The I/O system:
- Channels
- I/O controller electronics
- Controllers
- I/O processor
- Bus system
  - Interface
  - I/O processor
- Disk storage
  1. Track, cylinder, sector density
  2. Rotation, seek
  3. Disk block
  4. I/O processor mechanism: e.g., elevator
  5. Disk arrays: RAID levels, performance vs. redundancy

Buses:
- Signals: A, D, C
- Separate A/D lines vs. Multiplexed A/D lines
- Pending bus vs. Split-transaction bus
- BUS vs. Synch
- Arbitration: Centralized vs. Distributed

Dinner Table
Bus Master
Bus Slave

DAISY CHAIN

Controller
Proc.
Mem
Disk
RAID 0: Striping

RAID 1: Mirroring

RAID 4

RAID S

2 3 6

Standard RAID levels

A1 A2 A3 A4 AP

A1 A2 B1 B2 CP

SPN

9 5 4 3

SECDER

RAID 2

Hamming