

SOFTWARE



1.- SOFTWARE

A computer includes some peripherals that help it to connect to the world; but a computer with these peripherals connected to the electricity without anything more is useless. It needs the programs to work.

We called **software** the group of programs, operating systems and applications needed to do a work. It is another name for the programs that run on a computer.

We can classify software as:

- **Software of the system.** This group includes:
 - Operating system: It is the base of the programs of any computer. It allows working with the computer and on it the rest of the programs are installed.
 - Drivers: They are the programs that allow the communication between the operating system and peripherals.
- **Software of development.** These programs used to create other programs. They are the tools used to write programs. Software, are known for programming languages and nowadays there are a lot (Java, C++, Pascal, Cobol, PHP, etc.). **Programming language** is an artificial language that can be used to write programs which control the behavior of a machine, particularly a computer.
- **Applications.** Software that is designed to do useful job for people. They run on the software of the system. Examples: Word processing, Spreadsheets, Database generators, Presentation software, Web browsers, Email software, etc.

APPLICATION SOFTWARE

To actually carry out your tasks on the computer, you need to use application software – programs that relate to the things you want to do.

- **Word processing** is the preparation of typed documents that contain mainly words and some pictures. A word processor enables you to manipulate text. You can move whole blocks of text around. You can set the size and shape of your text. You can check your spelling and grammar as well as save and keep a document. An example is Microsoft Word.
- **Desk Top Publishing (DTP)** is like word processing but makes it easier to manage the layout of text and pictures on the page; for example, in columns as in a newspaper. Many word processors have features similar to DTP software but often do not handle columns as well as DTP software, which is designed to do this. An example is Microsoft Publisher.
- **Spreadsheet** is a table of numbers (mostly) arranged in rows and columns with related charts and graphs. Some of the numbers may have been calculated using others in the table, so if you change any of them, a spreadsheet will automatically re-do the calculation. An example is Microsoft Excel.
- **Database** software is used for managing records. Even people who never used a computer are affected by the use of this kind of software, since database software is used to keep records that relate to people; for example a supplier of domestic electricity will have at least the name, address and meter reading for all its customers. A database stores the records and also provides many tools for handling and investigating the data it contains. An example is Microsoft Access.
- **Graphics** software is used to manipulate pictures and drawings. Graphics software can be used to produce original art on the computer. You can also open existing pictures and photographs and change them. You can add, distort or erase parts of a picture, and resized it. An example is Micromedia Fireworks, which can be used with pictures and drawings represented in bitmapped or vector graphic form.

- **Multimedia presentation** software is used to prepare a talk for an audience. The monitor display is projected onto a very large screen during the talk. A presentation will consist of a series of slides with mainly text and graphics, and notes for the speaker. An example is Microsoft Power Point.
- **Web browser.** In order to access the Web you must have web browser software running on your computer. When you are connected to the Internet and you first run your web browser, the home page will be displayed. You can now surf the Internet by using your mouse to click on links or you can enter the web address or URL (uniform resource locator) of the web site you want to access. A search engine allows you to search the Web by entering key words that describe the information you are looking for. Microsoft Internet Explorer and Netscape Navigator are commonly used web browsers, and Yahoo! And Google are popular search engines.
- **Web site writer** software is used to create a web site. A web site is a structured collection of web pages that is accessible via the Internet. Web pages usually include text and/or graphics, and are written using html (hypertext markup language) or software that generates html. Examples are: Arachnophilia, Macromedia Dreamweaver and Microsoft FrontPage.
- The **e-mail software** that most users are familiar with is an e-mail client running on their computer. Using this you can send and receive e-mails. You can filter the incoming e-mail so that unwanted e-mails (spam) are removed. An example is Microsoft Outlook.
- **Educational software packages.** There are many educational software packages. A particular package might, for instance, teach you how to type. It could look at the keys you press, to measure your speed and accuracy, and could set up personalised typing lessons to help improve your typing.

- ^ **Single purpose application software** usually covers a single, broad application area, such as word processing. Even so, you can apply such a program in many different contexts. Single purpose application software is widely used and is often preinstalled on computers when you buy them. Such software tends to become very familiar to employees and the general public.
- ^ **Integrated application software** packages tend to offer many single purpose application programs bundled into one package (e.g. Microsoft Office or Star Office), or a single program for many general purposes (e.g. Microsoft Works or Claris Works). The software is designed so that data can be transferred easily between different parts of the package. For example in Microsoft Office, a spreadsheet prepared in Excel can be copied and pasted into a Word document.
- ^ **General purpose software.** Single purpose application software and integrated software packages are both referred to as general purpose software. These are usually off-the-shelf software packages – you can walk into a shop and buy them off the shelf.
- ^ **Specialist application software** provides the tools for a specific task, rather than for a broad application area. An example of this could be a program especially for preparing and printing compact disk labels. Such software provides limited word processing and drawing facilities but would not be suitable for general purpose typing or drawing. Such a program would make easier for people who produce such labels as part as their jobs, but would not be suitable more generally for a writer or artist.
- ^ **Profession-oriented application software** is a specialist program that sets out to meet the needs of people in a particular profession. Specialist application and profession-oriented applications software both provide extra features suited to a special purpose. Profession-oriented software, however, also aims directly to meet the needs of a particular profession, and not merely a particular purpose.
- ^ **Custom-written software.** This is software that has been uniquely created only to meet of a particular business or individual.

OS SOFTWARE AND GRAPHIC USER INTERFACES

The Operating System (OS) controls the computer, and without it you could not make use of the computer. The OS is software that runs between the hardware and applications software. It enables applications software to use the computer's hardware and other resources. The OS has many functions, which include:

- **Input and output control.** The OS controls all input and output and the transfer of data within the computer.
- **Error handling.** The OS manages error handling. For example, when you are printing something and the printer is out of paper, it sends a signal to the computer. The OS receives this signal, interprets it and displays a message on the screen that you can understand. Errors that arise while a program is running are known as run timer errors.
- **Providing a user interface.**
- **Resource allocation.** The OS ensures that all the software has access to the different resources it needs to run successfully. In fact, the OS has the task of controlling the use of any device that several programs might be trying to use at the same time. The OS controls communications between the various devices that make up the computer system. For example, when we move the mouse, we expect the mouse pointer to move on the screen. What actually happens is that a part of the OS will display a mouse pointer at a particular location on the screen, and will control its movement as the actual mouse moves and sends signals to the computer. On a PC, the OS will handle resource allocation during multitasking, that is, when one user is using more than one piece of software at a time. For example, when a user is running Word and Excel at the same time.
- **Allowing users to give commands to the computer.** The OS enables you to give commands to the computer. You could give the computer commands in different ways:
 - Typing commands in command line. The following example is for Microsoft DOS (disk operating system).

```

C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\Documents and Settings\Roger Crawford>A:

A:\>dir
Volume in drive A has no label.
Volume Serial Number is 0000-0000

Directory of A:\

03/04/2005  12:23                19,968  letter.doc
03/04/2005  12:23                19,968  summary.doc
03/04/2005  12:24   <DIR>      administration
03/04/2005  12:26                19,968  agenda.doc
16/11/2004  17:08            847,872  report.doc
             4 File(s)              907,776 bytes
             1 Dir(s)              549,376 bytes free

A:\>_

```

Figure : A command line user interface

- Use a Graphical User Interface (GUI), and navigate and select using a mouse. A GUI will have windows, icons, menus and a pointer controlled by a device such as a mouse. Menu options and icons are selected by pointing and clicking the left-hand mouse button.
- Menu-driven user interface.

The OS interprets these commands however they are given to it and controls the computer so that it carries out the task you have commanded.

- **File handling.** The OS handles files, allowing you to name them and save them on backing storage. It provides tools so that you can manage these files; for example it allows you to rename, delete and move them to different locations on a disk or copy them to different backing storage media.

Filenames

File Extension	Association
.doc	Document files associated with a word processor; e.g. Microsoft Word
.txt	A text file associated with a basic text editor; e.g. Notepad
.htm	A file containing html associated with a Web browser
.bmp .gif .jpg	Graphic files
.exe	An executable or program file
.hlp	Help files associated with help documentation built into a program
.bat	A batch file containing a series of commands to the operating system
.sys	System files

A file is given a name to identify it. A complete filename has two parts: the name and the extension. The name identifies the file and the extension identifies the nature of the file.

UTILITIES

There are other kinds of system software, some of which are often included as a 'bundle' along the OS. Disk optimising and disk error checking programs are examples of this. Antivirus software helps protect your system from dangerous viruses that may seek to destroy the data on your computer. Such software is often referred to as utility software because it does tasks that help you maintain your computer, but which have no real meaning if a computer is not being used. Utility software often begins life as an add-on to the OS but can be later integrated with the OS so that it becomes a part of it.

SOFTWARE LICENSING

When buying software, purchasers may acquire some or all of:

- A copy of the software on a CD-ROM, or access rights to a web site to download the software so that the purchaser can install the software.
- A manual explaining how to use the software.
- A licence to use the software.

There are three general categories of software with distinctive licensing arrangements. These are commonly known as:

- Licensed software. It is sold.
- Public domain software. It is free.
- Shareware. It is licensed software that is initially distributed freely in the manner of public domain software. Users may install the software and try it out. However, if they decide to make regular use of the software they must pay a licence fee. Where the licence fee is not paid, use of the software is illegal.