4 Hardware and Software

4.19 Hardware and Software

- **Hardware** is the electrical or electro-mechanical parts of a computer and its input/output and storage devices.

- **Software** comprises all the programs that are written to make computers function.

Software can be classified into **system software** and **application software**.

System Software

System software is the software needed to run the computer's hardware and application programs.

- An **operating system** is a set of programs that lies between application software and the computer hardware.

  Functions include hardware **resource management** and provision of a **user interface**.

- **Utility software optimises the performance** of the computer or perform tasks such as backing up files, compressing and encrypting data before transmission, firewall, etc.

  - **Disk defragmenter** reorganises a hard disk so that files which have been split up into blocks and stored all over the disk is **recombined in a single series of sequential blocks**. This makes reading a file quicker.

  - **Virus checker** checks your hard drive and internet downloads for viruses and remove them.

- **Libraries** are ready-compiled programs which can be run when needed.

  Libraries in Windows have a .dll extension.

- **Programming language translators** translate program code written by a programmer into machine code which can be run by the computer.

Application Software

Application software **performs specific user-oriented tasks**.

- **General-purpose software** can be used for many different purposes.

  E.g. word-processor, spreadsheet.

- **Special-purpose software** performs a single specific task or set of tasks.

  E.g. hotel booking systems.

- Software bought **off-the-shelf** are ready to use.

- **Bespoke software** package are specifically written by a team of programmers for a particular organisation, to satisfy their particular requirements.

Off-the-shelf software

- Cheaper to buy, as the cost is shared among all other people buying the package.

- It is **ready to be installed** immediately.

- Likely to be **well-documented, well-tested and bug-free**.

It may also contain a lot of features never used.