

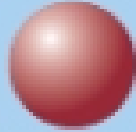



Bits & Bytes: How Computers Represent Data

Data Representation

How do computers represent data?

- Computers are **digital** and use electricity

BINARY DIGIT (BIT)	ELECTRONIC CHARGE	ELECTRONIC STATE
1		ON
0		OFF

- Recognize only two discrete states: on or off
- Use a **binary system** to recognize two states
- Use Number system with two unique digits: 0 and 1, called **bits** (short for binary digits)

Data Representation

What is a **byte**?

- Eight bits grouped together as a unit
- Provides enough different combinations of 0s and 1s to represent 256 individual characters

- Numbers
- Uppercase and lowercase letters
- Punctuation marks

