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CSCE 110 - 01

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Report - Assignment #2

<u>Screenshot of Output:</u>

I could not provide Output Screenshots because I can not solve an error found in my source code that I do not know where it stems from and I have spent a week trying to figure it out and evem reached out for external help, but nothing was worked. However, I will try to provide screenshots of my main() and explain my code and try to walk you through my code to atleast get partial credit for the 500 lines of code.

```
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.

<u>Errors:</u>

Writing the source code itself took me about 3 days, but fixing the errors in my code took me atleast a week. I had so many errors and every day that past I was losing marks, so now im submitting it as is.

I had 2 types of errors (A) when trying to input the customer and mechanic info using the external file and (B) when i manually inserted them.

Error (A)

In the mechanic class inside the setSession() function.

```cpp
void Mechanic:: setSession(int h, int m, int key) {
    Appointment session;

    if (h < 0 || h > 24) {
        cout << "Please enter a number between 0 and 24 for the hours." << endl;
    } else {
        session.hours = h;
    }

    if (m < 0 || m > 60) {
        cout << "Please enter a number between 0 and 60 for the minutes." << endl;
    } else {
        session.mins = m;
    }

    Bookings[key] = session;                                    ≡ Thread 1: EXC_BAD_ACCESS (code=1, address=0x0)
}
```

In the fileMechanics() function

```cpp
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);    ≡ Thread 1: EXC_BAD_ACCESS (code=1, address=0x0)
        i++;
        sessionKey++;
    }

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

    myFile.close();

}
```

And in multiple other place, I keep getting Thread 1: EXC_BAD_ACCESS (code=1, address=0x0). I tired reverse engineering my code to see what went wrong, but I can't find the issue. I have also posted my error on stackoverflow and no one understood my issue. I tried asking some of my senior friends but we couldnt come to a conclusion either. So I decided to just enter the information manually.

Error (B)

Again, Thread 1: EXC_BAD_ACCESS (code=2, address=0x7fffc00680c4), but this time code=2 and it showed again in 6 different places in the code.

```cpp
#include "Person.hpp"

class Mechanic : public Person {          // Thread 1: EXC_BAD_ACCESS (code=2, address=0x7fffc00680c4)
private:
    int appointPerDay;
    vector<Appointment> Bookings;
```

Such as here:

```cpp
    void push(Q& key) {
        rear++;
        WorkshopQueue[rear] = key;          // Thread 1: EXC_BAD_ACCESS (code=2, address=0x7fffc00680c4)
        count++;
    };
    Q pop() {
```

And here:

```cpp
        __mid = __first;
        _VSTD::advance(__mid, size());
    }
    pointer __m = _VSTD::copy(__first, __mid, this->__begin_);    // Thread 1: EXC_BAD_ACCESS (code=2, address=0x7fffc00680c4)
    if (__growing)
        __construct_at_en    > (Appointment *) 0x100608b88  ⊙ ⓘ ze());
    else
```

And much more…

Remarks:

1. A huge issue that I have faced in this assignment is trying to solve the bonus because I wanted the extra marks, but I kept coming across errors and could not keep trying to solve it, so I decided to manually enter the customers and mechanics information, and again could not get it to work. I have spent most of time working on both these functions, so I hope that they can atleast provide a bonus.

```cpp
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();
```

```cpp
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.