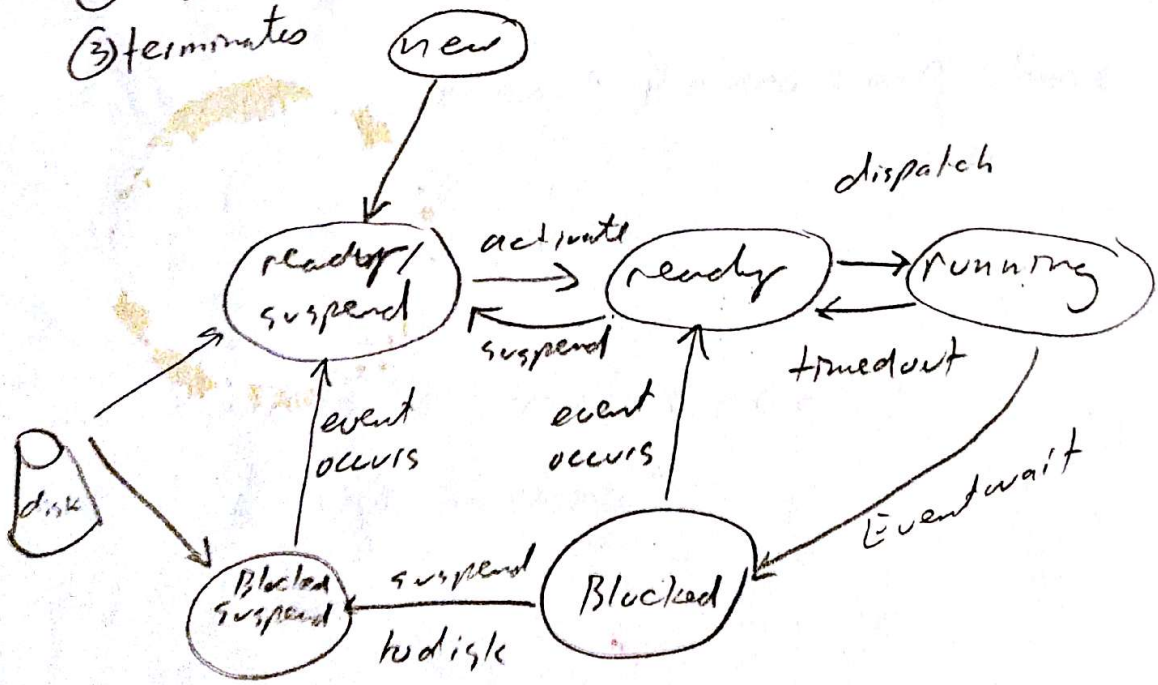
schedule?

when does scheduler make decisions?

① when go from running to ready or blocked
② goes from blocked to ready
③ terminates



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When does scheduler run?

- Non preemptive - (cooperative multitasking)
  process voluntarily yields control to OS
  system call that relinquishes CPU
  bad OS trust process
- Preemptive (OS preempts or interrupts process)
  - process gets time slice, gets interrupted, then scheduler decides who runs.
  - good if OS trust no process

Performance Metrics

Min waiting time: spend less time in Ready Q

Max CPU utilization: keep CPU busy

Max throughput: complete as many processes as possible per unit time

Min Response time: respond immediately

Fairness: give each process fair share.

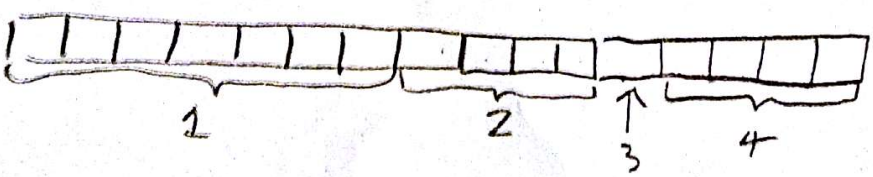
Algorithms

First Come First Served (FCFS)

not preemptive

FIFO queue

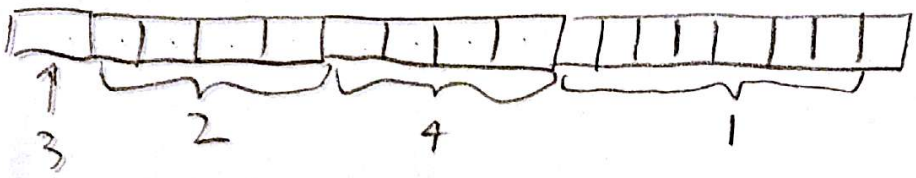
Process	Arrival	CPU time
1	0	7
2	0	4
3	0	1
4	0	4



Av. Wait time = (0 + 7 + 11 + 12)/4 = 7.5

FCFS diff order

3-2-4-1



Av wait = (0 + 1 + 5 + 9)/4 = 3.75

so order matters here!

Advantage

simple & fair

Disadvantage

- wait time depends on arrival order
- long process early gum up system
- non-preemptive