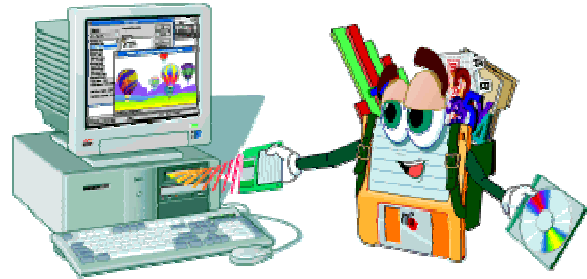## Software Packages

Software is a set of electronic instructions that tell your computer what to do. Without software, a computer is like an airplane without a pilot. There are two types of software: System software and application software.

System software consists of programs that control the operations of the computer and its devices.

System software also serves as the interface between the user, the application software and hardware.

Two types of system software are the operating system and utility programs.

Application software refers to programs that perform specific tasks for users. Application software (e.g., Word, Lotus 1-2-3) helps you to write letters, analyze numbers, manage finances, draw pictures, and even play games.

Most application software is available as packaged software that can be purchased in retail stores or on the Web.

Many application software packages are also available as shareware, freeware, and public-domain software. However, such packages usually have fewer capabilities than packaged software.

Common types of application software include

Word processing software

Spreadsheet software

Database management software

Presentation software

Computer-aided design software

Desktop publishing software

Accounting software

Paint and image editing software

Video and audio editing software

Multimedia authoring software

Web page authoring software

Educational software

Software is available in a variety of packages:
- Off-the-shelf
- Tailor-made

Off the Shelf software is software which is ready available in a computer shop (or retailer).

Advantages:

Disadvantages:

Tailor Made (custom-made) software is software which is made according to the needs of the user.

Advantages:

Disadvantages:

Customisable software

License

Software license gives the user the right to use the software in the licensed environment, some software comes with the license when purchased off the shelf, or an OEM license when bundled with hardware. Other software comes with a free software license, granting the recipient the rights to modify and redistribute the software. Software can also be in the form of freeware or shareware.

Freeware is copyrighted software provided at no cost to users.

Shareware is copyrighted software that is distributed free for a trial period, and payment is required for using the software beyond that trial period.

Public-domain software is free software donated for public use and has no copyright restrictions.

Single -user license where the software can be used on only one computer. This is the usual type of license.

Multi-user license where an organization can install the software on an agreed number of computers. A reduced fee is paid for each computer.

Site license where any number of computers may use the software at a single location. One payment is made to allow the multiple installation. These are especially common in the UK educational sector

End User License Agreement

An End User Licence Agreement is the right to use software. Is a contract between the publisher and user. Establishes terms of use of software
Can use software but
- Without change
- Without reselling

Always read the small print!

Application Packages

Application programs or packages (*groups of programs*) are designed to enable the computer to tackle a specific task, such as writing a letter.

Examples:

Word processing - for writing letters, reports and other documents.
Examples: Microsoft Word, Word Perfect.
Facilities include: editing of text, font & size changing, find & replace, spell checker, word count, mail merging (*combining data from a database with text in a standard letter to produce customised letters*).

Desk-top Publishing (DTP) - for producing posters, leaflets and newspapers.
Examples: Microsoft Publisher, Adobe PageMaker.
Facilities include: ability to import text and images from other programs or from disk plus ability to position them individually on the page. Usually have some text editing tools included.

Data handling - for creating databases.
Examples: Datapower2, Pinpoint, Microsoft Access.
Facilities include: creation & editing of fields, sorting and searching records and displaying data in graphical or chart form.

Spreadsheet modelling - for producing invoices and cost plans. Can be used to create models, simulations or expert systems for others to use.
Examples: Microsoft Excel, Lotus 1-2-3.
Facilities include: entry of formulas to perform calculations, also ability to display data in graphical and chart form. Acts rather like a multifunction pocket calculator, but once set up for a particular purpose there is no need to remember all the formula and functions each time you use it.

Graphics package - for drawing and painting.
Examples: Microsoft Paintbrush, Serif Photoshop.
Facilities include: cropping, resizing, various digital filters, drawing, painting and editing tools.

Computer-Aided Design (CAD) - for floor layouts and product design.
Examples: 2D Design, AutoCad. Facilities include: various drawing and editing tools and ability to scale accurately, sometimes in three dimensions and with ability to rotate in any direction.

Presentation software - for demonstrations and lectures to live audiences.
Examples: Microsoft Powerpoint, RM Illuminatus.
Facilities provided to produce and edit on screen multimedia presentations involving text, images, video and sound.

Music (Audio) software - for composing a musical performance.
Example: Sibelius.
Facilities provided to create, edit, store, print and play scripts; to record, process and replay a variety of sounds via input from a music keyboard and other "midi" instruments.

Programming Languages

HIGH and LOW level Languages

Characteristics of LOW Level Languages:
- They are machine <u>oriented</u>
- Each assembly language statement generally translates into <u>one</u> machine code instruction

Characteristics of HIGH Level Languages:
- They are not machine oriented
- They are <u>problem</u> oriented
- Statements usually resemble <u>English</u> sentences or mathematical expressions
- <u>Easier</u> to learn and understand
- Each statement will be translated into <u>several</u> machine code instructions.

Generations of Programming Languages

4th Generation	4th GLs

3rd Generation	High Level Languages

2nd Generation	Low Level Languages

1st Generation	Machine Code

Exercise:

1. Distinguish between tailor made and Off-the-Shelf software?
2. Give three advantages for each type of software mentioned in question 1
3. What is customizable software?
4. Mention two types of software licenses
5. Highlight the main differences that exist between these two types of licenses
6. Distinguish between application and system software.
7. Differentiate between Low level and High level languages