



Refactored –Assignment2 writeup

UML explanation

1. Simulator

In my refactored design, I have an **ERSimulator** which is an abstract class. It has two subclasses **PresetERSimulator** and **RandomSimulator**.

PresetERSimulator runs Simulation in Preset mode.

RandomERSimulator runs Simulation in Random mode.

2. PatientGenerator

PatientGenerator is the interface contains the method to generate patients. It has two implementations, **PresetGenrator**, and **RandomGenerator**.

PresetGenrator generates patient with appointed information.

RandomGenerator generates patient with random information.

3. Urgency

I create Urgency class which contains three method(**lessUrgentThan()**, **asUrgentas()**, and **moreUrgentThan()**) to compare two urgencies.

Tests explanation

1. I use **setIn()** to test Scanner.

2. I also preset several simple situations to check whether the output result is true.

Design explanation

1. To shorten the simulation running time, I use 1 minute to represent 1 hour.

2. I use **EmergencyRoom** to handle the Patients, Rooms, and Queues. So that I have no need to put all of them in the simulator, which will be a mess.

3. I use the interval between two patients' arrival to control the simulation. During the interval, the program will sleep. So that the program doesn't need to check whether it needs to generate a new patient all the time.

Changes in refactored design

1. Add subclasses of **ERSimulator** to implement two modes of simulation.

2. Add **Urgency** class

3. Add **Analyser** class

4. Add **InputScanner** class

5. Add **Printer** class

6. Add two classes implements **PatientGenerator** interface to generate patients(generate in two different modes)

7. Check the correctness of user's input