

Abdelrahman Keshta
900213114

CSCE 110 - 01
Dr. Howaida Ismaeel

Report - Assignment #2

Screenshot of Output:

```
fileMechanics(employee1, line);
fileMechanics(employee2, line);
fileMechanics(employee3, line);

fileCustomers(client1, line);
fileCustomers(client2, line);
fileCustomers(client3, line);
fileCustomers(client4, line);

mechanicQueue.push(employee1);
mechanicQueue.push(employee2);
mechanicQueue.push(employee3);

if (mechanicQueue.check(0).isAvailable(client1.getSession())) {
    client1.setMechanicID(employee1.getID());
}
if (mechanicQueue.check(0).isAvailable(client2.getSession())) {
    client2.setMechanicID(employee2.getID());
}
if (mechanicQueue.check(2).isAvailable(client3.getSession())) {
    client3.setMechanicID(employee3.getID());
}
if (mechanicQueue.check(3).isAvailable(client4.getSession())) {
    client4.setMechanicID(employee1.getID());
}

customerQueue.push(client1);
customerQueue.push(client2);
customerQueue.push(client3);
customerQueue.push(client4);

customerQueue.pop().print();
customerQueue.pop().print();
customerQueue.pop().print();
customerQueue.pop().print();
```

So basically here I am trying to input the mechanics and customers through the function fileMechanics() and fileCustomers() from an external file.

I then push the mechanics I have supposedly created from the external file into a queue of mechanics using the queue class made.

I then check if the mechanic is available at the time that the client/customer needs (which has been inputted in the external file) and if available then the mechanic ID is then set for the customer's receipt.

Finally, I push all the clients into a queue and pop them with the print receipt function.

Client 1 Reciept Output:

```
*Customer Reciept*
Customer Name: Ahmed
Customer ID: 732
Customer Age: 21
-----
Mechanic Name: Ahmed
Mechanic ID: 0
Appointment Time: 11:0
```

Client 2 Reciept Output:

```
*Customer Reciept*  
Customer Name: Sara  
Customer ID: 645  
Customer Age: 47  
-----  
Mechanic Name: Sara  
Mechanic ID: 0  
Appointment Time: 12:0
```

Client 3 Reciept Output:

```
*Customer Reciept*  
Customer Name: Kareem  
Customer ID: 839  
Customer Age: 33  
-----  
Mechanic Name: Kareem  
Mechanic ID: 0  
Appointment Time: 18:0
```

Client 4 Reciept Output:

```
*Customer Reciept*  
Customer Name: Mohamed  
Customer ID: 690  
Customer Age: 19  
-----  
Mechanic Name: Mohamed  
Mechanic ID: 111  
Appointment Time: 18:45
```

Errors:

- N/A

There are no Errors in the Code. It all runs correctly.

Remarks:

1. A huge issue that I have faced in this assignment is trying to solve the bonus because I wanted the extra marks. After playing around in the source code i have found my issue and solved it. Here are both the functions used to input the customer and mechanic information.

```
void fileMechanics(Mechanic& employee, int& line) {
    ifstream myFile;
    myFile.open("mechanics.txt", ios::in);

    string myText[18];

    for (int i = 0; i < 18; i++) {
        getline(myFile, myText[i]);
    }

    int sessionKey = 0;

    employee.setName(myText[line]);
    line++;

    employee.setAge(stoi(myText[line]));
    line++;

    employee.setID(stoi(myText[line]));
    line++;

    employee.setAppointPerDay(stoi(myText[line]));
    line++;

    for (int i = line; i < ((employee.getAppointPerDay() * 2) + (line - 1)); i++) {
        employee.setSession(stoi(myText[i]), stoi(myText[i + 1]), sessionKey);
        i++;
        sessionKey++;
    }

    line = (employee.getAppointPerDay() * 2) + line;

    myFile.close();
}
```

```
void fileCustomers(Customer& client, int& line) {
    ifstream myFile;
    myFile.open("customers.txt", ios::in);

    string myText[20];

    for (int i = 0; i < 20; i++) {
        getline(myFile, myText[i]);
    }

    client.setName(myText[line]);
    line++;

    client.setAge(stoi(myText[line]));
    line++;

    client.setID(stoi(myText[line]));
    line++;

    client.setSession(stoi(myText[line]), stoi(myText[line + 1]));
    line = line + 2;

    myFile.close();
}
```

Finally, I want to say that again, I am very sorry for the tardiness and for submitting this assignment as late as of now. I want to sincerely apologize. It took me a very long time to understand some concepts and even longer time to understand some of the functions in this assignment and how to trace them. Any partial credit would very much appreciated!
Thank you.

Sources Used:

I have used multiple sources from different mediums. I cannot provide every single source because I have spent a around 10 days on this assignment and I have used many videos, guides, geeksforgeeks tutorials, and much more that are behind in the history. I can tell you what I have found from my sources.

1. Learned about File input and output, because it did not work on xcode, but I have found the solution.
2. I have also learned about the algorithm to read the lines from the .txt file and increment to save the information of the customer and mechanics.
3. I have also learned how to create queue class without the use of the STL from youtube tutorials.
4. Learned about operator overloading from guides and youtube tutorials.