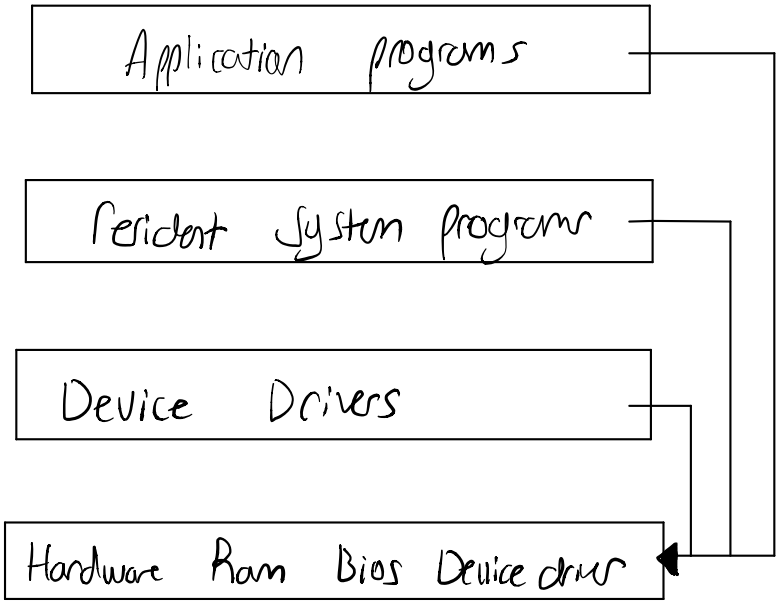
9/10 Day 9

- Review questions handed out for first test this friday 9/15
- Next lager Chapter 5
  - Mutual exclusion in distributed environment

Architecture - organization of operating system
- Simple Structure - MS-dos



- They did this to cut corners because it was a personal computer.

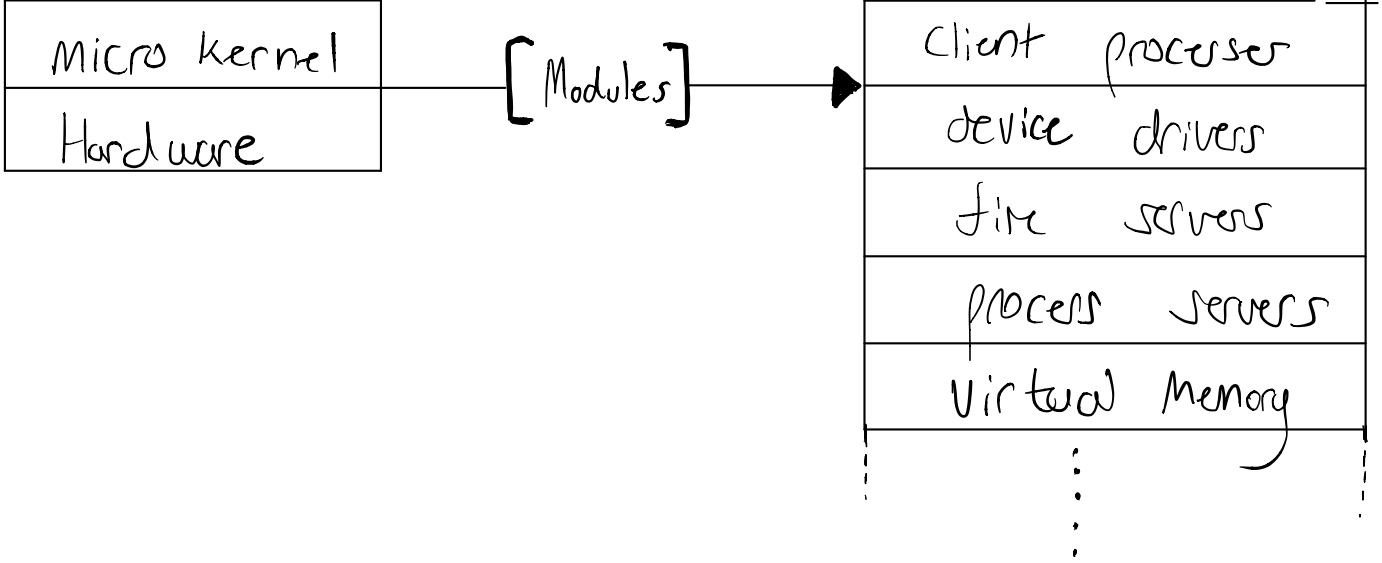
- Step wise refinment - "get it working, then mak it good"

Layer Structures - Unix

Users
Shells & Commands, Compiler & interpreters System libraries.
System call interface to Kernel

System permission handling I/O system terminal driver file system Supply block disk & tape driver cpu schedual page replacment demand paging Virtual memory
Kernel interface to hardware
terminal interface device controller memory controller Ram

- Micro Kernel - remove all non-essential components from Kernel



- Virtual machines - IBM - VM O.S.
  - OS - creates illusion to program that it has the entire machine to itself.
    - if VM gets virus it does not pass onto parent OS

- Most machine are in layered structures.

- Virtual box

- Von Neuman Model
  - CPU
  - I/O
  - Memory
  - Mass Storage

CPU - executes instructions

- increment to process counter is based on size of previous

- Types of I/O
  - programmed I/O
    - CPU waits for each instruction.
  - Interrupt driven I/O
    -
  - direct memory access
    - device controller that does programmed I/O
    - Can trace data bus, half duplex
  - Data channels
    - On main frame computers have their own bus.

Interrupt - an alert of change of status for CPU.

interrupt vector - used to find interrupt first instruction

Can you interrupt an interrupt handler? NO

$.95(1\mu s) + .05(100 + 1)$

$= .95 + 0.05(101\ \mu s)$

$= .95 + 5.05$

$= 6\ \mu s$

What is the principle of cache memory
- Locality, programs do the same thing a lot, keep it close in memory.

Defining characteristics of TPS - Transaction processing system.
- restricted to do one thing well
- used for user
- purpose no incomplete transaction.

- Defining characteristics of Batch OS
  - All data before start

- you don't interact while it runs.

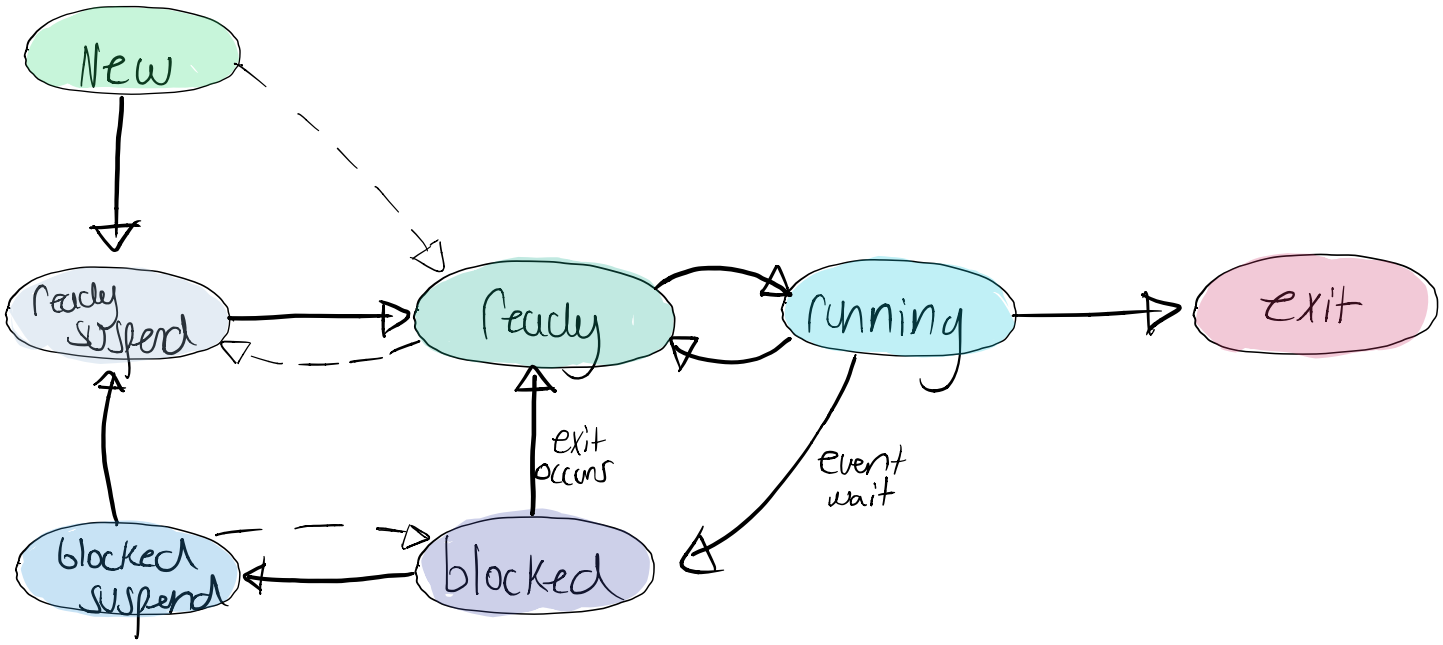
- Interactive system
  - Interaction
  - time slicing
  - multi process
  - personal computer

- PC -
- Main frame - many user each with the idea they are the only user
- Real time systems
  - Monitor events in real time respond to events as it happens, Auto pilot.
  - No interaction

- Distributed operating system
  - Makes it appear like network of computer is one computer.

- Network os share data
  - but each computer works seperately.

- Process state management
  - process state diagram


New
ready suspend
ready
running
exit
exit occurs
event wait
blocked suspend
blocked