UPPSALA UNIVERSITY
DEPARTMENT OF INFORMATION TECHNOLOGY

COMPUTER SYSTEMS/OPERATING SYSTEMS
Fall, 2007

IN-CLASS EXERCISE 4

This problem involves a system that uses the 5-state process model, and for which all processes have the same priority.

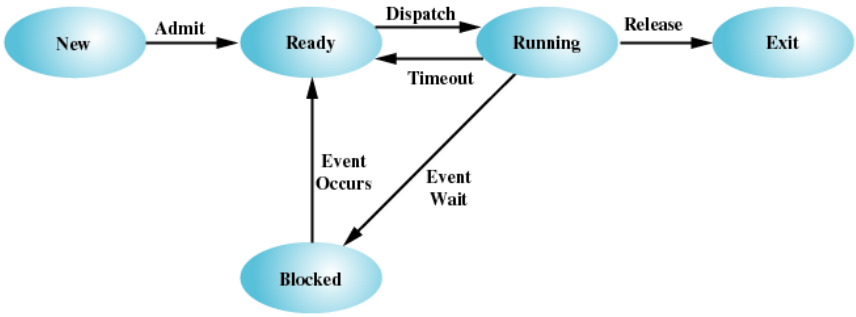
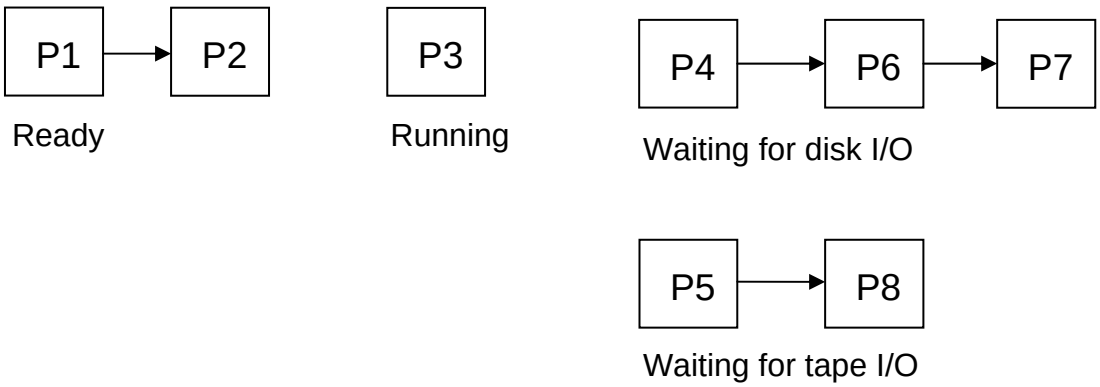


Figure 3.6 Five-State Process Model

As illustrated in the snapshot below,

- P1 is currently at the head of the ready queue,
- P4 is at the head of the queue of processes waiting for disk I/O,
- P5 is at the head of the queue of processes waiting for tape I/O,
- P3 is currently running.



For each of the events below, show the snapshot of the system after the operating system has responded to the event.

(a) At time t_1, the disk I/O for P4 completes.

(b) At time $t_2 > t_1$, a timer interrupt occurs (the currently running process has used up its time slice, but the process has not completed).

(c) At time $t_3 > t_2$, the process currently running completes.