Module: CPU

Extends: Thread

Field Variables:

|  |  |  |
| --- | --- | --- |
| Field Name | Type | Meaning |
| maxExecutionTime | int long | represents the max executionTime a Process may run |
| reaper | GrimReaper | represents GrimReaper process |
| loadedThread | Process | The current thread on the CPU |

INTERFACE:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Method Name | Input | Output | Description | State Transitions | Dependencies |
| CPU | (int long maxExecution, GrimReaper reaper) |  |  | maxExecutionTime=maxExectution  loadedThread=null; |  |
| run | void | void | Runs the loadedThread  Updates the amount of time left on the thread  Sends the loadedThread to the GrimReaper, then finishes executing (And thereby "freeing" the Dispatcher) | See execute, unload | this.execute()  this.unload() |
| load | Process p | void |  | loadedThread=p; |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Method Name | Input | Output | Description | State Transitions | Dependencies |
| unload() | Represents a Process being unloaded from the CPU |  | Passes the Process object to the GrimReaper. Starts the GrimReaper, then waits for it to execute. | reaper=new Reaper()  reaper.give(loadedThread)  reaper.start()  reaper.join() | GrimReaper.give()  GrimReaper.GrimReaper  Thread.start()  Thread.join()  this.generateMessage |
| execute() |  |  | Runs the Process loaded into the CPU and then updates the remaining execution time in said process | loadedThread.updateTime(maxExecutionTime)  loadedThread.run() | Process.updateTime()  Process.run() |
| generateMessage() |  | none | Generates a message of the form  "Process # executed for x seconds" |  |  |