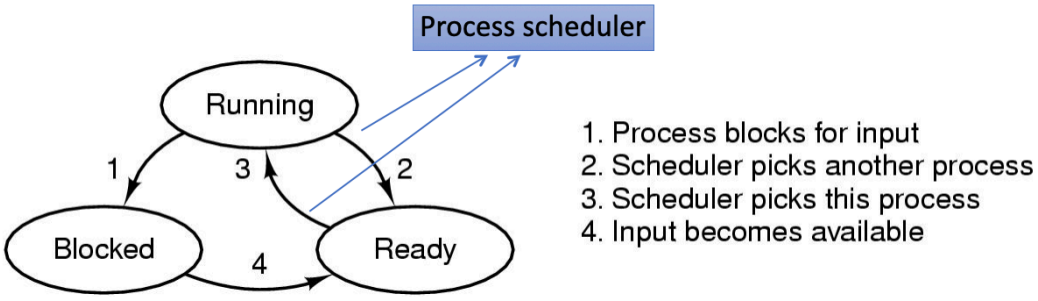
Advanced Operating Systems Design – Spring 2023Quiz 1

Student Name:_____(First Last)
Student R#: _____
Score: _____ (Total: 3%)

Question 1: (2%) Processes
In Operating Systems, what are running processes?
What are the different states of a running process? (Please explain these states)
What are the transitions between these process states? (Please explain these transitions)

Running Processes - Once the process has been assigned to a processor by the OS scheduler, the process state is set to running and the processor executes its instructions



Ready State - When the process creation gets completed, the process comes into a ready state. During this state, the process is loaded into the main memory and will be placed in the queue of processes which are waiting for the CPU allocation.

Running State - Whenever the CPU is allocated to the process from the ready queue, the process state changes to Running.

Blocked State - When the process is executing the instructions, the process might require carrying out a few tasks which might not require CPU. Process is placed in the queue of processes that are in waiting or block state in the main memory.

Question 2: (1%)
Please explain why a running process can not transit from Ready state to Blocked state directly.

The OS switches processes between the running and ready states. A running process can switch itself into the blocked state, and the OS may "wake up" a process by switching from blocked to ready state. But, The CPU can only run one process at a time. It can't both run a process and run the OS.