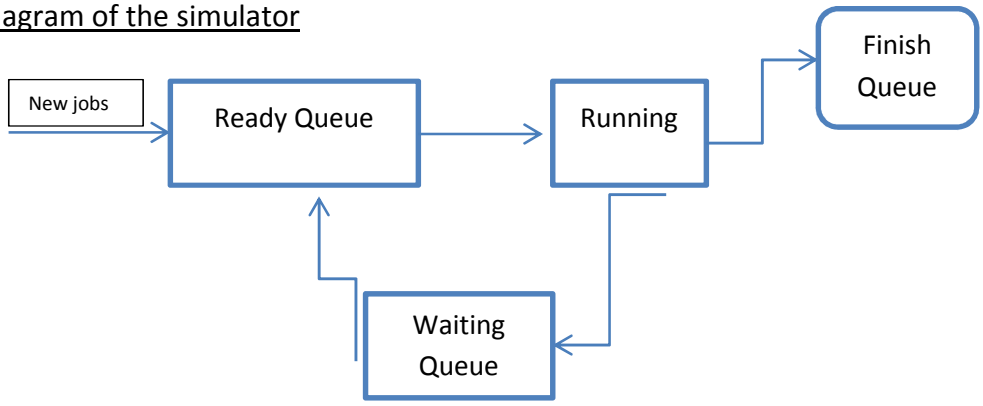
CISC 3320 - Term Project

CPU scheduler Implementation:

Objective:

Design and Implement a CPU Scheduling of an Operating System.

Diagram of the simulator



Input Specifications:

For your simulation, you need two types of configurations: system configuration, and job configuration.

For the system configuration you must define the following variables:

- Current system time
- Main memory units
- Number of I / O Devices
- A quantum (for FCFS algorithm you don't need a time quantum)

For example: if system A defined as (3.4 : 56 : 4 : 3). That means, the current time is 3,4 ns , main memory has 56 units, number of I/ O devices are 4, and the time quantum is 3

For jobs configuration, you must define the following variables for each job:

- burst time
- main memory units needed
- arrival time
- number of resources needed to finish
- state of the job (State could be ready, running, waiting, and finished)

For example, if job P defined as (23 : 6 : 3,67 : 4: ready). That means, Job P's burst time is 23, uses 6 main memory units, arriving time is 3,67 , number of resources needed is 4, and the state of job is ready.

You also need three data structures to hold your ready, waiting, and finished jobs.

More Details:

How to Implement:

First you must define your system, than you must create jobs. When a job created two things could happen; First thing, if there is not enough main memory the system will stop generating new jobs, and start scheduling jobs. Second, if there is enough memory the system will keep creating jobs. After you generated jobs you must define when do they need I / O devices so you can interrupt the running jobs and put them in to the ready queue.

After you generated all the system and job variables, you should start scheduling jobs. Fist, use First Come First Serve (FCFS) than use Round Robin (R.R) algorithm. After all Jobs run, your simulation should print out the waiting, turnaround, and response time for each process, and average waiting time for all the system.

Hint: First, implement without I /O devices, if your simulator working well, then add I / O devices to the system.

Note: Due for FCFS implementation is April 28, and for R.R implementation is May 12, 2011.