

The multiple-choice paper tests precise use of these terms, and the Create performance task is scored against a rubric that names them. Most lost marks come from describing what something does instead of saying what it IS.

Data

Bit – a single binary digit, 0 or 1; n bits can represent 2^n distinct values

Abstraction – hiding detail so that a thing can be used through a simpler interface than its implementation

Lossless compression – reducing file size so that the original data can be reconstructed exactly

Lossy compression – reducing file size by discarding data permanently, so the original cannot be restored

Metadata – data about data, such as an image's dimensions or a file's creation date

Analog data – data with continuously varying values, which must be sampled to be represented digitally

Overflow error – an error caused when a value exceeds the range the allotted bits can represent

Round-off error – an error caused when a value has more precision than the allotted bits can store

Algorithms and programming

Algorithm – a finite sequence of precise steps that accomplishes a task

Sequencing, selection, iteration – the three constructs from which every algorithm is built: doing steps in order, choosing between them, and repeating them

Procedure – a named group of statements, which may take parameters and return a value; it supports abstraction and reuse

Parameter – a variable in a procedure's definition that receives an argument when the procedure is called

Boolean expression – an expression evaluating to true or false, used to control selection and iteration

Linear search – checking each element in turn until the target is found or the list ends

Binary search – repeatedly halving a SORTED list by comparing with the middle element

Reasonable time – an algorithm runs in reasonable time when its steps grow polynomially with input size; exponential growth is unreasonable

Heuristic – an approach that gives an approximate solution when an exact one cannot be found in reasonable time

Undecidable problem – a problem for which no algorithm can give a correct yes-or-no answer for every input

Computing systems and networks

Protocol – an agreed set of rules governing how devices exchange data

Packet – a unit into which data is divided for transmission, carrying its own addressing information

Redundancy – the existence of multiple paths between points in a network, which makes it fault-tolerant

Bandwidth – the maximum amount of data that can be sent in a fixed time, usually in bits per second

Parallel computing – a model in which a program is broken into parts executed simultaneously on different processors

Distributed computing – a model in which multiple devices work on a single problem across a network

Impact, security and data

Digital divide – differing access to computing and the internet across groups, often by income, geography or age

Computing bias – bias embedded in a program, usually inherited from the data it was trained on or the assumptions of its designers

Personally identifiable information – information that can be used to identify an individual, alone or combined with other data

Multifactor authentication – verifying identity with two or more independent kinds of evidence, such as a password and a device code

Symmetric encryption – encryption using the same key to encrypt and decrypt

Public key encryption – encryption using a freely published public key to encrypt and a secret private key to decrypt

Phishing – a message disguised as coming from a trusted source, designed to obtain credentials or personal data

Creative Commons – a licensing scheme by which a creator grants specified reuse rights in advance