

Data Representation Vocabulary **KEY**

Abstraction	the process of reducing complexity by focusing on the main idea. By hiding details irrelevant to the question at hand and bringing together related and useful details, abstraction reduces complexity and allows one to focus on the idea.
ASCII	“American Standard Code for Information Interchange”. Character encoding that uses numeric codes to represent characters.
Analog data	Any information that typically represents an analog signal. Analog data have values that change smoothly, rather than in discrete intervals, over time. Some examples of analog data include pitch and volume of music, colors of a painting, or position of a sprinter during a race.
Computer Data	Ones and zeros used to represent information
Huffman encoding	algorithm for the lossless compression of files based on the frequency of occurrence of a symbol in the file that is being compressed.
Binary	Something that has two states. In computing, binary is a system of numerical notation that has 2 rather than 10 as a base
Character set	A defined list of characters recognized by the computer hardware and software. Each character is represented by a number.
Run-length encoding	form of lossless data compression in which <i>runs</i> of data (sequences in which the same data value occurs in many consecutive data elements) are stored as a single data value and count, rather than as the original run.
Compression ratio	The ratio between the uncompressed size and compressed size of a file
Lossless compression	Lossless data compression algorithms can usually reduce the number of bits stored or transmitted while guaranteeing complete reconstruction of the original data.
Lossy compression	Lossy data compression algorithms can significantly reduce the number of bits stored or transmitted but only allow reconstruction of an approximation of the original data.

Data compression	can reduce the size (number of bits) of transmitted or stored data.
Pixels	short for "Picture Element." These small little dots are what make up the images on computer displays,
Keyword encoding	A compression technique that replaces frequently used words with a single character
Sampling technique	measuring values of the analog signal at regular intervals called samples. The samples are measured to figure out the exact bits required to store each sample.
Bit	Short for binary digit. Usually a 0 or 1. Smallest unit of data
Byte	8 bits
Resolution	the number of pixels in a digital image or display. It is defined as width by height, or W x H, where W is the number of horizontal pixels and H is the number of vertical pixels.
Overflow error	An overflow error is an error that occurs when a computer attempts to handle a number that is outside of the defined range of values.