BINARY/BASE 10/HEXADECIMAL

CONCEPT The binary and hexadecimal number systems are used to represent data within digital computer systems.

BACKGROUND

Binary numbers have been seen in ancient works in Egypt and China but are not important in computer-based systems.

BIT: Single binary digit (0 or 1)
NIBBLE: Four bits, one hexadecimal digit
BYTE: Eight bits, one ASCII character
POSITIONAL NUMBERS: Value based on order of digits
NUMBER BASE: Number place values are powers of base
RADIX: The number base for a number system

APPLICATION

The common use of base 10 is due to humans having 8 fingers and 2 thumbs. If humans had hands like cartoon characters or space aliens the common number base might be base 8 or base 6. Any number base can be used to express any number value.

EXAMPLES

ASCII: American Standard Code for Information Interchange
NUMBERS: Two's Complement represents signed integers
IP ADDRESSES: Internet Protocol dotted decimal addresses
MAC ADDRESSES: Hexadecimal network and Bluetooth addresses
RGB COLORS: Red, Green and Blue color values
MEMORY: Storage of data in a memory chip
LOGIC: Boolean values of true and false

Illuminate
NEBRASKA
POWERED BY
NEBRASKA PUBLIC POWER DISTRICT

powered by:

Nebraska Public Power District
Always there when you need us