

GCSE Computing Terminologies

Unit	Subsection	Definition	Word
1	Basics	the four main parts of a computer system	Input, process, storage, output
1	Basics	the main printed circuit board that holds the different computer components	Motherboard
1	Basics	the part of a computer system that transforms the input into useful output	Process
1	Basics	the part of a computer system that collects and provides the computer system with data or instructions usually via a device such as a keyboard, mouse, sensors etc	Input
1	Basics	an online service that allows easier communication between people, such as Facebook	Social network
1	Basics	a device that can detect a physical property such as heat, sound, light etc	Sensor
1	Basics	the part of a computer system where information or data obtained via processing is presented to the user on the monitor or turned into useful action eg triggering an alarm, turning a motor etc	Output
1	Basics	A computer system that forms part of an electronic device	Embedded System
1	Basics	Mechanical device that is controlled by computers, e.g. robotic arm	Actuator
1	Computer Systems	The part of the computer system that allows either data or instructions to be retained for later use	Storage
1	Reliability	the average time that passes between faults occurring in a computer system	Mean Time Between Failure (MTBF)
1	Reliability	the percentage of time that a computer system is functioning correctly ('up-time') over any given year.	Availability
1	Reliability	The standard desirable availability for a computer system	Five 9s
1	Reliability	a documented process or set of procedures to recover and protect a business IT infrastructure in the event of a disaster	Disaster Recovery Plan (DRP)
1	Reliability	an arrangement where that critical parts of the system are duplicated so if a failure occurs, the other component or sub-system takes over	Hardware redundancy
1	Reliability	a procedure by which a system automatically transfers control to a duplicate system when it detects a fault or failure	Failover
1	Standards	agreed ways of doing something, written down as a set of precise criteria so they can be used as rules, guidelines or definitions	Standards
1	Standards	generally accepted ways of doing something which are not formally defined or agreed	De facto standards (de facto means 'in fact')
1	Standards	a sequential design process used in software development including requirement analysis, design, implementation, test and maintenance	Waterfall model
1	Standards	a cyclical design process used in software development where a prototype is rapidly produced, which is then repeatedly demonstrated to the customer, refined and rebuilt until it meets the customer requirements	RAD model (Rapid Application Development)
1	Standards	the current UK copyright law that protects copyright holders against the theft of their intellectual property	Copyright, Designs and Patents Act 1988
1	Standards	unauthorised copying of computer software or media	Piracy
1	Standards	the exclusive right to make copies, license, and otherwise exploit a literary, musical, or creative work, whether printed, audio or video	Copyright
1	Standards	the practice of taking someone else's work or ideas and passing them off as one's own.	Plagiarism
1	Standards	something unique that you physically create and may wish to protect using copyright law	Intellectual property
1	Standards	the primary piece of legislation covering occupational health and safety in Great Britain	Health and Safety at Work etc Act 1974
1	Standards	the UK law defining the ways in which information about living people may be legally used and handled	The Data Protection Act 1998
1	Standards	the UK legal Act preventing the use of computers for crime or malicious purposes	Computer Misuse Act 1990
1	Standards	the moral code of practice to be fair and considerate of other people	Ethics
1	Standards	the amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organization, or community	Carbon Footprint
2	The CPU	the part of a computer that fetches instructions from main memory (RAM), decodes them for meaning, then executes the commands they represent	Central Processing Unit
2	The CPU	Part of the CPU that performs all of the arithmetic and logical functions	Arithmetic Logic Unit
2	The CPU	a data storage area within the CPU	Register
2	The CPU	a register in the CPU for short term immediate storage of data used by the ALU	Accumulator
2	The CPU	the part of the fetch decode execute cycle where an instruction is retrieved from main memory (RAM) into the CPU	Fetch
2	The CPU	the part of the fetch decode execute cycle where the opcode part of the instruction is interpreted for meaning to understand what action is to be carried out	Decode
2	The CPU	the part of the fetch decode execute cycle when the CPU carries out the action that is needed	Execute
2	The CPU	the part of the CPU that controls the frequency or rate at which the fetch decode execute cycle runs	Clock
2	The CPU	the factor that determines how many operations a CPU can carry out per second	Clock speed
2	The CPU	the small amount of fast memory located inside or near the CPU which stores copies of the data from frequently used main memory locations	Cache
2	The CPU	the type of cache memory located inside the CPU, which the fastest and most expensive type of memory	L1 cache
2	The CPU	the cache memory located near to the CPU	L2 cache

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2	The CPU	a type of CPU that includes two or more processors built into the same chip so that more than one application or process can be executed at the same time (in parallel)?	Multicore
2	The CPU	a type of CPU that includes two processors built into the same chip so that two applications or processes can be executed at the same time (in parallel)?	Dual core
2	The CPU	a type of CPU that includes four processors built into the same chip so that four applications or processes can be executed at the same time (in parallel)?	Quad core
2	The CPU	a traditional CPU chip that includes just one processor so that all open applications only have a share of the total processing time	Single core
2	Binary Logic	the tiny electronic components in a computer system that can be switched ON or OFF by using electronic voltage signals	Transistors
2	Binary Logic	The building block of a computer system, made from transistors, usually including two inputs that control its binary condition between ON (1) or OFF (0)	Logic Gate
2	Binary Logic	a single input logic gate which produces an output signal only when there is not a signal on its input	NOT gate
2	Binary Logic	a logic gate which produces an output signal only when signals are received simultaneously through all (usually two) input connections	AND gate
2	Binary Logic	a logic gate which produces an output signal when signals are received on any one or more of its input connections	OR gate
2	Memory	the place in a computer where the operating system, application programs, and data in current use are kept so that they can be quickly reached by the computer's processor, also known as main memory	Random Access Memory (RAM)
2	Memory	Location in main memory used to store data or instructions	Address
2	Memory	the term used to describe memory that requires power to maintain the data stored within it	Volatile
2	Memory	the non-volatile, write only, memory chip in a computer that contains the bootstrap instructions to load the operating system into RAM	Read Only Memory (ROM)
2	Memory	a type of fake main memory that extends the RAM onto the hard disk drive to allow more applications and data to be open	Virtual memory
2	Memory	a type of non-volatile memory that can be electronically erased and re-written, used on USB memory sticks, memory cards and SSDs.	Flash memory
2	Memory	any non-volatile storage device that is internal or external to the computer	Secondary storage
2	Secondary Storage	a storage technology where data is recorded by making marks in a pattern that can be read back with the aid of light, usually laser	Optical storage
2	Secondary Storage	a storage technology where data is recorded on a magnetic surface by using a pattern of magnetised dots that are created and read back using magnetic fields	Magnetic storage
2	Secondary Storage	a storage technology that stores and retrieves data using only electronic circuits, without any involvement of moving mechanical parts	Solid state storage
2	Secondary Storage	the first program that is loaded into the computer using a bootstrap program, that is that used to run other programs	Operating System
2	Secondary Storage	a computer device, such as a keyboard or printer, that is not part of the main computer	Peripheral
2	Secondary Storage	a flexible removable magnetic disk (typically encased in a hard plastic shell) for storing small amounts of data	Floppy disc
2	Secondary Storage	a magnetic media storage device that can store large amounts of data using a rapidly spinning disk coated with a magnetic material, which is accessed via a read/write head on the end of an arm that swings back and forth across the disk, often used for data storage and backup	Hard Disk Drive (HDD)
2	Secondary Storage	a type of HDD that connects to a PC using a USB cable, typically used for backup of standalone PCs	Portable Hard Disk Drive
2	Secondary Storage	a cheap magnetic media that can store large amounts of data using a flexible plastic strip with one side coated with a ferromagnetic material, usually wound between two spools contained in a plastic cartridge, and accessed via the read/write head in a tape drive, often used for data archive	Magnetic tape
2	Secondary Storage	an optical media that can store up to 640MB of data on a plastic disc coated with a metal foil layer than can be written to and read from using a laser, often used for backup and archiving small amounts of data (using writable versions), as well as distributing software (using read only versions)	Compact Disc (CD)
2	Secondary Storage	an optical media that can store up to 4 to 17GB of data on a plastic disc coated with a metal foil layer than can be written to and read from using a laser, often used for backup and archiving data	DVD
2	Secondary Storage	a solid state media device containing non-volatile flash memory, used in place of a hard disk because of its much greater speed and durability, due to its lack of moving parts, typically used in smart phones and tablets	Solid State Drive (SSD)
2	Secondary Storage	a solid state storage device typically of keyfob shape and size, used for storing small amounts of data, typically for moving files between computers for personal use	Memory stick
2	Secondary Storage	a solid state storage device in a flat card shape, typically for use in portable devices like phones and cameras	Memory card
3	Software	a program or piece of code which is capable of copying itself and typically has a detrimental effect, such as corrupting the system or destroying data	Virus
3	Software	a small program within the operating system designed to carry out a specialised task such as security, disk organisation or maintenance	Utility
3	Software	a security utility designed to detect and destroy computer viruses	Antivirus

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3	Software	malicious software that enables a user to obtain covert information about another's computer activities by transmitting data covertly from their hard drive	Spyware
3	Software	a security utility designed to detect and destroy spyware	Antispyware
3	Software	a security utility designed to prevent unauthorized access to or from a personal computer or private network	Firewall
3	Software	the use of computers to access data without authorisation	Hacking
3	Software	a disk organisation utility that erases all data from a storage media and prepares it to receive and store data as if new	Format
3	Software	the file transfer process where a file is copied to a new location and then the original is deleted	Move
3	Software	the file transfer process where a file is replicated to a new location but the original is retained	Copy
3	Software	operating system software which controls peripheral devices by sending them commands in their own computer language	Peripheral Management
3	Software	operating system software which automatically handles the changing memory requirements of programs	Memory Management
3	Software	to execute more than one program simultaneously	Multitasking
3	Software	a disk organisation utility that locates data fragments on a storage media and reorganises them so data from the same file are contiguous (next to each other) for improved speed of data retrieval	Defragmenter
3	Software	the system maintenance utility in Windows that shows you the programs and processes that are currently running on your computer, and provides statistics on CPU and network usage	Task manager
3	Software	the system maintenance utility in Windows that identifies unnecessary files on your hard disk and deletes them to free up disk space	Disk cleanup
3	Software	the system maintenance utility in Windows that identifies operating system software than is out of date and automatically downloads new versions	Windows update
4	Units	a type of software that gives no access to the source code, and has a licence that restricts the copying, modification and distribution of the software	Proprietary
4	Units	a type of software that makes the source code openly available to others to use and modify	Open source
4	Number	a type of software that is specially developed to the specific requirements of an individual organization or user	Custom
4	Number	a type of software that is ready-made and available for sale to the general public	Off-the-shelf
4	Number	a binary digit (0 or 1)	bit
4	Number	four binary digits, four bits	nibble
4	Number	eight binary digits, eight bits	byte
4	Number	the symbol for byte	B
4	Number	a unit of memory or data equal to 1,024 bytes	kilobyte
4	Number	the symbol for kilobyte	KB
4	Number	a unit of memory or data equal to 1,024 kilobytes	megabyte
4	Number	the symbol for megabyte	MB
4	Number	a unit of memory or data equal to 1,024 megabytes	gigabyte
4	Number	the symbol for megabyte	MB
4	Number	a unit of memory or data equal to 1,024 gigabytes	terabyte
4	Number	the symbol for terabyte	TB
4	Number	the base 2 numbering scheme used to represent all data in a computer system	binary
4	Number	the base 10 numbering scheme used in our everyday lives, also known as decimal	denary
4	Number	the number system in base 16 that can be easily converted into binary	Hexadecimal
4	Number	the error that occurs when a number becomes too large to fit into the number of bits allocated	Overflow
4	Character	the common character set that uses a 7-bit binary number to represent each of 128 possible characters	ASCII
4	Character	the common 8-bit character set used to represent each of 256 possible characters	Extended ASCII
4	Character	the 16-bit character set designed to cover all the world's major living languages (more than 65,000 characters)	Unicode
4	Character	a defined list of characters recognized by the computer hardware and software for display and printing	Character set
4	Image	short for Picture Element, the smallest unit of colour that makes up a graphic image or screen	pixel
4	Image	the extra information stored in a file such as height, width and colour depth, meaning data about data	metadata
4	Image	in a digital image, the number of bits used to indicate the color of a single pixel, also known as bit depth	colour depth
4	Image	the total number of pixels in a digital image expressed in terms of pixels wide x pixels high	resolution
4	Sound	This sound recording method has continuously changing values	Analogue
4	Sound	the conversion of a continuous sound wave to a discrete sequence of binary numbers	Sampling
5	Sound	in sampling, the amount of time between samples	Sample interval
5	Sound	in sampling, the number of samples taken per second	Sample frequency
5	Sound	in sampling, the number of bit used to encode each sample	Bit depth

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5	Instructions	an order for a computer to follow consisting of an opcode and operand	Instruction
5	Instructions	a binary code at the left hand side of an instruction representing which command or operation is to be carried out, eg add or subtract	Opcode
5	Instructions	a binary code at the right hand side of an instruction representing which value or address in RAM is to be used in the operation	Operand
5	Databases	a persistent organised store of data	Database
5	Databases	the type of database in which two or more tables are linked to each other	Relational
5	Databases	software for creating and managing database	Database Management System
5	Databases	a single person or thing about which data can be stored in a database table	Entity
5	Databases	all of the information about one person or thing in a database, often displayed as a single row in a table	Record
5	Databases	all of the records for one particular entity in a database, displayed in rows and columns	Table
5	Databases	a definition of one piece of data (an attribute) that will be stored about a person or thing eg 'age'	Field
5	Databases	a special field in a table which is unique and enables you to identify every record in that table	Primary key
5	Databases	a field in one table that is linked to the primary key in another table to form an entity relationship	Foreign key
5	Databases	the type of entity relationship where for every one record identified by the primary key, there can be many records identified by the foreign key (eg artist to albums)	One-to-many
5	Databases	the type of entity relationship where for every one record identified by the primary key, there can be only one record identified by the foreign key (eg artist to country_of_origin)	One-to-one
5	Databases	a window or screen that contains numerous fields, or spaces to enter data into one record	Form
5	Databases	a simple and efficient display of data optimised for readability and printing	Report
5	Databases	the standard language used to communicate with a database	Structured Query Language
5	Databases	a request made to a DBMS to select, update or delete data matching a specific criteria	Query
5	Databases	a condition created within a database in which the same piece of data is held in two separate places	Redundancy
5	Databases	data that is not of an allowed value, eg outside of the required range or of the wrong length or format (pattern of characters) and must be dealt with	Invalid
5	Databases	data that is within the required range and of the format expected by the program	Valid
5	Databases	an automatic check to ensure that the data entered is sensible and reasonable	Validation
6	Networks	a group of two or more computer systems connected together	Network
6	Networks	a computer network that spans a relatively small area	Local Area Network
6	Networks	a simple connection point for devices on a network that will transmit received packets on any one port to all other ports so all devices on the network can see all packets	Hub
6	Networks	a connection point for device on a network that uses MAC addresses to forward packets to the correct destination device	Network switch
6	Networks	the unique physical address assigned to network interfaces for addressing communications on a LAN	Media Access Control address (MAC address)
6	Networks	circuit board installed into a computer to allow it to connect to networks	Network Interface Card
6	Networks	a hardware device on a network that allows other devices to connect to the network using WiFi	Wireless Access Point
6	Networks	computer network in which one centralized, powerful computer (called the server) has many less powerful personal computers or workstations (called clients) connected to it	Client-server
6	Networks	Software or hardware that requests services from a server	Client
6	Networks	the central, powerful computer that provides services to clients	Server
6	Networks	a computer network in which all computers are of equal status and there is no server	Peer-to-peer
6	Networks	a network topology in which each device (workstation, server, printer) is connected to two other devices, which forms a ring for the signals to travel around	Ring
6	Networks	a network topology in which all the workstations, servers and printers are joined to one cable	Bus
6	Networks	a network topology in which each device on the network has its own cable that connects to a switch or hub	Star
6	Networks	a computer network that extends over a large geographical distance	Wide Area Network (WAN)
6	Networks	a 'chunk' or unit of data sent over a network including source address, destination address, and the data to be sent which is known as the payload	Packet
6	Networks	The amount of data that can be transferred on an internet connection in a given time period, typically measured in megabits per second (Mbps)	Bandwidth
6	Networks	The number of bits per second that can be transmitted between two points on a digital network	Bit Rate
6	Networks	the unique string of numbers separated by full stops that identifies each computer for addressing communications on a WAN (eg the internet)	Internet Protocol address (IP address)

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6	Networks	the standard set of rules defining how data is should be represented, sent and received on a network	protocol
6	Networks	an automated trial-and-error attack used to repeatedly guess passwords, most effective on passwords which may be short or use words taken or modified from a dictionary	Brute Force Attack
6	Networks	a set of rules for user passwords on a network, typically including password history, age, length, and complexity, including the requirement for characters and numbers	Password policy
6	Networks	the protocol that defines how messages are formatted and transmitted on the World Wide Web	HyperText Transfer Protocol (HTTP)
6	The Internet	a copy of a data so that it may be retrieved either individually or as part of a disaster recovery	Backup
6	The Internet	a long term store of old, inactive data	Archive
6	The Internet	The purpose of scrambling data so it can be sent securely over networks	Encryption
6	The Internet	a protocol for secure (encrypted) communication over a computer network which is widely used on the Internet	HTTP Secure (HTTPS)
6	The Internet	the current protocol for secure (encrypted) secure connection to a Wi-Fi network	Wi-Fi Protected Access (WPA)
6	The Internet	a document stipulating constraints and practices that a user must agree and sign-up to before access to a network or the internet is granted	Acceptable Use Policy (AUP)
6	The Internet	the world-wide network of interconnected networks	Internet
6	The Internet	a device that allows a network to send and receive data on telephone or cable lines	Modem
6	The Internet	a device that allows separate LANs to be connected	Router
6	The Internet	an internet service that translates domain names into IP addresses	Domain Name Server
6	The Internet	the standardized system of tags used in the creation of World Wide Web pages to achieve font, colour, graphic, and hyperlink effects	Hypertext Markup Language (HTML)
6	The Internet	an item on a web page that directs the user to another page when clicked	Hyperlink
6	The Internet	the 24-bit colour depth image format that uses lossy compression, commonly used for digital photos	JPEG (.jpg)
6	The Internet	the 8-bit colour depth image format that uses lossless compression, commonly used for simple images like clipart, logos, and also allows simple animations	GIF (.gif)
6	The Internet	the lossy compression format for Audio files, especially those downloaded from the internet	MP3 (.mp3)
6	The Internet	the lossy compression format for Video clips, suitable for short low resolution sequences on CD	MPEG-1 (.mpg)
6	The Internet	the common portable file format for capturing and sending electronic documents in exactly the intended format, especially when publishing on the internet	PDF (.pdf)
6	The Internet	the re-encoding of data to reduce the number of bits so that it may occupy less space in storage or be transmitted more quickly over networks, especially the internet	Compression
6	The Internet	a compression method that results in lost data and quality from the original version, so the compressed data is an approximation of the original data	Lossy
6	The Internet	a compression method that allows the original data to be perfectly reconstructed from the compressed data	Lossless
7	Algorithms	a notation resembling a simplified programming language with no formal rules of syntax, used in program design	Pseudocode
7	Algorithms	a type of diagram that represents an algorithm, showing the steps as boxes of various kinds, and their order by connecting them with arrows	Flowchart
7	Algorithms	a set of steps to be followed in order to solve a problem	Algorithm
7	Programming Languages	a human readable computer programming language that resembles natural language and mathematical notation	High level language
7	Programming Languages	a machine readable computer programming language that closely matches the CPU instruction set, for example assembly language and machine code	Low level language
7	Programming Languages	a low level language that uses short mnemonics to represent the CPU machine code instructions	Assembly language
7	Programming Languages	a the lowest level language where each instruction is represented in binary (0s and 1s) for processing by the CPU	Machine Code
7	Programming Languages	a program that converts a program into a functionally equivalent program in a different language	Translator
7	Programming Languages	a translator program that converts assembly language into machine code	Assembler
7	Programming Languages	a translator program that converts a high level language into machine code	Compiler
7	Programming Languages	a translator program that can analyse and execute a program line by line, often used in IDEs for debugging	Interpreter
7	Programming Languages	programming environment that has been packaged as an application program, typically consisting of a code editor, syntax checking, auto-completion, translator (interpreter and compiler) and auto-documentation	Integrated Development Environment
7	Programming Languages	the means by which a user can interact with a computer system	User interface
7	Programming Languages	Allows users to communicate with a computer system using icons and menus	Graphical User Interface (GUI)
7	Programming Languages	User interface which requires instructions to be written in text, one at a time	Command line

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7	Programming Languages	Software feature used to generate written information about the source code	Auto Documentation
7	Programming Languages	the set of rules that defines the combinations of symbols that are considered to be a correctly structured code	Syntax
7	Programming Languages	the feature of an IDE whereby as you start to type the first part of a statement it suggests or completes the statement and any arguments or variables	Auto-completion
7	Programming Languages	the smallest fragment of computer code that expresses what is to be carried out, for example an IF statement, which when compiled may result in several instructions in machine code	Statement
7	Programming Languages	a series of instructions that never branch and will always be completed in the given order	Sequential program
7	Control Flow in Imperative Languages	a branching statement controlled by a condition or conditions (eg IF and CASE statements) that determine which of two or more sequences of statements are executed	Selection
7	Control Flow in Imperative Languages	a statement that causes a sequence of statements to be repeated a number of times, (eg FOR, WHILE and REPEAT statements) usually dependent on a given condition	Iteration
7	Control Flow in Imperative Languages	a named space in main memory (RAM) that contains a value that can be changed during the execution of the program	Variable
7	Control Flow in Imperative Languages	The process of setting the value of a variable	Assignment
7	Control Flow in Imperative Languages	a named space in main memory (RAM) that contains a value that cannot be changed during the execution of the program	Constant
7	Data in Algorithms	a datatype that can contain only whole numbers	Integer
7	Data in Algorithms	a datatype that can contain only decimal numbers, known as a float datatype in Python	Real
7	Data in Algorithms	a datatype that can contain only the values True or False	Boolean
7	Data in Algorithms	a datatype with a size of exactly one byte that is used to represent a single extended ASCII character	Character
7	Data in Algorithms	a datatype used to contain a finite sequence of characters (i.e. letters, numerals, symbols and punctuation marks)	String
7	Data in Algorithms	a logical operation to be used when selecting on the basis that both of two separate conditions must evaluate True	AND
7	Data in Algorithms	a logical operation to be used when selecting on the basis that either one or both of two separate conditions must evaluate True	OR
7	Data in Algorithms	a logical operation to be used when selecting on the basis that a condition evaluates False	NOT
7	Data in Algorithms	the set of operations used in basic mathematics including addition, subtraction, multiplication and division	Arithmetic operations
7	Data in Algorithms	the arithmetic operation that divides the first operand by second operand and returns remainder	Modulus
7	Data in Algorithms	the arithmetic operation where the first operand is raised to the power of the second operand	Exponent
7	Data in Algorithms	the set of operations where the first operand is compared to the second operand, including ==, <, >, <>, <= and >=	Comparison operations
7	Data in Algorithms	a series of values of the same datatype stored in a sequence, known as a list in Python	Array
7	Data in Algorithms	a error in a program produced by not following the syntax of the language	Syntax error
7	Data in Algorithms	a error in a program that causes it to function incorrectly, but not to terminate abnormally or crash	Logic error
7	Testing	a table that records the values of variables and conditions as the steps of the code are followed, used to check for logic errors and also known as a 'dry run'	Trace table
7	Testing	a table used to demonstrate that a program functions as intended by planning specific input combinations, and comparing the actual output to the desired output	Test plan
7	Testing	input data often used in test plans that can be used to check that programs function correctly at the extreme ends of value ranges, for example input 10 when a condition checks for a value being between 1 and 10	Boundary data