

Content Indication Table

Question	Section
What's process state?	Process States
What's short-term scheduling?	Types of scheduling
When to do short-term scheduling?	Types of scheduling
What kinds of scheduling algorithms do we currently have?	Short-term scheduling/Scheduling algorithms
How to choose scheduling algorithms?	Short-term scheduling // Scheduling criteria Short-term scheduling // Criteria for different systems Short-term scheduling // Scheduling algorithms selection

Program Code Location

Location	States
CPU	Running
Main Memory	New , Ready
Virtual Memory	Waiting
Disk	Terminated

Scheduling and State Transition

Types op Scheduling	State Transition
Long-Term Scheduling	Terminated → New
Medium-Term Scheduling	Waiting → Ready Running → Waiting
Short-Term Scheduling	Ready → Running

Criteria for Different Systems

Systems	Criteria
All Systems	Fairness , Policy Enforcement , Balance
Batch Systems	CPU Utilization , Throughput , Turnaround Time
Interactive Systems	Response Time , Predictability
Real-Time Systems	Deadline , Predictability

Systems and Scheduling Algorithms

Systems	Scheduling Algorithms
Batch Systems	FCFS , SJF , PSJF
Interactive Systems	Round-Robin , Priority Scheduling , Multi-level Queue
Real-Time Systems	Rate-Monotonic , Earliest-Deadline-First

Scheduling Algorithms Properties

	FCFS	Round-Robin	SJF	PSJF	Priority	Multi-level Queue	Multi-level Feedback Queue
Selection Function	max(a)	Equal time quantum	min(s)	min(s-e)	Highest priority	Refer to wikipedia	Refer to wikipedia
Preemptive or not	No	Yes	No	Yes	Depend on priority policy	Yes	Yes
Overhead	Minimum	Minimum	May be high	May be high	Depend on priority policy	May be high	May be high
CPU Utilization	High	High	May be low	May be low	Depend on priority policy	May be low	May be low
Throughput	Not Emphasised	May be low	High	High	Depend on priority policy	Not Emphasised	Not Emphasised
Turnaround Time	Depend on particular process	Depend on particular process	Depend on particular process	Depend on particular process	Depend on particular process	Depend on particular process	Depend on particular process
Waiting Time	Not Emphasised	Not Emphasised	Short	Short	Depend on priority policy	Not Emphasised	Not Emphasised
Response Time	May be long	Good response time for short process	Good response time for short process	Good	Depend on priority policy	Good	Not Emphasised
Deadline	Not Emphasised	Not Emphasised	Not Emphasised	Not Emphasised	Not Emphasised	Not Emphasised	Not Emphasised
Fairness	Penalize short and I/O bound process	Fair	Penalize long process	Penalize long process	Depend on priority policy	Favour process in high level queue	Favour I/O bound process
Starvation	No	No	Possible	Possible	Possible	Possible	Possible