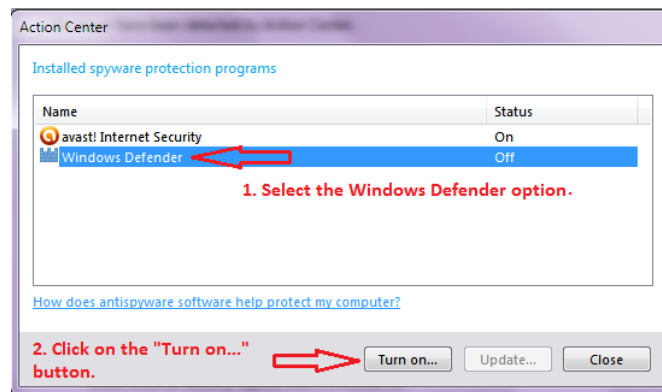


Figure 278: Turning on the Windows Defender program

The Windows Defender main window will be launched as shown in Figure 279 bellow.

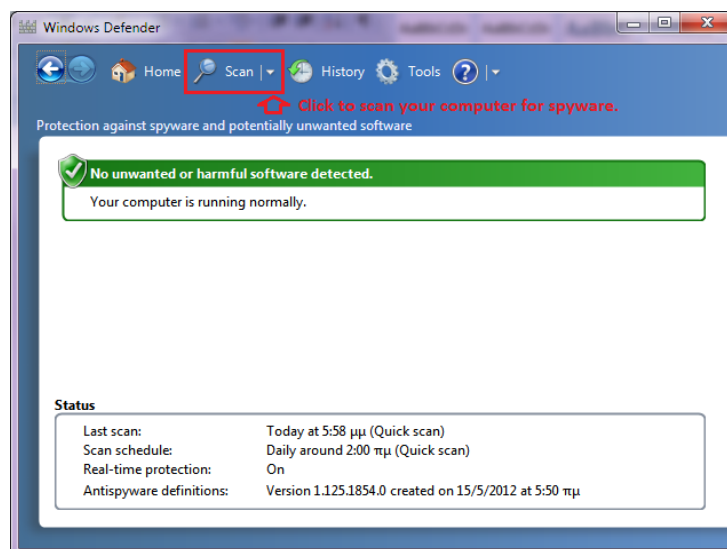


Figure 279: The Windows Defender main window

To scan your computer manually, select the *Scan* option. A manual scan can be performed at any time by launching the Windows Defender from the start panel (Figure 280). Select the start button and type Windows Defender in the *Search Program and Files* field.

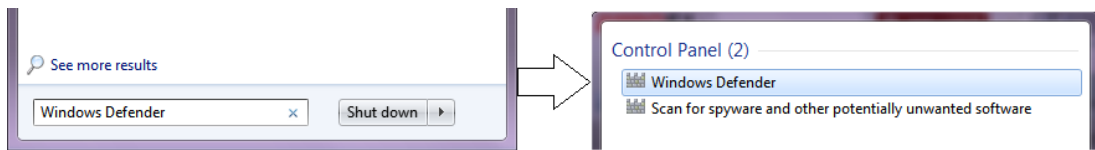


Figure 280: Launching the Windows Defender program from the Start Panel

Windows Defender updates are available through the Windows Update service.

5. **Internet Security Settings:** This section here is a summary of your internet settings. If all the previous settings are configured correctly, the status of this option should be OK.
6. **User Account Control:** Sometimes referred as UAC this setting configures the level of user interaction that is needed during system's operation. Click on the "Change Settings" below the section's title and then from the pop-up window (Figure 281) make sure the level of notifications is at the Default option. Finally click OK.

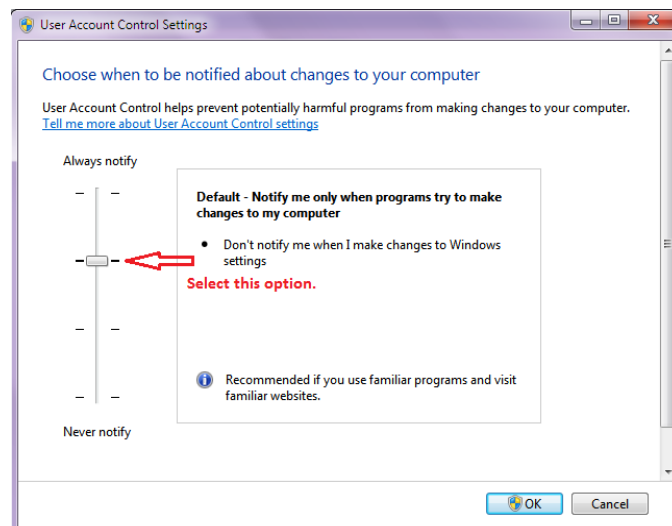


Figure 281: Window from where you can define the level of notifications on changes

7. **Network Access Protection:** This setting is for network administrators in order to keep the computers of their network updates with the latest security software. This setting is by default set to Off.

1. <http://csrc.nist.gov/publications/nistbul/csl96-05.txt>