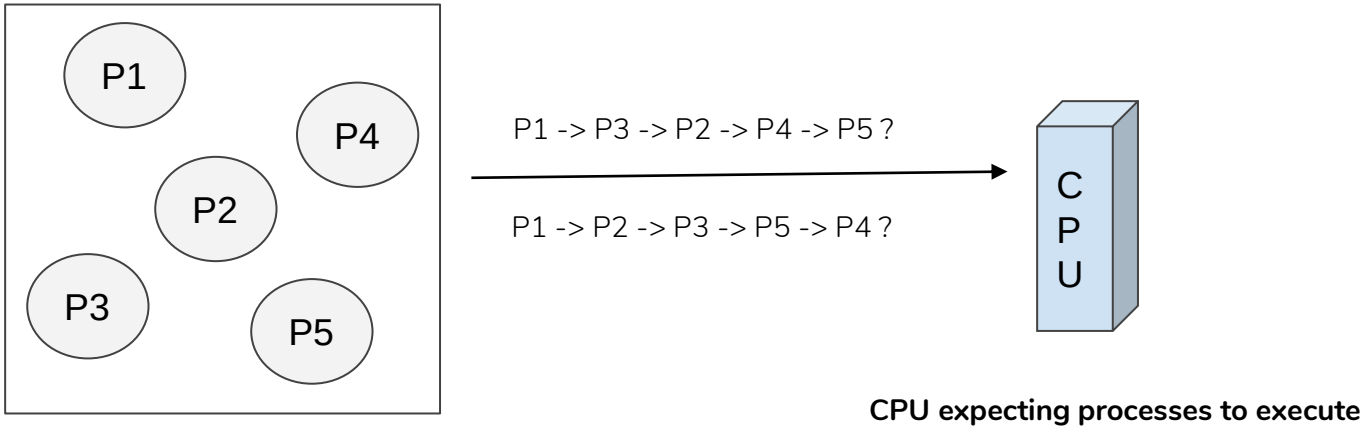
# Process

# Process Scheduling

Multiple process is ready to execute.
But, which Process should be executed first?



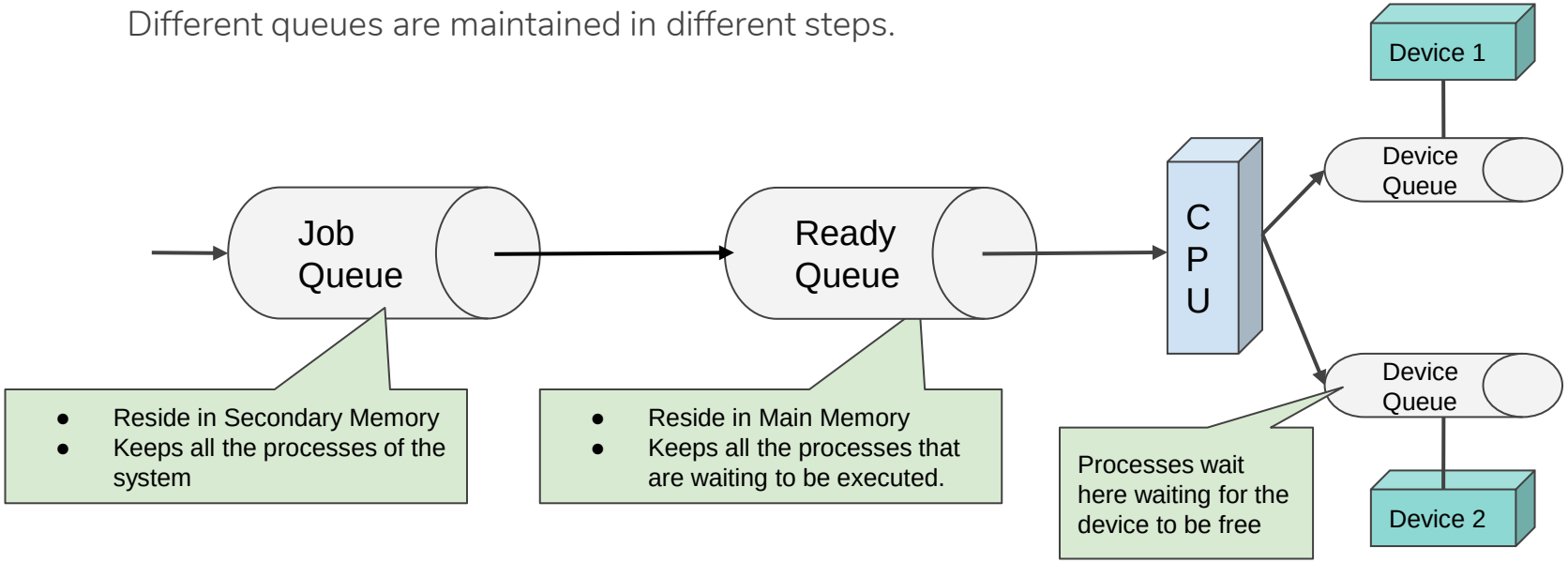

**Processes needs to be executed**

**CPU expecting processes to execute**

# Scheduling Queue

Stores the processes in different steps of OS.

Different queues are maintained in different steps.



# Queueing Diagram

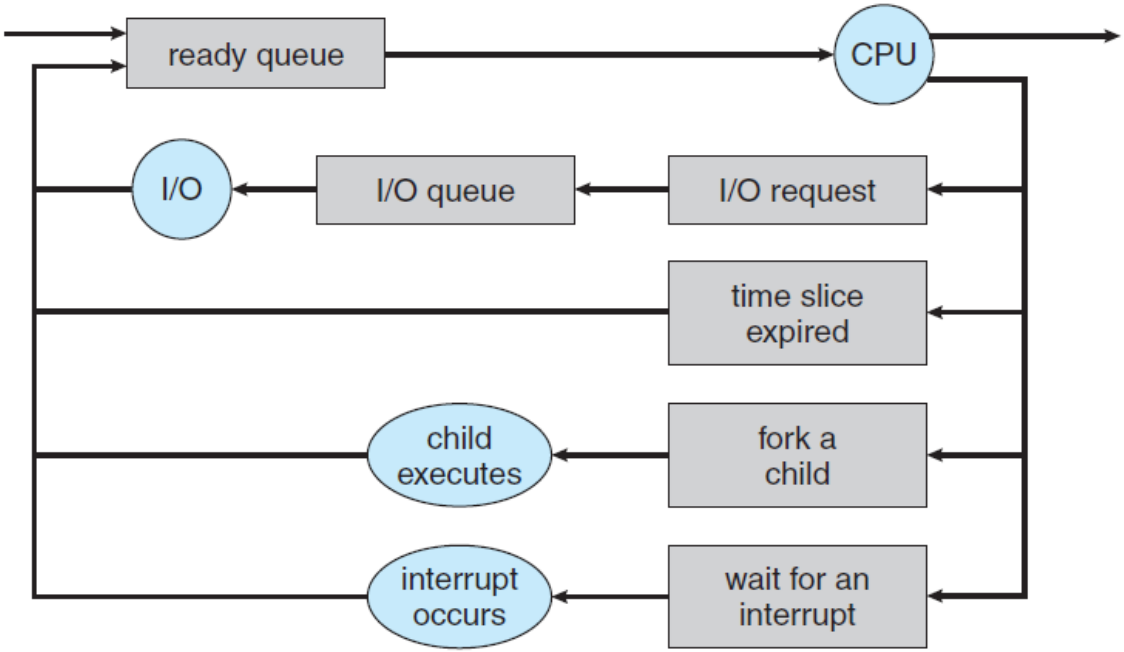
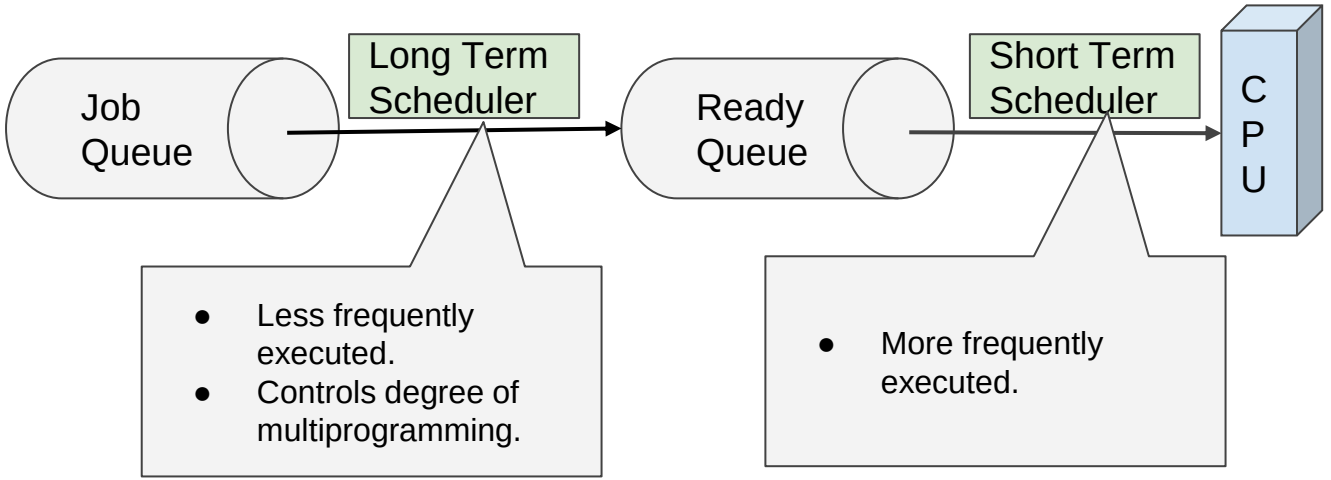



**Fig: Representation of Process Scheduling using Queueing-Diagram**

# Schedulers

Schedulers select processes from different queues to be passed to the next phase.



# CPU Bound Vs I/O Bound Process

CPU bound processes spend more time doing computation using processors than I/O.

I/O bound processes spend more time in I/O than CPU.

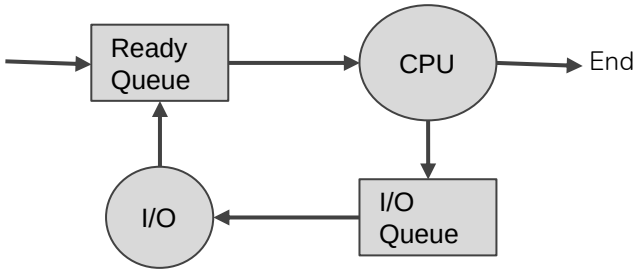
**Long Term Scheduler must select wisely !**

What will happen if all processes are I/O bound ?

=> Empty ready queue

What will happen if all processes are CPU bound ?

=> Empty waiting queue



# Medium Term Scheduler

Time-sharing system may use this scheduler.

Swapping reduce the degree of multiprogramming.

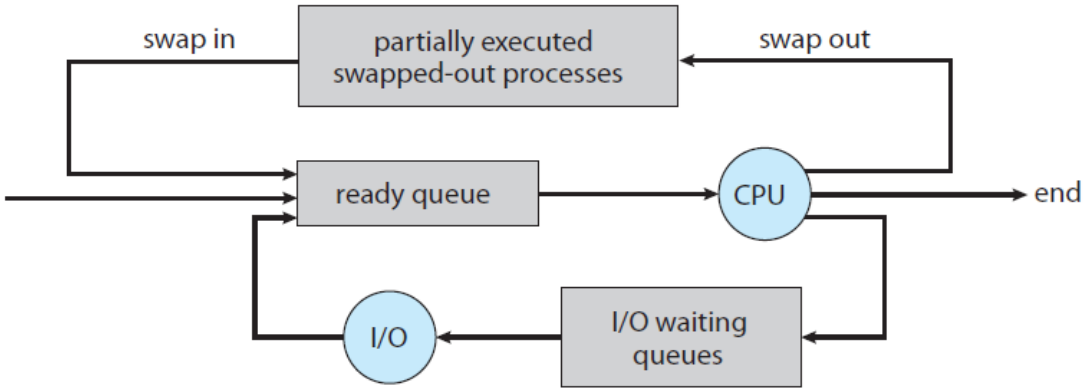



**Fig: Addition of swapping in Queueing-Diagram**

# Context Switch

When an interrupt occurs, the system needs to save the current **context** (state) of the process running on the CPU.

Context Switch: 1. Storing currently executed process context
2. Restoring the next process context to execute