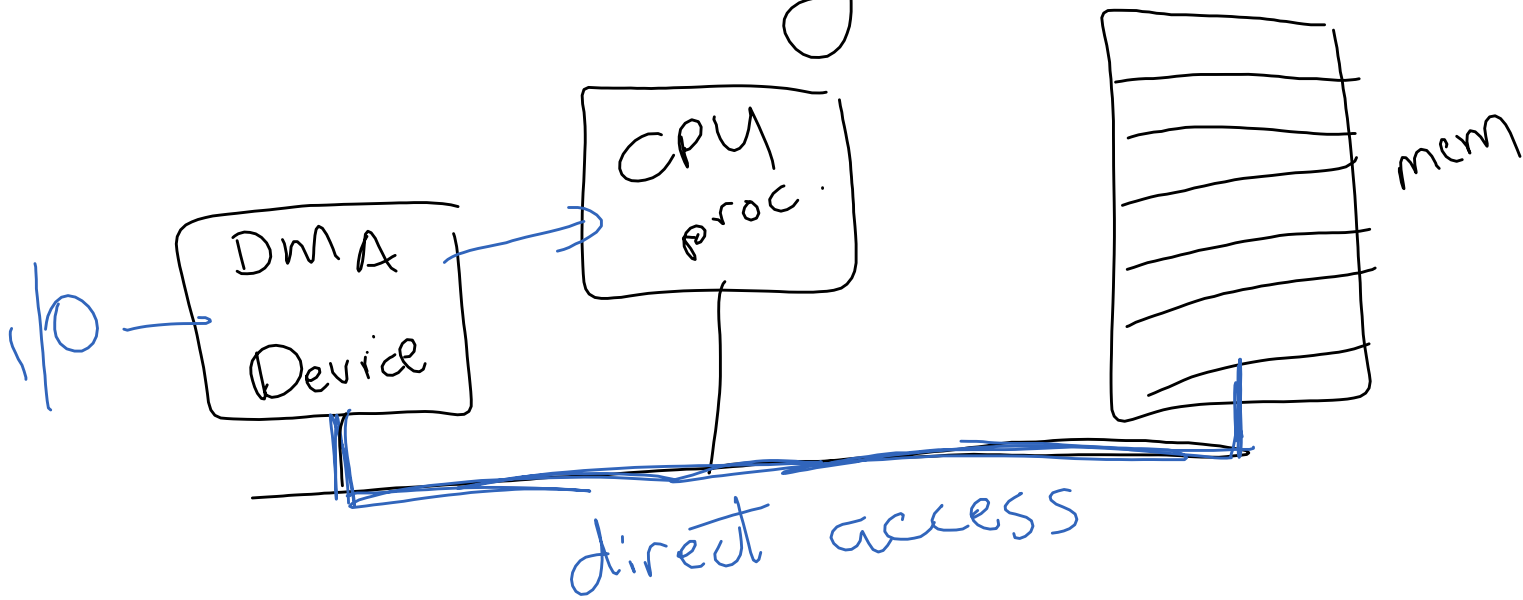
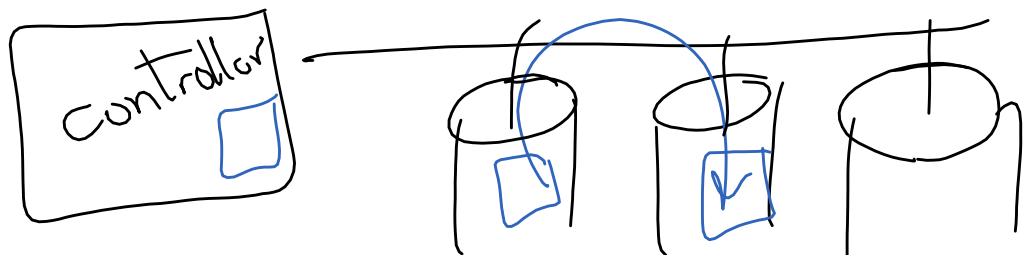


# I/O

- Interrupt Driven
- Polling - busy wait
- Direct Memory Access



## SCSI drives



# Block v. Character devices

- disks

- keyboard

- files

- mice

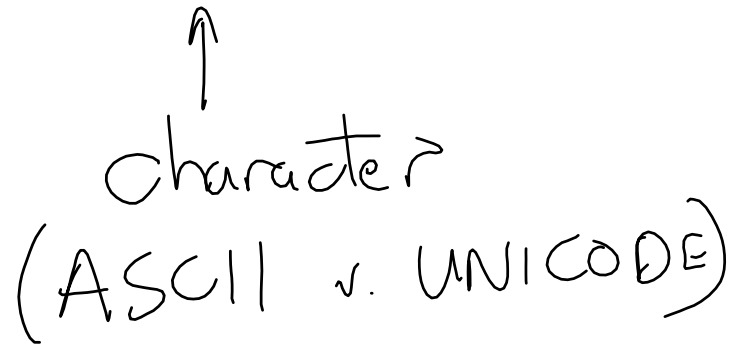
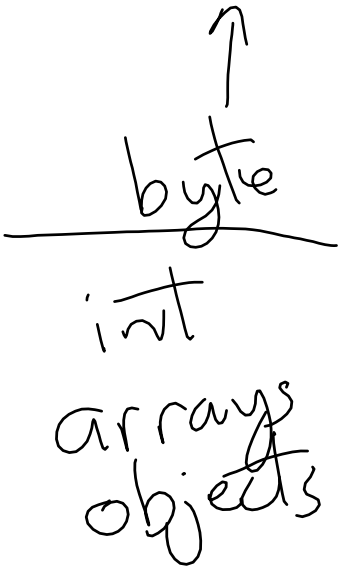


Network sockets

Pipes

- Blocking I/O
- Non-blocking (java.nio)
  - ask how much is available
- Asynchronous I/O
  - request returns immediately
  - do other work
  - I/O notifies that it is done
    - event/callback

# Streams v. Readers/Writers



# Protection

- file access control list

## Objects

- files
- sockets
- semaphores

- devices
- printers

Domains: (groups that need access)

- users
- processes

# Access Matrix (abstract)

domain	object			actions		
	file1	file2	obj	D1	D2	D3
Dom 1	rw	rX	X	set perm	switch	
Dom 2	rwX					
Dom 3						

# Object Access List

- keep permissions w/ each obj.
- info about every domain?

Capability List for each domain  
- access to every object