

Java

Basic knowledge & Interview questions



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# Bit & Byte

The bit is the most basic unit of information in computing and digital communications. The name is a contraction of binary digit.[1] The bit represents a logical state with one of two possible values. These values are most commonly represented as either "1" or "0", but other representations such as true/false, yes/no, +/−, or on/off are commonly used.

比特是英文 binary digit的缩写。比特是表示信息的最小单位，是二进制数的一位包含的信息或2个选项中特别指定1个的需要信息量。一般来说，n比特的信息量可以表现出2的n次方种选择。

The byte is a unit of digital information that most commonly consists of eight bits. Historically, the byte was the number of bits used to encode a single character of text in a computer[1][2] and for this reason it is the smallest addressable unit of memory in many computer architectures. To disambiguate arbitrarily sized bytes from the common 8-bit definition, network protocol documents such as The Internet Protocol (RFC 791) refer to an 8-bit byte as an octet.[3] Those bits in an octet are usually counted with numbering from 0 to 7 or 7 to 0 depending on the bit endianness. The first bit is number 0, making the eighth bit number 7.

字节是二进制数据的单位。一个字节通常8位长。但是，一些老型号计算机结构使用不同的长度。为了避免混乱，在大多数国际文献中，使用词代替byte。在多数的计算机系统中，一个字节是一个8位长的数据单位，大多数的计算机用一个字节表示一个字符、数字或其他字符。一个字节也可以表示一系列二进制位。在一些计算机系统中，4 个字节代表一个字，这是计算机在执行指令时能够有效处理数据的单位。一些语言描述需要2个字节表示一个字符，这叫做双字节字符集。一些处理器能够处理双字节或单字节指令。字节通常简写为“B”，而位通常简写为小写“b”，计算机存储器的大小通常用字节来表示 [2] 。

# Primitive Data Types

boolean:1bit

byte:8 bits

short:16 bits

char:16 bits

int: 32 bits

float: 32bits

long: 64 bits

double:64 bits