Bit Basic concepts

Encoding: assigning value to symbol. Example 2 eyes can simulate a binary number. Closed eye = 0 and open eye = 1.

Decoding: Once you encode your symbol you need to tell someone what the symbols mean so you can communicate efficiently. Identifying what a symbols value is.

With a pair of eyes you can only have a combo of 4 different messages. If you wanted to give 16 different messages you would need 4 eyes.

22 = 4 or 24 = 16 the exponent represents how many eyes you need to give you the number of messages you want to communicate. This exponent number is called bits (binary digits) in a computer.

Table

Description automatically generated

How bits represent data

Conversions among bases decimal, octal ,binary, hexadecimal

American Standards Code Information Interchange (ASCII)

Table

Description automatically generated

How do you represent something bigger than 256?

Unicode: a standard for encoding text character

Can represent large collection of multilingual characters

It uses more than 8 bits (4 bytes) to encode a text character because multilingual character sets are larger than ASCII.

Using bits to represent images

Using bits to represent sound

What are some disadvantages of large file size?

* Long time to copy file form one computer to another
* Longer time to send files

What are some strategies to reduce digital media file size?

* Reduce the sampling rate
* ? bit depth ?
* Apply file compression