**Fundamentals** | Intermediate Memory

# Basic memory refresh

- Memory is stored using binary
  - Bits: 0 or 1
- Computer optimized for bytes
  - 1 byte == 8 contiguous bits
- Fully contiguous

# Addresses

- All data in memory has an "address"
  - Used to locate data
  - Always the same – only data changes
- Usually don't utilize addresses directly
  - Variables handle most of the work

# Offsets

- Items can be located at an address using an "offset"

- Offsets begin at 0

- Represent the number of bytes away from the original address

  - Normally deal with indexes instead

# Addresses & Offsets

# Recap

- Memory uses addresses & offsets
- Addresses are permanent, data differs
- Offsets can be used to "index" into some data