Hardware

IGCSE Computer Science · Vocabulary in context

Word	Example
central processing unit /ˈsentrəl ˈprəʊsesɪŋ ˈjuːnɪt/	The **central processing unit** carries out program instructions.
instructions /ɪnˈstrʌkʃnz/	A program is a list of **instructions**.
microprocessor /ˌmaɪkrəʊˈprəʊsesə/	A **microprocessor** is a CPU on a single chip. CPU
integrated circuit	An **integrated circuit** is a tiny chip with many parts.
Von Neumann architecture /vɒn ˈnɔɪmən ˈɑːkɪtektʃə/	In the **Von Neumann architecture**, programs and data share one memory.
arithmetic logic unit /əˈrɪθmətɪk ˈlɒdʒɪk ˈjuːnɪt/	The **arithmetic logic unit** does maths and logic.
control unit /kənˈtrəʊl ˈjuːnɪt/	The **control unit** tells the other parts what to do.
registers /ˈredʒɪstəz/	The processor has a few fast **registers**.
buses /ˈbʌsɪz/	**Buses** are the wires that link the parts of the computer.
address bus /əˈdres bʌs/	The **address bus** carries the memory address.
data bus /ˈdeɪtə bʌs/	The **data bus** carries the data.
control bus /kənˈtrəʊl bʌs/	The **control bus** carries signals such as “read” and “write”. “read” “write”

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program counter /ˈprəʊgræm ˈkaʊntə/	The **program counter** holds the address of the next instruction.
memory address register /ˈmeməri əˈdres ˈredʒɪstə/	The **memory address register** holds the address to read from or write to.
memory /ˈmeməri/	The CPU fetches each instruction from **memory**. CPU
memory data register /ˈmeməri ˈdeɪtə ˈredʒɪstə/	The **memory data register** holds the data just read from memory.
current instruction register /ˈkʌrənt ɪnˈstrʌkʃn ˈredʒɪstə/	The **current instruction register** holds the instruction being carried out.
accumulator /əˈkjuːmjʊleɪtə/	The answer to the sum goes into the **accumulator**.
fetch–execute cycle /fetʃ ˈeksɪkjuːt ˈsaɪkl/	The **fetch–execute cycle** repeats billions of times each second.
fetch-execute cycle /fetʃ ˈeksɪkjuːt ˈsaɪkl/	In the **fetch-execute cycle**, the CPU gets an instruction, then carries it out. CPU
Cache /kæʃ/	**Cache** is fast memory close to the CPU. CPU
cores /kɔːz/	My laptop's processor has four **cores**.
clock speed /klɒk spiːd/	A higher **clock speed** means more instructions each second.
instruction set /ɪnˈstrʌkʃn set/	The **instruction set** is the list of commands a CPU understands. CPU
machine code /məˈʃiːn kəʊd/	The processor runs **machine code**: only 0s and 1s. 0 1

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embedded system /em'bedɪd 'sɪstəm/	A washing machine has an **embedded system** inside it.
general purpose computer	A laptop is a **general purpose computer**: it can do many jobs.
barcode scanner /'bɑːkəʊd 'skænə/	The **barcode scanner** reads the black and white lines.
QR code scanner /ˌkjuː 'ɑː kəʊd 'skænə/	A **QR code scanner** reads square codes with a camera.
optical mouse /'ɒptɪkl maʊs/	An **optical mouse** uses light to track movement.
light /laɪt/	A sensor measures the amount of **light** in a room.
sensors /'sensəz/	**Sensors** measure things like heat, light and sound.
touch screen /tʌtʃ skriːn/	Tap the **touch screen** to choose an option.
2D scanner	A **2D scanner** copies a paper page into the computer.
3D scanner	A **3D scanner** records the shape of an object.
resistive /rɪ'zɪstɪv/	A **resistive** screen works when you press it.
capacitive /kə'pæsɪtɪv/	A **capacitive** screen feels the charge in your finger.
infrared /ˌɪnfrə'red/	A TV remote uses **infrared** light.
acoustic	An **acoustic** sensor detects sound.
accelerometer /əkˌselə'rɒmɪtə/	The phone's **accelerometer** knows when you shake it.

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Word	Example
flow /fləʊ/	A sensor measures the **flow** of water in the pipe.
gas /gæs/	A **gas** sensor detects smoke or carbon monoxide.
humidity /hjuːˈmɪdɪti/	High **humidity** slows transpiration.
level	A **level** sensor checks how full a tank is.
magnetic field /mægˈnetɪk fiːld/	A magnet has a **magnetic field** around it.
moisture	A **moisture** sensor checks how wet the soil is.
pressure /ˈpreʃə/	A **pressure** sensor detects when a car is waiting at the barrier.
proximity /prɒkˈsɪmɪti/	A **proximity** sensor detects when something is close.
temperature /ˈtemprɪtʃə/	The thermometer shows the water's **temperature**.
actuator /ˈæktʃuːeɪtə/	A motor is an **actuator**: it moves the robot's arm.
LCD screen	An **LCD screen** uses liquid crystals to make images.
DLP projector	A **DLP projector** uses tiny mirrors to make the picture.
projector /prəˈdʒektə/	The teacher uses a **projector** to show slides on the wall.
LCD projector	An **LCD projector** shines light through liquid crystals.
inkjet printer /ɪŋkˈdʒet ˈprɪntə/	An **inkjet printer** sprays tiny drops of ink.

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Word	Example
laser printer /ˈleɪzə ˈprɪntə/	A **laser printer** prints pages fast.
speaker /ˈspiːkə/	A **speaker** turns electrical signals into sound.
buffer /ˈbʌfə/	A **buffer** holds data until the printer is ready.
nozzle	Ink comes out of a tiny **nozzle**.
drum /drʌm/	A laser printer uses a charged **drum** to pick up toner.
toner /ˈtəʊnə/	The black powder in a laser printer is **toner**.
fuser /ˈfjuːsə/	The **fuser** heats the toner so it sticks to the paper.
layer	Each **layer** of a network model does one job.
digital-to-analogue converter /ˈdɪdʒɪtl tʊ ˈænəlɒg kənˈvɜːtə/	A **digital-to-analogue converter** turns numbers back into sound.
Primary storage /ˈpraɪməri ˈstɔːrɪdʒ/	**Primary storage** is the memory the CPU uses directly. CPU
random access memory /ˈrændəm ˈækses ˈmeməri/	**Random access memory** loses its data when the power goes off.
read only memory /riːd ˈəʊnli ˈmeməri/	**Read only memory** keeps the start-up instructions.
volatile /ˈvɒlətaɪl/	RAM is **volatile**: when you switch off the computer, its data is lost. RAM
non-volatile /nɒn ˈvɒlətaɪl/	ROM is **non-volatile**: it keeps its data with the power off. ROM

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Secondary storage /ˈsekəndəri ˈstɔːrɪdʒ/	**Secondary storage** keeps files when the computer is off.
magnetic storage /mægˈnetɪk ˈstɔːrɪdʒ/	A hard disk is **magnetic storage**.
optical storage /ˈɒptɪkl ˈstɔːrɪdʒ/	A DVD is **optical storage**. DVD
solid state storage /ˈsɒlɪd steɪt ˈstɔːrɪdʒ/	**Solid state storage** has no moving parts.
flash memory /flæʃ ˈmeməri/	A USB stick uses **flash memory**. USB
platter	A hard disk stores data on a spinning **platter**.
track	Each **track** is a ring on the disk.
sector /ˈsektə/	A **sector** is one part of a track.
electromagnet /ɪˌlektrəʊˈmægnɪt/	An **electromagnet** picks up scrap iron.
pit	A **pit** on a CD reflects light differently from flat parts. CD
land /lænd/	A **land** is a flat part on the surface of a CD. CD
transistor /trænˈzɪstə/	A **transistor** works as a switch.
control gate	The **control gate** controls the flow of charge in flash memory.
floating gate	The **floating gate** traps charge to store a bit.

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Word	Example
virtual memory /ˈvɜːtʃuːəl ˈmeməri/	**Virtual memory** uses the disk when RAM is full. RAM
page /peɪdʒ/	Memory is split into blocks; each block is a **page**.
Cloud storage /klaʊd ˈstɔːrɪdʒ/	**Cloud storage** keeps your files on servers over the internet.
network interface card /ˈnetwɜːk ˈɪntəfeɪs kɑːd/	A **network interface card** connects a computer to the network.
media access control /ˈmiːdiːə ˈækses kənˈtrəʊl/	A **media access control** address identifies a network card.
internet protocol /ˈɪntənet ˈprəʊtəkɒl/	The **internet protocol** gives each device an address.
static /ˈstætɪk/	A **static** attribute is shared by all objects of the class.
dynamic /daɪˈnæmɪk/	A **dynamic** IP address can change each time you connect. IP
router /ˈruːtə/	A **router** sends packets between networks.

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