

TDT4186 Operating Systems

Exercise 3

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1 Description of Code

1.1 CPU

1.2 IO

1.3 Simulator

In the Simulator class, I added three variables,

1. private CPU cpu
2. private long avgIoTime
3. private IO io

These variables represents the CPU, the I/O unit and the average I/O-time for each operation. The I/O-time is given as a system parameter, but it was never kept nor used (as I could find).

I initialized the CPU and I/O just like the memory-unit, but I also gave them a handle for the eventQueue and the GUI, so that they could dispatch events and display “what’s going on” to the user.

Code:

```
public Simulator(...) {
    ...
    memory = new Memory(memoryQueue, memorySize, statistics);
    cpu = new CPU(cpuQueue, maxCpuTime, statistics, eventQueue, gui);
    io = new IO(ioQueue, statistics, eventQueue, gui);
    this.avgIoTime = avgIoTime;
    ...
}
```

1.4 Statistics

1.5 Event

I added a toString-method to the Event-class, for easier use of debugger, stack traces and outputs. This has nothing to do with the program logic, only for my own understanding of the code.

2 Experimenting with the system

2.1 System parameters and their impact on performance

2.2 Alternative algorithms