CST 334 (Operating Systems)
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Lab: Multi-level feedback queue

The author of our text wrote a program to simulate behavior of an MLFQ simulator. You can get it from the OSTEP homework page:

http://pages.cs.wisc.edu/~remzi/OSTEP/Homework/homework.html

or on mlc104:

```
/home/CLASSES/brunsglenn/OSTEP/HW-MLFQ/mlfq.py
```

Here are some tips on getting started with the simulator. Try this to generate a workload of three random jobs:

```
$ ./mlfq.py -j 3
```

The output shows the parameters of the simulation, and the three jobs, and asks you to show what an MLFQ scheduler would do with the jobs. Try it again with the -c option. You will see what the scheduler does with the jobs.

Look at the output and try to figure out what is going on. Jobs have three characteristics: start time (time it starts), run time (total CPU time needed), and I/O frequency (how often the job does I/O). You can set the job characteristics, like this:

```
$ ./mlfq.py --jlist 0,180,0:100,20,0 -Q 10,10,10
```

This command gives a job list of two jobs, and shows the three characteristics of each job. The -Q part says there are three queues, and in each a 10-ms time slice is used. The queues are numbered 0,1, and 2, with 2 being the highest-priority queue.

Look at the README-mlfq file for more info.

Now answer these questions:

1. Answer questions 1 at the end of Chapter 8 of our OSTEP text.

2. Answer questions 2-5.

It will take a while to learn to use the MLFQ scheduler, but it will help in your understanding, and will be needed for homework.