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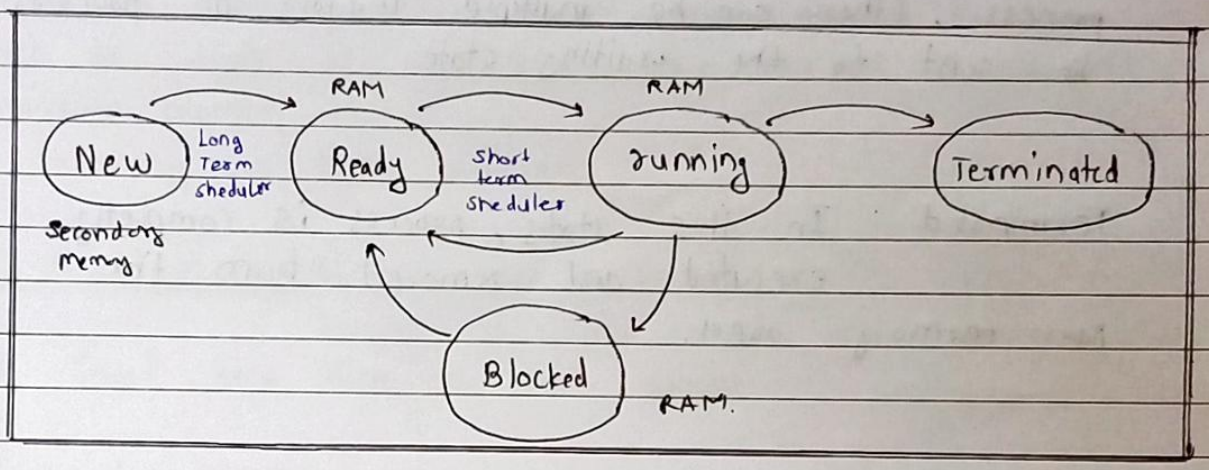
Assignment : 1

Process states and their transitions



There are total 5 basic process states New, ready, running, blocked and terminated (we can also have additional state if a process is blocked for long time and the Blocked storage is getting filled)

New : In this, the new process is being created but has not yet been admitted to the system. This state is temporary and the process moves to ready, once sheduled by long-term sheduler

Ready : In this state, the process is waiting to be assinged the processor. The process is loaded into main memory and is ready to run

running : In this state process is being executed by the processor.

Waiting : If a process asks for I/O request then till that request is full-filled it is kept in waiting state, so that it's doesn't block the path of other process, (there can be multiple reason of process to be sent to the waiting state

Terminated : In this states, process is completly executed and removed from the ram memory area.

Scheduling policies of Windows operating system

Windows can use multiple scheduling policy, the choice of shedduling policy depends on various factors such as type of work load, the number of processor, available memory etc.

Following are these policies

① Round-Robin: Windows uses a variant of the Round-Robin, known as Time-sliced, which allocate of fixed time slice to each process

② Priority scheduling: Windows assigns each process a priority level, ranging from 0 to 31. A higher priority value means that the process is more important, and should be given more CPU time. windows use a multilevel feedback queue to manage process with different priorities

③ Multi-level Feedback queue: Windows uses an adaptive scheduling policy based on MLFQ which uses multiple queues and dynamically adjust the priority of process based on it's recent behaviour the MLFQ scheduling policy takes into account the CPU burst time, the number of times a process has been pre-empted, and the amount of I/O times that the process has consumed, among other factors

④ Real-Time scheduling Windows also support Real.-time scheduling, which is used for time critical application that require predictable. response time. Real-Time scheduling assigns fixed priorities to process, and the schedular ensures that the process with the highest priority is always running