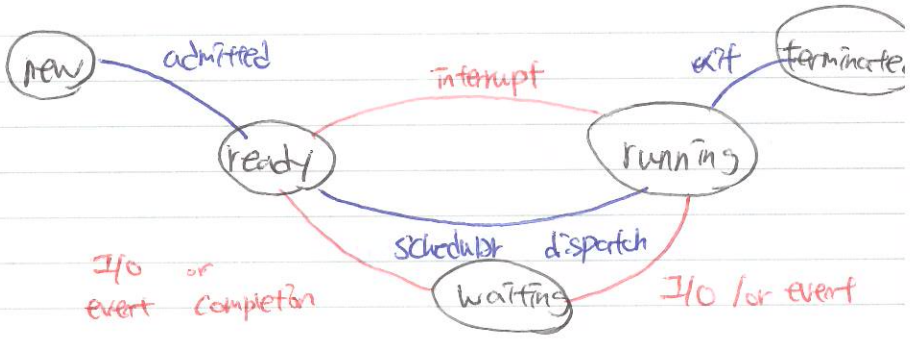
Lec 1)

what is a process?. A program in execution.

Program Counter what is the next instruction to execute

process state



process control block 특정한 프로세스 정보를 가지고 있는다 시스템 스케줄링 정보와 같은 것들.

Context switching Context switching is the process of storing and restoring the state of a process so that execution can be resured from the same point

Long term scheduler determines which processes are put on the ready queue. Determines how many processes can run at once. (desree of multiprogramming)

Short term scheduler decides which process from the ready queue will get to run on the cpu.

priority queue

low

↑ priority

high

↓

Cpu algorithm criteria for scheduling Algorithm performance

-) cpu utilization
-) waiting time
-) Turnaround time
-) Response time
-) through put
  총 걸린 시간 / 총 프로세스

Scheduling Algorithms

-) First come, First Served
-) Shortest Job first
-) Priority scheduling
-) Round Robin

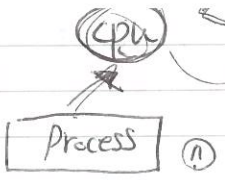
Non Preemptive

The process that is executing on the cpu continues until it has finished it's cpu burst.

Preemptive

if another processes arrives the process currently running can be stopped and the new process started

1) cpu scheduling

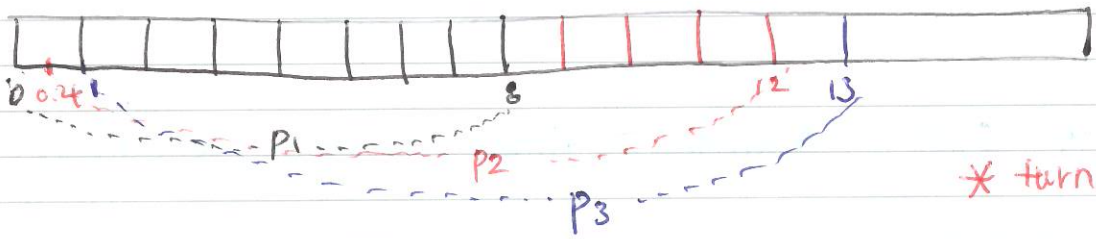


2) preemptive → when process is working on the cpu it can be interrupted by external reason.

Nonpreemptive → when process is working on the cpu it is guaranteed this process can hog cpu until it finished.

* Concept을 정확히 알기

3) averase turnaround time. / FCFS

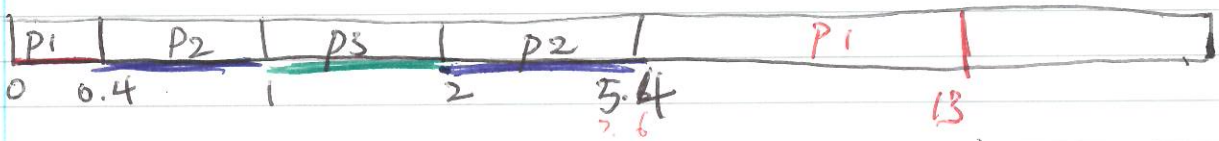


* turnaround ?

P1 = 8
P2 = 11.6
P3 = 12

total = 31.6 / 3

3a) averase = 10.5



P1 -1 = 0.4 / 7.6

P2 -1 = 0.6 / 3.4

P3 -1 = 1 / 0 // P3 끝

P2-2 = 3.4 / 0 // P2 끝.

P1-2 = 7.6 / 0 // P1 끝.

P1 = 13
P2 = 5
P3 = 1

total 19

averase 19/3

3b) 6.3

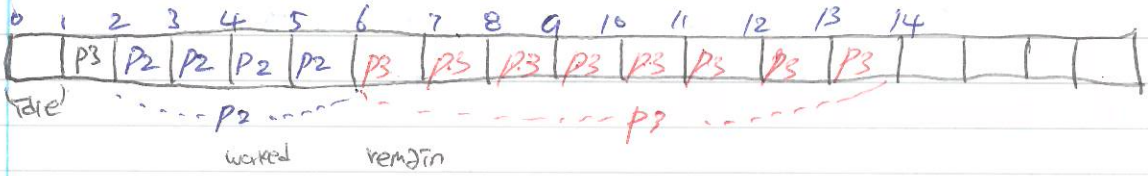
3b) Idle 1 unit.

* future - knowledge scheduling

=> Let's assume 1 unit = 1 sec

then :

Gannett chart



	worked	remain	
P3 -1 =>	1	0	// finished
P2 -1 =>	4	0	// finished
P3 -1 =>	8	0	// finished

* SJF Algorithm / future knowledge scheduling

4) Multi - level queue system

1) Multi - level queue system
2) Multi - feedback queue.

OSC Lec Summary:

Lec 1) Cpu Scheduling

2016)

*) what is meant by ageing in priority scheduling and how does it prevent starvation of low priority processes?

•) Aging is increasing the priority in the system's queue thus, as time goes by process's priority is increved gradually

•) Explain how priority scheduling with aging can be implemented using a multi-level queue system.
feedback.

•) As using Aging, If a process uses too much cpu time, it will be moved to a lower-priority queue.

if process waiting too long ~~time~~ in a lower priority queue may be moved to higher priority queue.

= so prevent starvation.

•) A-Multi level queueing system uses round robin with Quantum 10ms, when processes first enter the system, any processes not complete after they have exhausted their Quantum, sent to a second (lower priority queue) queue which also uses round robin scheduling, but with quantum 50ms finally the processes are sent to the lowest priority queue which executes first come first served. what are the advanteses of this approach versus simply using round robin scheduling with a quantum of 10ms or 50ms?

•) can improve response time and can doing more higher priority job first.

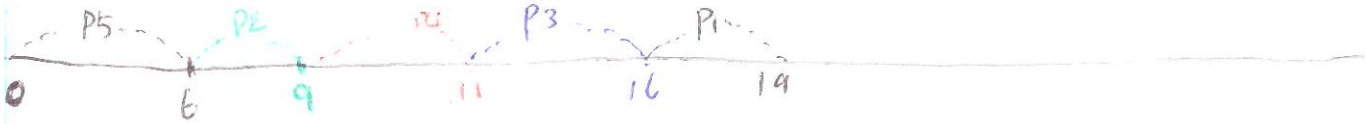
2.5) Schedule the processes using shortest Job first Scheduling (non-preemptive)

Process	Duration	Arrival
P0	7	15
P1	9	3
P2	10	0
P3	3	4

2.14) This Question is about cpu scheduling. Consider the following Processes.

ID	Arrivaltime	Duration
P1	12	3
P2	2	3
P3	6	5
P4	8	2
P5	0	6

I) Schedule these Processes using Shortest Remaining time First Scheduling and show the resulting schedule.



II) Waiting time

	Arrived	waited
P1	12	4
P2	2	4
P3	6	5
P4	8	3
P5	0	0
		16 sec