

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. 选择题考术语的准确用法, 项目评分表也按术语给分。

Data

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

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

Lossless compression 无损压缩 — reducing file size so that the original data can be reconstructed exactly

Lossy compression 有损压缩 — reducing file size by discarding data permanently, so the original cannot be restored

Metadata 元数据 — data about data, such as an image’s dimensions or a file’s creation date

Analog data 模拟数据 — data with continuously varying values, which must be sampled to be represented digitally

Overflow error 溢出错误 — an error caused when a value exceeds the range the allotted bits can represent

Round-off error 舍入误差 — an error caused when a value has more precision than the allotted bits can store

Algorithms and programming

Algorithm 算法 — a finite sequence of precise steps that accomplishes a task

Sequencing, selection, iteration 顺序、选择、迭代 — the three constructs from which every algorithm is built: doing steps in order, choosing between them, and repeating them

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

Parameter 形参 — a variable in a procedure’s definition that receives an argument when the procedure is called

Boolean expression 布尔表达式 — an expression evaluating to true or false, used to control selection and iteration

Linear search 线性查找 — checking each element in turn until the target is found or the list ends

Binary search 二分查找 — repeatedly halving a SORTED list by comparing with the middle element

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

Heuristic 启发式算法 — an approach that gives an approximate solution when an exact one cannot be found in reasonable time

Undecidable problem 不可判定问题 — a problem for which no algorithm can give a correct yes-or-no answer for every input

Computing systems and networks

Protocol 协议 — an agreed set of rules governing how devices exchange data

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

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

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

Parallel computing 并行计算 — a model in which a program is broken into parts executed simultaneously on different processors

Distributed computing 分布式计算 — a model in which multiple devices work on a single problem across a network

Impact, security and data

Digital divide 数字鸿沟 — differing access to computing and the internet across groups, often by income, geography or age

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

Personally identifiable information 个人身份信息 — information that can be used to identify an individual, alone or combined with other data

Multifactor authentication 多因素认证 — verifying identity with two or more independent kinds of evidence, such as a password and a device code

Symmetric encryption 对称加密 — encryption using the same key to encrypt and decrypt

Public key encryption 公钥加密 — encryption using a freely published public key to encrypt and a secret private key to decrypt

Phishing 网络钓鱼 — a message disguised as coming from a trusted source, designed to obtain credentials or personal data

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