Skills2Work

Skills2Work

To live & work | To earn & provide | To take your place in life

Computer Ready

Workbook 1

Name

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Introduction

Computers have become an important part of everyday life. The majority of things we do are affected by computers. The way we shop, the way we communicate, our entertainment, the work we do, when we go to a hospital, our life history have all changed and these changes are happening faster all the time.

Computers are getting smaller and faster and more accessible and that means that knowing the basics of how to operate a computer is very important for anyone that wants to get ahead in life.

Activity

1. How do computers affect your life?

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2. What computers have you used?

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Terminology

Computer	An electronic device for storing and processing data, typically in binary form, according to instructions given to it in a variable program.
Boot up	To start up a computer. It is the initial set of operations that a computer system performs when electrical power to the CPU is switched on.
Configuration	An arrangement of elements in a particular form, figure or combination.
Keyboard	A keyboard is the set of typewriter-like keys that enables you to enter data into a computer.
Login	An act of logging in to a computer system. To get access to the computer system by signing in. Usually with a password.
Mouse	The mouse is a computer input device used to move a cursor around the screen. The buttons on a mouse are used to interact with whatever is being pointed at.
Operating system	The operating system is the most important program that runs on a computer. Every general-purpose computer must have an operating system to run other programs. Operating systems perform basic tasks, such as recognizing input from the keyboard, sending output to the display screen, keeping track of

	files and directories on the disk, and controlling peripheral devices such as disk drives and printers.
Programme	An organized list of instructions that, when executed, causes the computer to behave in a predetermined manner. Without programs, computers are useless.
	A program is like a recipe. It contains a list of ingredients (called variables) and a list of directions (called statements) that tell the computer what to do with the variables. The variables can represent numeric data, text, or graphical images.
Utilities	A program that performs a very specific task, usually related to managing system resources. Operating systems contain a number of utilities for managing disk drives, printers, and other devices.
	Utilities differ from applications mostly in terms of size, complexity and function. For example, word processors, spreadsheet programs, and database applications are considered applications because they are large programs that perform a variety of functions not directly related to managing computer resources.
User Profile	Your user profile is a collection of settings that make the computer look and work the way you want it to. It contains your settings for desktop backgrounds, screen savers, pointer preferences, sound settings, and other features. User profiles ensure that your personal preferences are used whenever you log on to Windows.

1. Start up and shut down a personal computer

Reference: SO 1

At the end of this module you will be able to:
- ☑ Boot up a computer
- ☑ Log into a computer or programme
- ☑ Deal with errors when booting up or logging into a computer

1.1. Powering up the computer

Reference: SO 1/AC 1, 3 & 7

When your computer completes its startup routine, called booting, you will find yourself looking at a screen displaying the Windows interface. This means what you see and interact with. The Desktop and the Taskbar are the two main parts of the interface.
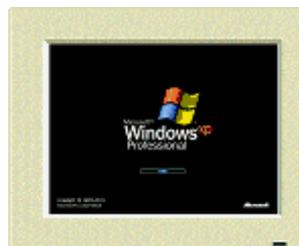
1.1.1.   Booting Up

What happens next?

As the computer boots, it checks itself out. The hard drive spins up to working speed. The power supply fan comes on. The cooling fan for the CPU starts blowing. Other gizmos attached to the computer may power up and make noises, too, like a floppy drive, printer, or scanner.

You should see some text on the screen as this happens. First the BIOS checks the memory and looks for hardware parts. Programs that run at startup may print messages to the screen. Hopefully they just say that all is OK.

Then you will see the Windows start-up screen. This picture is different for each version of Windows. There may be different words below the Windows text, depending on what other Microsoft products you have installed.

In any version of Windows, you may see a login dialog or a Welcome screen that asks for your user name and password.

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> **Powering up a computer is also called 'booting up'.**
> **When we restart a computer it is called 'rebooting'.**

What is a non-standard start-up?
A non-standard start-up is when you interrupt normal boot sequence of a computer.

When do we use a non-standard start-up?

- **EXAMPLE 1: Start up in Safe mode**
  (press F8 continuously on start-up and then select safe Mode)

  A specific way for the Windows operating system to load when there is a system-critical problem interfering with the normal operation of Windows. Safe mode allows the user to troubleshoot the operating system to determine what is not functioning properly. For example, adding new software or drivers for a hardware device to the system can cause conflicts with existing programs. Safe mode is a way to find out what the problem is. In Safe mode, the only start-up programs that are loaded are the operating system and drivers for the mouse, keyboard and standard VGA display modes.

- **EXAMPLE 2: BIOS or CMOS Setup.**
  (Press Delete or (Dell = F1, IBM =F2, ESC, and HP=F10) continuously on start-up)

  The **Basic Input/Output System (BIOS)**, also known as the **system BIOS** or **ROM BIOS.** CMOS is not part of your Operating System. This is a Low Power Circuit that maintains basic computer configurations when the system is powered off. Commonly we refer to a CMOS Battery which should last for about 10 years in a computer.
  The fundamental purposes of the BIOS are to initialize and test the system hardware components, and to load a <u>bootloader</u> or an <u>operating system</u> from a mass memory device.

1.2.   Logging in

Reference: SO 1/AC 4

Why do we login?
We login to a computer to get access to the programs, utilities and our own personal files (i.e. photos / word documents / music files) that are stored on a computer.

When do we login?
We login to our user account when the computer starts up the operating system (i.e. Windows).

	Discussion Point
	When you use passwords and how do you choose them?

When do we use passwords on computers?
We use a password when we login to an account on a computer. Passwords provide the first line of defence against unauthorized access to your computer.

How do you choose a password?
It is important to choose a strong password that other people can't guess and that you will remember. The stronger your password, the more protected your computer will be from hackers and malicious software.

What makes a password strong?
A strong password should ideally contain the below:

- Should be at least eight characters long.
- Does not contain your user name, real name, or company name.
- Does not contain a complete word.
- Is significantly different from previous passwords.
- Contains characters from each of the following four categories:

  - Uppercase letters such as (A, B, C)
  - Lowercase letters such as (a, b, c)
  - Numbers such as (0, 1, 2, 3, 4, 5, 6, 7, 8, 9)
  - Symbols found on the keyboard such as (` ~ ! @ # $ % ^ & * ( ) _ - + = { } [ ] \ | : ; " ' < > , . ? /)

Put it into practice

Login to your computer

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1.3. Dealing with errors

Reference: SO 1/AC 2

What errors occur when booting up or logging in?

- **Disk boot failure:**
  (Error Message: Disk Boot failure-insert system disk and press enter): this message indicate that there is hard-drive failure. Set BIOS setup to default and save the settings.

- **Disk controller error:**
   The cause of this problem may be an error in the instruction being sent from the BIOS to a hardware component (e.g., keyboard failures), or an incompatible device driver. These types of problems can usually be resolved by clearing the error message and then installing updated firmware for a critical component.

- **Non-System Disk Error:**
  Remove the non-system disk from the computer, ei. Disconnect any USB or 1394 (Firewire) devices that are attached to the computer.

  - Remove any CD and DVD discs from the drives.

  - If your computer has a floppy disk drive, remove any floppy disks from the drive.

  - Press and hold the Power button for **5 Seconds** to turn off the PC. Then, press and release the Power button to turn on the PC.

1.4.   Shutting down the computer

While recent versions of Windows are even more forgiving of mistakes than previous versions, it is still quite possible to destroy your hard work, without much effort. One error that is common to newcomers is turning off the computer without saving your documents and closing the applications. That power switch can be dangerous to your work! This section will show you how to shut down the computer correctly.

1.4.1.   Options for quitting what you are doing

Recent versions of Windows have several choices besides just turning off the computer. Which choices you see will depend on the version of Windows and sometimes on whether the computer is a laptop or not.

Switch User
Log Off
Lock

Restart

Sleep
Hibernate
Shut Down
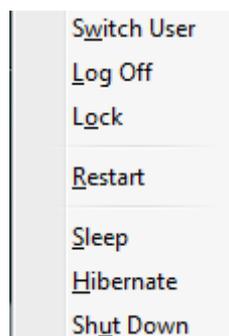
Switch user - Lets you switch to a different user account without closing down the open programs. The computer is, of course, left turned on. When you switch back to the original user, all of the programs appear just the way they were before you switched users.

Log off - Leaves the computer on but closes any open programs and returns you to the logon screen. This is useful when the computer is part of a network or there are several user accounts.

Lock - Lets you keep others from using your computer while it is still on. You must re-enter your password to unlock the computer. This feature is primarily available on network computers but can be enabled for stand-alone computers.

Restart - Closes documents and applications and shuts down the computer, but immediately restarts it. This is useful when installing software that requires a restart to finish the installation.

Also, a restart can often fix a computer that is behaving oddly. Sometimes a restart is not enough rest/cool down. You might need to shut down the computer and let it sit there and cool off for a half hour or so. (If a long rest cures a problem for a while, you need to figure out what is wrong before it gets worse and worse! A dead fan inside the case or an accumulation of dust in there are prime suspects.)

Shut down - Closes all your programs and turns off the computer. Most programs will prompt you to save any unsaved documents as part of the shut down process.

Install updates and shut down - When one or more updates have been downloaded but not installed yet, the next time you shut down or restart the computer, the update(s) will be installed before the computer is shut down. How long the installation will take depends on the size and complexity of the updates. It can add several minutes to the shut down process AND to the next start up. You may or may not see a message about the installation during shut down. You should see a screen tip about a successful installation when you start up again.

1.4.2.   Low-Power Modes

When you are not going to work for a while, you can save electricity and battery charge by putting the computer into a low-power mode. This is especially useful for laptops that are running on battery power.

Which choices you have will depend on your version of Windows and on what modes your computer can use. The modes are different in how fast the computer returns to normal and in what happens if power is lost while in the low power state.

Sleep/Stand by - Saves your work to memory and puts the computer into a low-power state. If the computer loses power while asleep, the changes saved only to memory are lost. Waking up from Sleep or Stand By mode is quick.

Hibernate - Saves your work to memory and to the hard disk and then puts the computer into a lower-power state than Stand by does. If the computer loses power while in hibernate mode, your recent work is not lost. Waking up from Hibernation is slower than from Sleep/Stand By.

Windows Hybrid Sleep - In Windows, on some computers, sleep combines features of stand by and hibernate. Open documents are saved to memory and to the hard disk.

Reference: SO 1/AC 5 & 8

Discussion Point
What are the different ways we can use to shut down a computer?

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Why do we shut down our computer?

When you're done using your computer, it's important to turn it off properly—not only to save energy, but also to ensure that your computer is more secure.

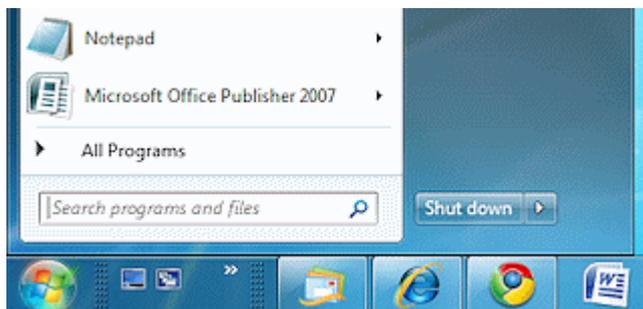### 1.4.3.   Keyboard method to Shut Down:

Open Start menu:

While holding down the CTRL key (on the bottom left of your keyboard or below the ENTER key), press the ESC key at the top left of the keyboard.

   OR

Press the key with the Windows logo if your keyboard has one.

The Start menu pops up. The Start menu on your machine may look a little different.

Press the right arrow key until a menu of choices opens. (Yes, it's easier to get there with the mouse. We are practicing keyboard methods right now!)

Icons on the Power button

By default, the power button on the Start menu in Windows Vista puts the computer into Sleep mode. In Windows 7 the default is Shut Down. You can change that in the Power Options dialog on the Control Panel. The button has a different icon on it for each of the settings possible:

Sleep

Shut down

Install updates and then shut down - Shows only when an update requires a restart to complete the installation. The shut down and start up processes may take a lot longer than usual.

Select a shut down option:

For Windows 7: Press the left arrow key to return to the Shut Down button. Then press Enter.

Wait for a while. The computer may take some time to shut down all the open applications and background processes. Not all of them have buttons on the Taskbar, so you may not even know that they are running. You will be prompted to save any documents that have not been saved yet.

You will eventually see a screen that says something about waiting while the computer shuts down or a screen listing the open programs that must be closed first. Most recent computers will automatically go ahead and turn the power off once all the processes are shut down.

Put it into practice

1. Shut down your computer using the mouse.

2. Shut down your computer using the keyboard.

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What is a non-standard shut down?
A non-standard shutdown is when you shutdown computer by pressing and holding shutdown.

When do we use a non-standard shut down?
When the computer crashes and stops working then you need to sometimes switch it off by a non-standard shutdown. You will then usually boot it up in safe mode to try fix the problem.

Put it into practice

Shut down your computer using 1 of the non-standard methods.

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1.5. Switching off the computer

Reference: SO 1/AC 6

What is the difference between shutting down and switching off a computer?
Shutting down your computer correctly will ensure that your files are saved properly and it will allow your computer to start up quicker next time you turn it on. Switching off a computer at the switch or plug can be risky as you are not giving it the time to switch off properly and save your information.

Put it into practice

Switch off your computer.

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2.   Change the configuration of a PC

Reference: SO 2

At the end of this module you will:
☑   Understand the purpose and use of the configuration of various functions of a PC
☑   Select and change the configuration of a PC

2.1.   The purpose and use of the configuration function

Reference: SO 2/AC 1

Configuration

An arrangement of elements in a particular form, figure or combination.

Discussion Point

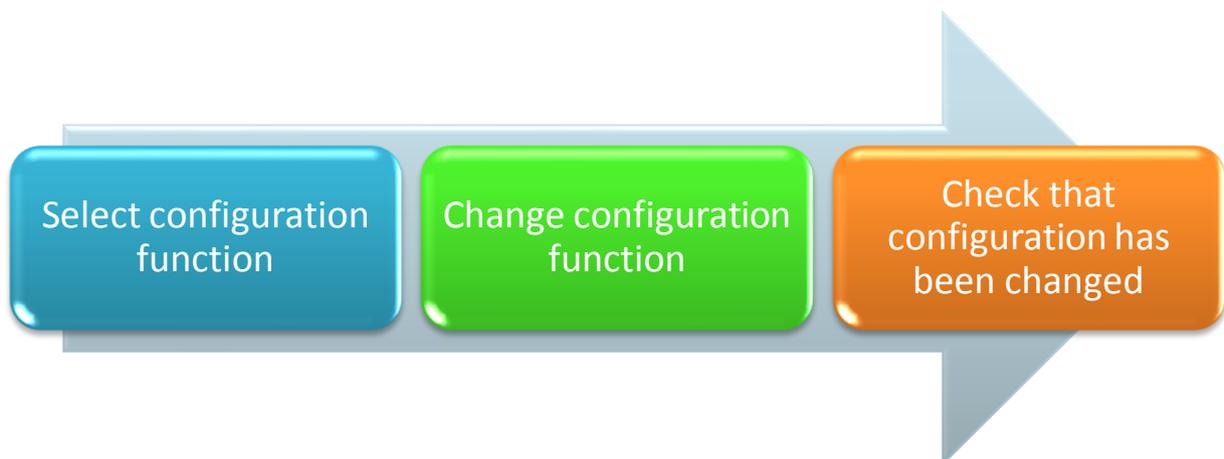Why would you change the configuration of a PC?

When working with a personal computer you can change the configuration of the following:

Function	Purpose	Use
Date	For system timer/date. To show what date is it of that day.	For bios to work properly, it has to have correct Date and Time.

		It helps users to keep up to date. Some programs does not work correctly with incorrect date.
Time	To show universal time.	System timer is used to time the program. To see what time is.
Volume control	To control Audio Sound.	It is used to reduce sound volume when playing audio.
Display properties	To displays settings and options of display device.	It is used to set or change display properties so that it displays the way user want.
Desktop theme	A desktop theme is a customized graphical user interface (GUI). It replaces a computer's ordinary sounds, icons, pointer, wallpaper or screensaver with something designed to reflect the interests of the user.	The customized themes gives you a new look of your windows graphical user interface.
Screen saver	To run on the screen when it is unattended.	Prevent desktop theme to get stuck or print shadow image on the screen (Only CRT Monitor).
Screen pixel resolution	To adjust screen resolution.	To make Windows Fonts either smaller of bigger.
Keyboard language	A layout in which keyboard communicate with CPU.	CPU understands keyboard inputs depending to it layout. Keyboard is used to communicate between the user and the computer (CPU)

2.2. Selecting and changing the configuration

Reference: SO 2/AC 2 to 4

Select configuration function

Change configuration function

Check that configuration has been changed

Put it into practice

Change the configuration of each of the functions listed below:

- Date

- Time

- Volume control

- Display properties

- Desktop theme

- Screen saver

- Screen pixel resolution

- Keyboard language

Note: Need to do at least 2

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When changing the configuration it is important that you check that it has been done correctly.

Use PC operating system functions

At the end of this module you will:
- ☑ Understand the purpose and use of various PC operating system functions
- ☑ Be able to select various PC operating system functions
- ☑ Be able to use various PC operating system functions

2.3.   The purpose and use of PC operating system functions

The four basic functions of a computer are input, processing, output and storage. Input is the information which is entered into the computer. Processing is performing operations on or manipulating data. Output is the result of the data processing. Storage refers to devices that can retain the data when the computer is deactivated.

> **Operating system**
> The operating system is the most important program that runs on a computer. Every general-purpose computer must have an operating system to run other programs. Operating systems perform basic tasks, such as recognizing input from the keyboard, sending output to the display screen, keeping track of files and directories on the disk, and controlling peripheral devices such as disk drives and printers.

Function	Purpose	Use
Format a disk	To cleanup a disk.	To prepare for re-use.
Install software	To install a software that user need to run.	Each software you are installing has different use i.e. Install Windows 8 if you need to use it.
Install hardware	Assembling hardware.	Assemble hardware before you install drivers or its software.
Uninstall software	To remove the software.	Its use is to get rid or clean unwanted software.
Screen print	To capture image of a window.	For future reference. To save that image as another file

2.4.   Selecting functions

Reference: SO 3/AC 2

To select functions you use the following process:

Select the function either via the keyboard or using the control panel or main settings dialogue associated with the operating system. Alternatively, wait for the OS to prompt the user in response to a hardware change or device connection.

For example :

Formatting a disk
To Format a disk, the disk can be selected from the file explorer interface. Right clicking on the disk drive will launch a menu which includes the option to format that drive.

Installing software
Inserting a disk with an autorun facility or double clicking on a downloaded executable file (.exe) will automatically prompt the user to begin the installation process.

Installing hardware
The attachment of a new hardware device will be detected by most modern operating systems and a prompt will direct the user if an additional piece of software (called a driver) is required to allow the OS to communicate with the new device.

Uninstalling software

The control panel or main settings dialogue associated with the operating system provides the option to uninstall programs. Once this option is selected the user can select from the list of installed programs and begin the uninstall process.

Screen Print
Screen print is another basic function which allows the user to capture the information currently displayed on the monitor as an image file. This can be instigated in response to keyboard input and the Print Screen function will be a standard function available via a keyboard key.

2.5. Using operating system functions

Reference: SO 3/AC 3 & 4

Put it into practice

Use the PC operating system functions listed below:

- Format a disk
- Install software
- Uninstall software
- Print screen (screen print)

Note: Need to use at least 3

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3. Use operating system utilities

Reference: SO 4

At the end of this module you will:
- ☑ Be able to start various system utility programs
- ☑ Be able to input appropriate information into a utility program
- ☑ Be able to close operating system utilities

3.1.   What are operating system utilities?

Utilities
Are programmes that perform very specific tasks, usually related to managing system resources. Operating systems contain a number of utilities for managing disk drives, printers, and other devices. Utilities differ from applications mostly in terms of size, complexity and function. For example, word processors, spreadsheet programs, and database applications are considered applications because they are large programs that perform a variety of functions not directly related to managing computer resources.

Function	Purpose	Use
Diskcopy	Copies the contents of the floppy disk in the source drive to a formatted or unformatted floppy disk in the destination drive.	Used without parameters, diskcopy uses the current drive for the source disk and the destination disk.
Scandisk	ScanDisk is a diagnostic utility included in MS-DOS and Windows. It checks and repairs file systems errors on a disk drive.	It is used to check, scan disk, repair or recover cross linked files.
Recycle bin	To move deleted files temporally to a location called the Recycle Bin.	The Recycle Bin is a special directory where deleted files are stored in the event that you need to recover them.
Calculator	Calculator's purpose is for calculation	It is used for maths calculation
File editor	Its purpose is to edit files	Editing basic text files i.e. Notepad

3.2.   Starting system utility programs

Reference: SO 4/AC 1

Put it into practice

Start the system utility programs listed below:

- Diskcopy
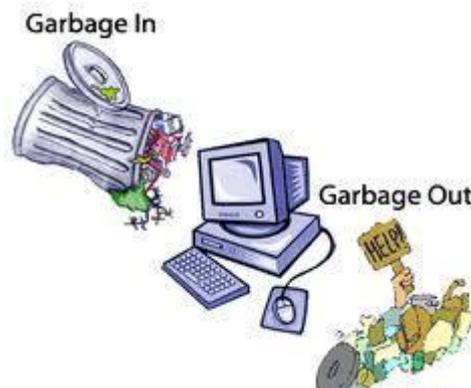- Scandisk
- Recycle bin
- Calculator
- File editor

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3.3. Giving input to the utility

When using a utility it is important to understand what you are trying to achieve. Computers work on a principle known as GIGO – 'Garbage In Garbage Out'. This means that if you put the wrong information into a computer you cannot expect to get the correct information out.

Put it into practice

Start the system utility programs listed below:

- Diskcopy
- Scandisk
- Recycle bin
- Calculator
- File editor

Note: Need to use at least 2

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3.4.   Closing the utility

Reference: SO 4/AC 4

Put it into practice

Close the utility you have been working on.

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