Your notes

GCSE Computer Science: revision notes

Systems software and operating systems

Contents

1. Hardware and software
2. The operating system
3. Utility software
4. Device drivers
5. Key terms
6. Quick questions
7. What to do next

Hardware and software

- **Hardware** is the physical parts of a computer. **Software** is the programs that run on it.
- **System software** runs and looks after the computer itself: the **operating system** and utility programs. **Application software** lets users do tasks, such as a word processor, a web browser or a game.

The operating system

- Memory management and multitasking: shares RAM between the programs that are running, and uses virtual memory when RAM is full.
- Processor management: decides which program gets the CPU's time, so several programs seem to run at once.
- Device (peripheral) management: uses **device drivers** to communicate with **hardware** such as printers.
- User interface: lets people use the computer, such as a graphical user interface (GUI) or a command-line interface.
- File management: organises files into folders, and lets users create, name, move, copy and delete them.
- User and security management: user accounts, passwords and access rights.

Utility software

- Utility programs help to maintain the computer: **defragmentation**, compression, encryption, backup and anti-malware **software**.
- **Defragmentation** moves the parts of files on a hard disk drive so they are stored next to each other, which makes them faster to read. SSDs don't need it: they can reach any location equally fast.

Device drivers

- A **device driver** is **software** that lets the **operating system** communicate with a particular hardware device.

Key terms

Hardware	The physical parts of a computer system.
Software	The programs that run on a computer.
System software	Software that runs and maintains the computer, such as the operating system.
Application software	Software that lets users do tasks, such as a web browser.
Operating system	The system software that manages the hardware, software and users.
Utility software	Programs that help to maintain the computer, such as backup or defragmentation.
Device driver	Software that lets the operating system communicate with a hardware device.
Defragmentation	Reorganising a hard disk so the parts of each file are stored together.

Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. What is the difference between hardware and software?
2. Which of these is application software?
3. What does the operating system use a device driver for?
4. What is multitasking?
5. What does defragmentation do?
6. Why don't SSDs need defragmenting?
7. Which operating system function organises files into folders?
8. What is a GUI?

Answers

1. Hardware is the physical parts; software is the programs
2. A web browser
3. To communicate with a hardware device
4. Running several programs at what seems like the same time
5. Moves the parts of files on a hard disk so they are next to each other
6. They can reach any location equally fast
7. File management
8. A graphical user interface, with windows, icons, menus and a pointer

Your notes

What to do next

Practise 12 questions on this topic

Try 5 exam questions, with mark schemes

Read the lesson, one step at a time

Free revision for GCSE and KS3 at lycolearn.co.uk. Some notes are for one exam board only, and say so in brackets.

Your notes