

CSE 222 HOMEWORK #1

Sefa Özen

121044009

TABLE OF CONTENTS

LIST OF FIGURES	2
1. REQUIREMENTS.....	3
1.1. OVERALL DESCRIPTION.....	3
1.2. REQUIREMENT DEFINITIONS.....	3
2. Analysis and Solutions Approach.....	4
3. Class Diagrams	4
4. Use Case	5
5. Tests.....	5
6. Scenario	6

LIST OF FIGURES

Figure 1 Class	4
Figure 2 Use Case	5
Figure 3 Simulate Test	5
Figure 4 Hashtable Test	6
Figure 5 Scenario 1	6
Figure 6 Scenario 2	7

1. Requirements

1.1. Overall Description

In part1, We develop a simulation with java. The simulation has 3 type of customer and the priority is customer1 > customer2 > customer3. We implement priority queue.

In part2, A research assistant has an academic and a student card. Meal service wants to combine these two cards. Barcode numbers are unique. The problem is name and Surname can belong to more than one worker in the university. So we separation the cards.

1.2. Requirement Definitions

1. Use priority queue and implement your priority queue class with your input files. Your priority queue stores any type data (Use data1.txt). Construct enqueue, dequeue methods without using any function that is defined in java libraries.
2. Assume, the system does not stop in 24 hours. In every 20 hours, show the number of gold, silver and bronze customers that are served (Use data2.txt)..
3. What is your suggestion for this problem? Write an equals method that return true if two cards belongs to the same assistant. Eachers who manage courses can add and remove users, tutors and documents to a course.
4. Construct your algorithm and write a hashCode method that satisfies the hashCode contract. Make sure you do not have any collision..
5. Create input file with 500 inputs and test it according to 1 and 2.

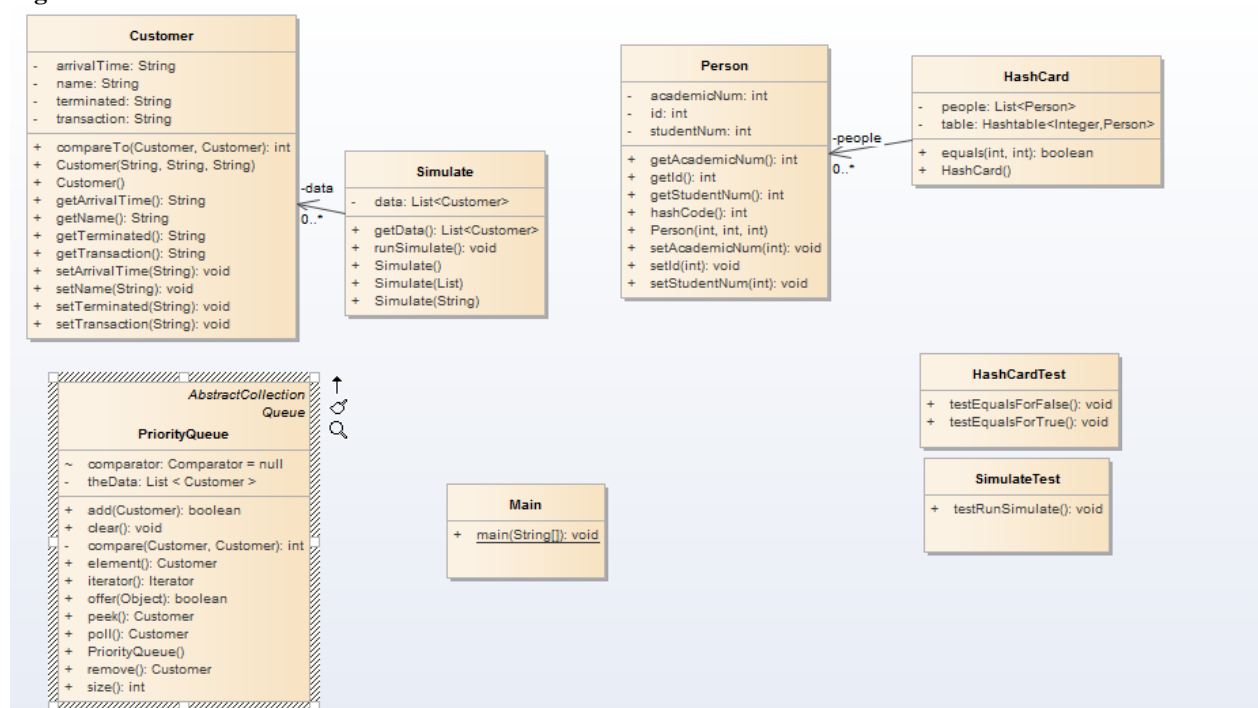
2. Analysis and Solutions Approach

In part1, The simulation have to keep the customers a queue which is priority queue. When first customer will come, the simulation's system clock will begin. It take first customer and proceeds hours, if any customer come, It would enter the PriorityQueue. The PriorityQueue' add and poll methods are developed for priority. It checks the system is on 24 hour or not. And every 20 hour it prints the screen gold, silver, bronze customer.

In part2, We programmed a hash table for solve to avoid confusion of meal cards. I use the card's barcode which is unique in 0-15000, for the key and I use person class for the value. Person keeps id which is in txt line because line is unique for everyone, student number which if they haven't student number, it takes 0, and academic number which have everyone. In equals method, It look who has student number and who has academic number. If they have same id, it will return true. It is no collision because card number is unique, it doesn't matter whatever the name. It look id.

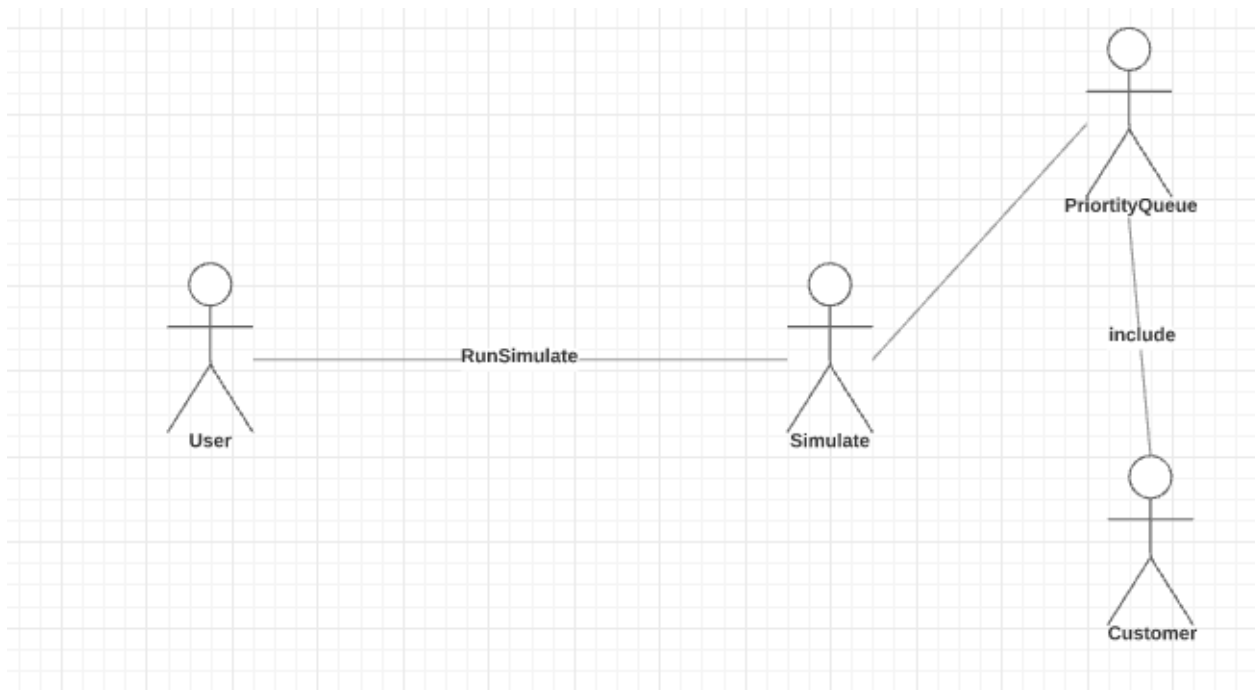
3. Class Diagrams

Figure 1 Classes



4. Use Case

Figure 2 Use Case



5. Tests

Figure 3 Simulate Test

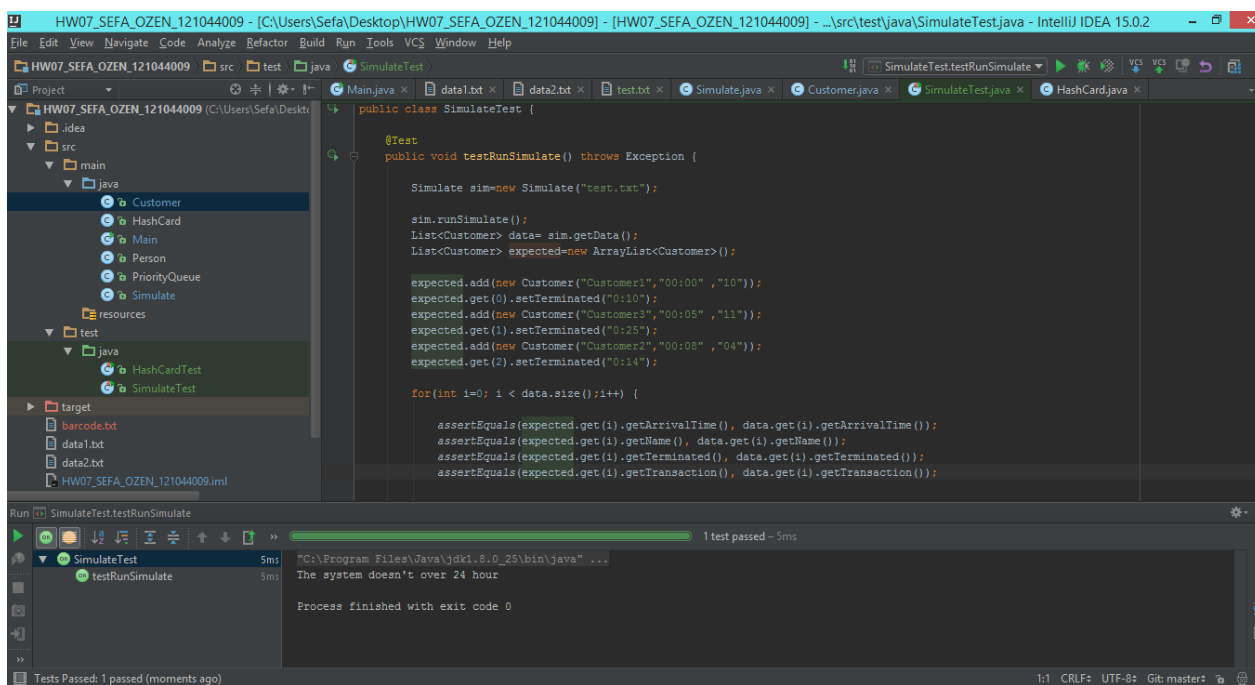
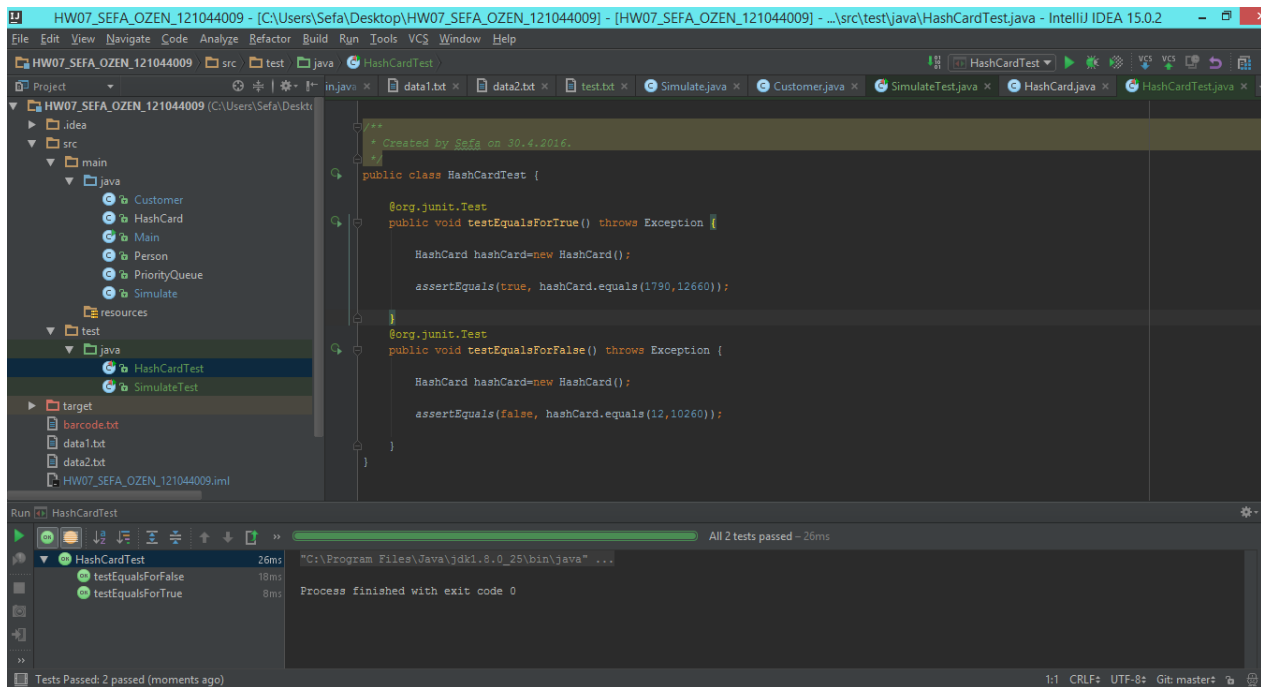


Figure 4 Hashtable Test



6. Scenario

Figure 5 Scenario1 with data2.txt

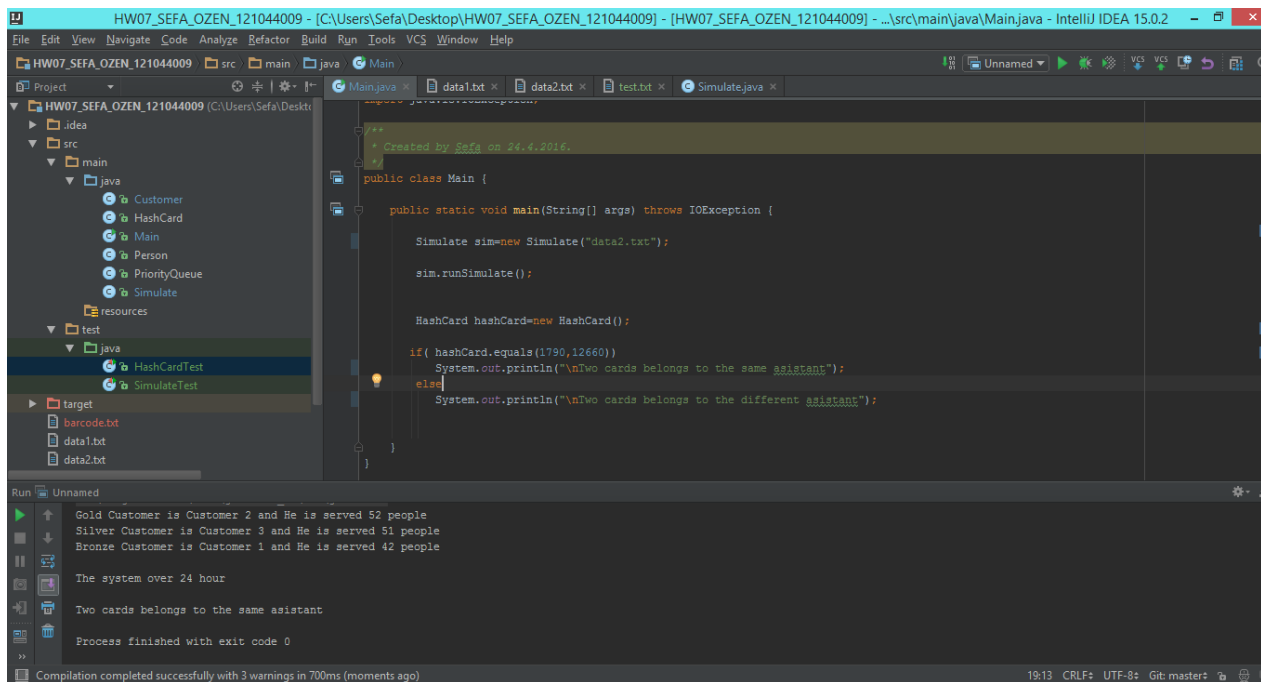


Figure 6 Scenario2 with data1.txt(it isn't 20 hour so it doesn't print screen customers).

