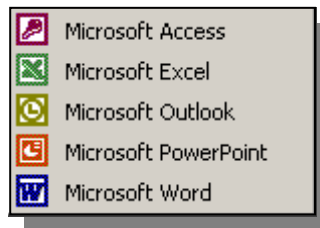

3.0 Computer Software

Software refers to the programs that are loaded onto a computer. Microsoft Word, Excel, Access, PowerPoint, Internet Explorer etc are all software programs.



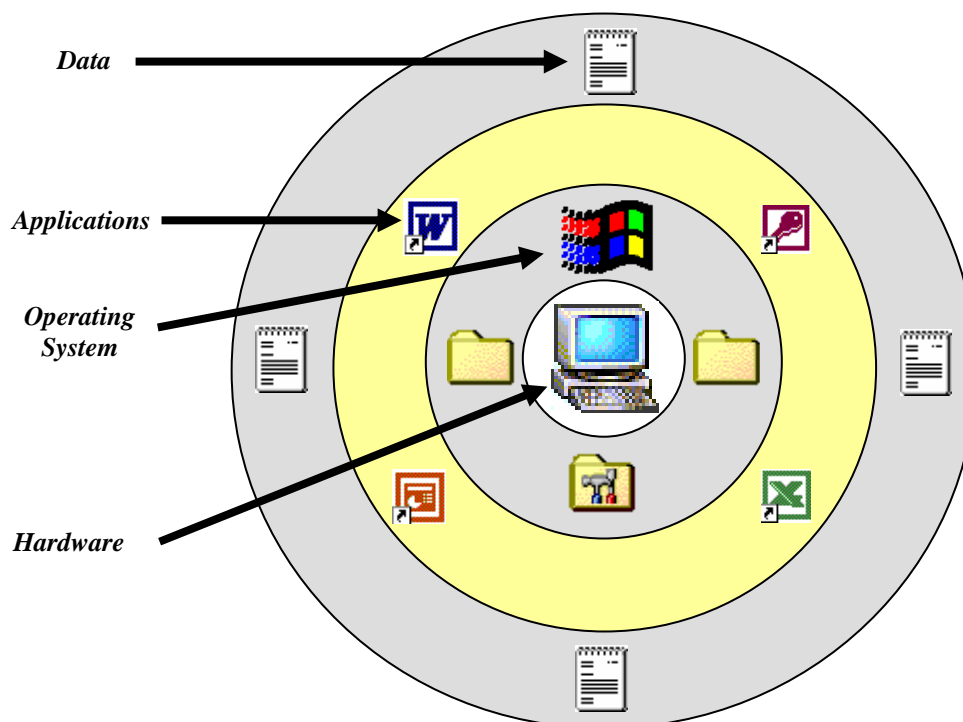
Systems software is the software that runs the computer - this is usually called the operating system. Microsoft Windows is the operating system a lot of people use. However, there are other forms of systems software such as Unix, Linux, OS2, BeOS, OS-X (MacOS) and so on.



As outlined in the diagram below, users enter **data** into an application package.

The **application** provides an interface to a number of functions / operations.

The **operating system** received messages from applications and instructs the **hardware** system to process and/or calculate data. The results are passed back up the chain of events to the user.



Model of Operating Systems and Application Software.

- **Operating Systems and the GUI (Graphical User Interface).**

Older operating systems, like DOS (Disk Operating System) were purely text-based - if you wanted to do something, you had to type in a string of commands. The Windows operating system provides a GUI (Graphical User Interface) that allows a much easier method of issuing commands and running applications.

The GUI is a system that lets you use the PC without having to know too much about it. Programs and commands are represented as little pictures (called icons). To run a program, you move the pointer over it using the mouse and click on it with the mouse button. You can also use keyboard shortcuts to run programs and commands.

Data is not the same as software - for example, if you wrote a letter using Microsoft Word, Word would be the software, but the letter you wrote would form the data. Anything you create or save onto your hard disk or floppy disk consists of data.

- **Common Software Applications**

Word Processing: Used for creating, formatting and checking text documents. Most word processor applications can also perform the functions of desktop publishing to incorporate graphics and page layout. Examples include Microsoft Word, Lotus WordPro and Corel WordPerfect.

Spreadsheets: Consists of a table containing rows, columns and cells. When numbers are entered into cells, formulae can be applied – enabling complex calculations to be carried out. Examples include Microsoft Excel, Lotus 1-2-3, Corel QuattroPro.

Database: Enables you to store, organise and retrieve information. Databases can search through thousands of records very quickly and display data in a suitable format. They can be used to store many different types of information such as customer details, patient records and so on. Examples include Microsoft Access, Lotus Approach and Corel Paradox.

Presentation: Enables you to create sophisticated business presentations that can be displayed as an on-screen slide show or printed onto transparencies. Logos, graphics, text and charts can be added to slides and may also include animations. Examples include Microsoft PowerPoint, Lotus Freelance Graphics and Corel Presentations.

Communication: Allows you to send and receive faxes and email and to also browse the Internet. Examples of email programs include Microsoft Outlook, Microsoft Outlook Express and Lotus Notes. Examples of Internet browsers include Microsoft Internet Explorer and Netscape Navigator.

Accountancy/Payroll: There are many examples of pre-designed databases to perform common functions, such as keeping accounts or managing staff (Sage Line50 or Simply Personnel etc). These database applications also come with functions for working out tax liabilities, NI contributions, pension payments and so on. Many companies may also have their own 'in house' software to fulfil these functions.

Desktop Publishing: These applications control page layout in documents and generally require other applications to supply the content in the form of text/graphics. Often used for the generation of posters, newsletters and leaflets. Examples include Microsoft Publisher, Serif PagePlus, Adobe PageMaker, Quark Xpress and Adobe InDesign.

Graphics/Design: Graphics programs can perform a wide range of functions such as editing bitmaps, drawing, painting, 3D graphics, animations, video, multimedia and web design. Examples include Adobe Photoshop, JASC Paint Shop Pro, CoreDRAW, AutoCAD and Adobe Premiere.

Web Design/Development: These applications allow users to graphically design and build either a simple web-page or a full web-site. You can incorporate text, graphics, animations, web-objects (Flash, Shockwave) etc. Examples include Macromedia DreamWeaver and Microsoft Frontpage.

Multimedia / Games: These applications incorporate text, graphics, sound, video and animations. Educational software often uses a lot of multimedia techniques. Games require lots of system resources and can consist of simple desktop games (cards, tetris etc) or the very latest in 3D simulations and arcade 1st person perspective adventures.

- **Software Development**

The design of IT systems can be a complex process that requires careful planning and management.

The process of systems development is a cycle of **analysis, design, programming, testing and implementation.**

