

For this brief document, I will provide a short class description for each of the classes contained in this project.

### **Scheduler- Interface**

This class provides the basis on how each of the algorithms work, and to which this class is implemented from. Contains the getNextJob methods and returnJobList methods which are an integral part of each algorithm.

### **SchedulerException**

Prints out exceptions given from algorithm classes based on the exception. Methods take in the exception and then show this to the user.

### **AbstractScheduler**

Acts as a template-style algorithm scheduler class, and can be extended by schedulers to perform functions already within this class. GetNextJob method is final in this class to prevent overriding it in a class extending it.

### **HighestPriority**

Implements the scheduler interface and contains the algorithm to sort processes by their priority. Returns to the head of the queue the one which has the highest priority.

### **ShortestJobFirst**

Implements the scheduler interface again and will keep checking for the highest priority task in the job queue and returning it to the head of the queue.

### **FirstComeFirstServed**

A first come, first served scheduling algorithm. It will keep re-presenting the same job each time getNextjob is called, until that job is removed from the queue, either because it has finished, or it gets blocked for I/O.

### **Lottery**

Implements the scheduler class again and contains the algorithm within the getNextJob method that randomly picks a process from the queue after each call of this class.

### **Job**

Class that acts as a job object to store key information about each process such as name, length and priority. Contains the getters and setters for some information.

### **Simulator**

Sets up some information about each process such as the process queue. It contains methods such as getting the amount of cpu ticks and getting a list of finished, incomplete and waiting processes. Also allows for a scheduler to be set for use in the program and also gets the scheduler in use. Can clear the queue of processes ready to run.

### **SimulatorLoader**

Reads in files such as the job files containing lists of processes. It gets each job from the file and loads this into the job queue in an array of job objects. Throws a file not found and IO exception when necessary.

### **Simulator Window**

The window to be loaded up when starting the program. This is a placeholder for the cpu panel, queue panel and util class items. Incorporates the menu, simulator and window listeners for actions

performed by the user.

### **CpuPanel**

This class creates the CPU panel displaying information about the descriptions of what scheduler is being used, what file is in use and the tick count of the cpu. Updates every time a job is returned.

### **QueuePanel**

Displays the list of processes in the queue or currently being processes on. Gets the process queue and then lists this in the simulator window. Also is updated every time a job is returned (every tick)

### **Util**

Sets up the grid bag constraints settings for the window, allowing the set up method inside to create a grid style layout to the required size as passed in by parameters.

### **SimulatorApplication**

Class containing the main method of the program. Sets up the simulator window, and adds the queue information into it. Also prints out the results summary after each run using the `makeResultsSummary()` method. Loads in the schedulers, and also sets up any action listeners.