



## 1.2.2 Nature of Applications

### Types of Software

Programs that run on hardware are called software.

Software can be broadly divided into two main categories.

- **Systems software**
- **Application software**

### System Software

System software consists of programs that manage and control the computer's hardware and provide a platform for application software to run. The operation system is a system software, as are utility programs, library programs and device drivers.

### Operating System

The operating system performs many functions including resource management and providing a user interface. It manages the computer's hardware and application software so users can run application software without needing to interact directly with the hardware. ([topic 1.2.1](#))

### Utility Programs

Utility software is designed to optimise the performance of the computer by performing maintenance in the background.

Some functions of a utility program may be:

- **Automated backup** – An automated backup utility regularly creates copies of files so they can be restored if the original files are lost, damaged or corrupted.
- **Automated updating** – An automatic updating utility will make sure software is up to date by checking on the internet for updates. Updates can be automatically downloaded and installed, depending on the software and system settings. Updates may include bug fixes and improvements and improved security.
- **Checking for viruses** – Antivirus programs scan files and system activity for viruses and other malicious software and can remove or quarantine detected threats.
- **Compression** – Uses compression methods to reduce the amount of storage space required by a file. Depending on the compression method used, some information may be lost.
- **Disk defragmentation** – Reorganises fragmented files on a hard disk so that the data for each file is stored in more contiguous blocks. This can reduce the time required for the drive's read/write head to access the data. Defragmentation is mainly relevant to magnetic hard disk drives; it is not normally required for SSDs.





## Application Software

Application software is software that performs tasks for the user.

### General Purpose

General-purpose software is designed to perform a range of different tasks rather than one specific task. Examples include word processors, spreadsheets and image-editing software. For example, image-editing software can be used to manipulate photographs, create graphics and produce animations

### Special Purpose

Special-purpose software is designed to perform a specific task or set of tasks. Examples are programs to record stock or payroll in a shop, systems for scanning fingerprints, hotel booking, and many, many more. Special-purpose software may be purchased off the shelf or developed as bespoke software for a particular organisation.

| Off the shelf                                                                      | Bespoke Software                                                                                                            |
|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Usually less expensive because development costs are spread across many customers. | Usually more expensive because it is developed specifically for one organisation and requires analysis of its requirements. |
| May include features that are not needed or be lacked features that are desired.   | Fully customised to the task it is to perform.                                                                              |
| Ready to use immediately when bought.                                              | May take a long time to develop the software.                                                                               |
| Used by many users, so it is often well tested and documented.                     | May take time to find and remedy bugs.                                                                                      |
| Support and updates may be available from the software provider                    | The organisation may need to pay for ongoing maintenance and support                                                        |

