

ATYPON

Processor Execution Simulator Assignment

Due Oct 19

Done by : Abdelrahman Ajawi

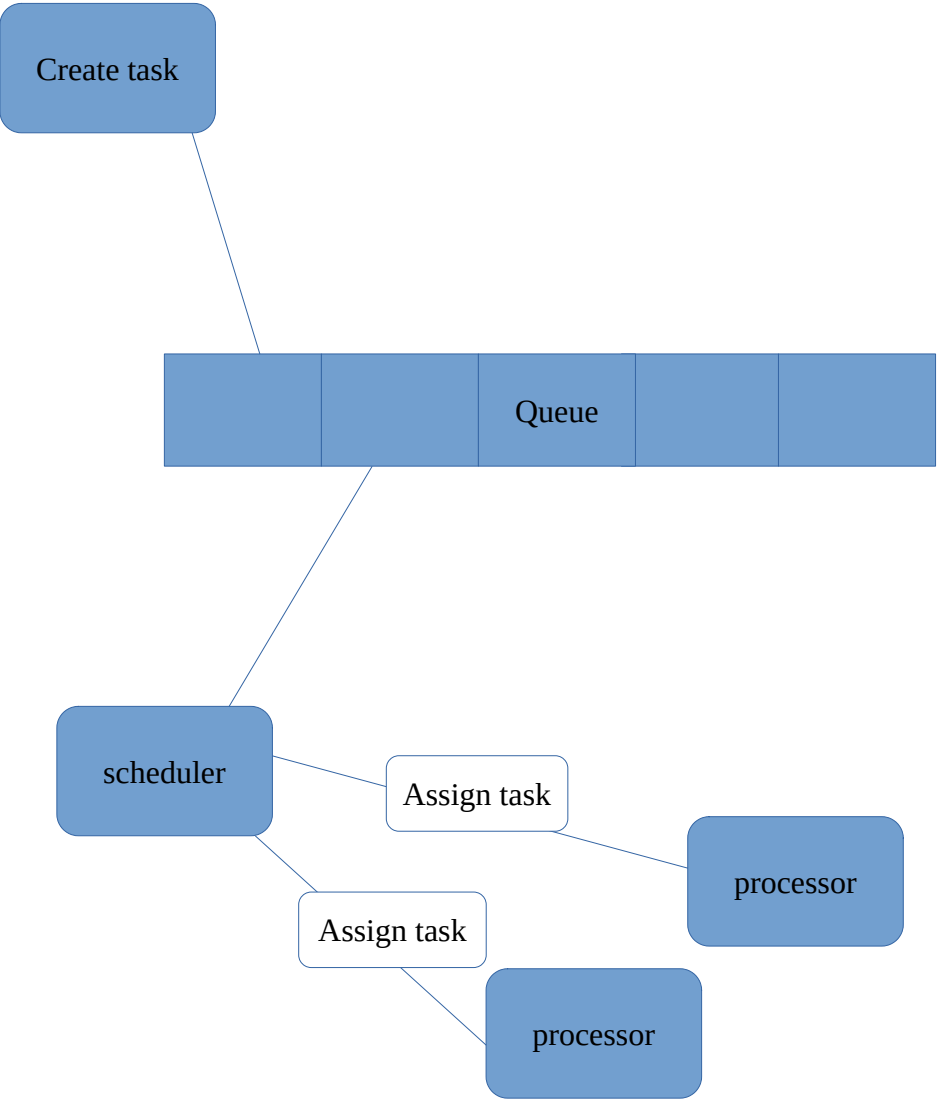
instructor:

- Dr.Fahed Jubair
- Dr.Motasem Aldiab

Problem Statement: :

Build a simulator that simulates processor execution for processes .

Scenario :



Component :

1 – Data :

- read info from text and serialized it .
- arrange tasks before create it according to :
creation time
priority
execution time

2 – Clock :

counting every one second until reach mix number of cycle in their thread :

```
for ( ;clock<=numberClockCycles;setClock()) {  
    try {  
        Thread.sleep( millis: 1000);  
    }  
    catch (InterruptedException e) {  
        throw new RuntimeException(e);  
    }  
}
```

that will help as sync clock with other component .

3 – QueueTask :

- hold tasks in FIFO order .

4 – Scheduler :

- check queue if empty then fetch task from queue .
- check available processor and assign task to it .

5 - Processors :

- execute tasks .

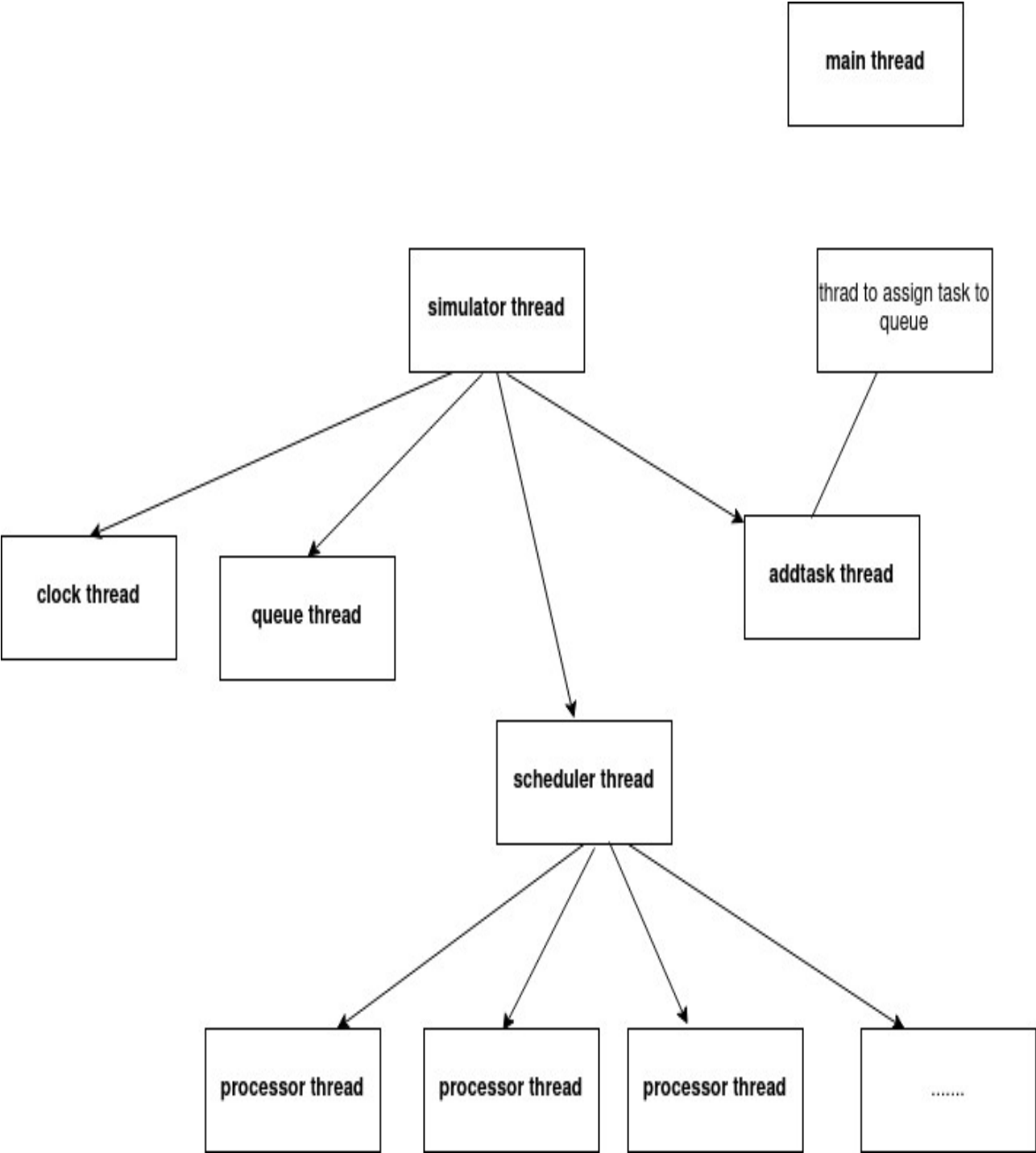
6 – Simulator :

- create task and automatically assign it to queue .

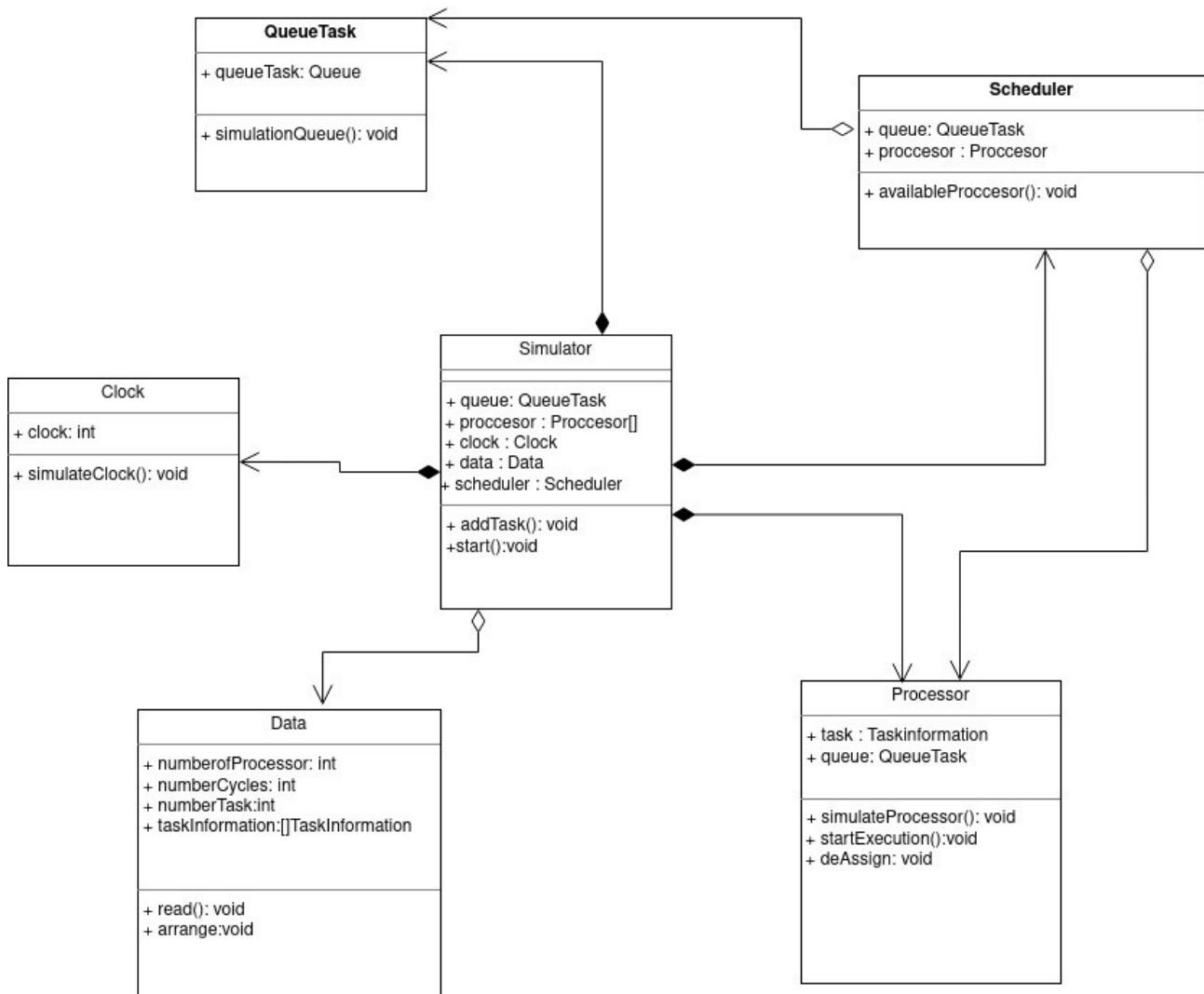
```
while(clock.getClock() <= data.getNumberClockCycles()) {  
    if(!simulateHelper[clock.getClock()]) {  
        clock.simulateClock();  
        queue.simulateQueue();  
        for (Processor processor:processor) {  
            processor.simulateProcessor();  
        }  
        simulateHelper[clock.getClock()] =true;  
    }  
}
```

simulate all details as long as clock bean alive .

Thread diagram :



Design :



[end]