# Advanced Programming Applications

# CS244

# 12th Project Submission

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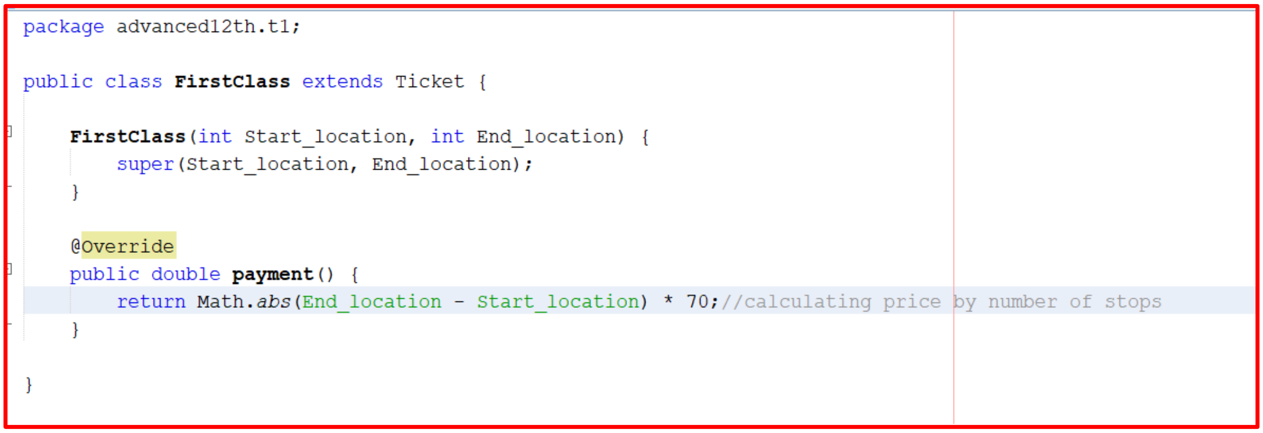
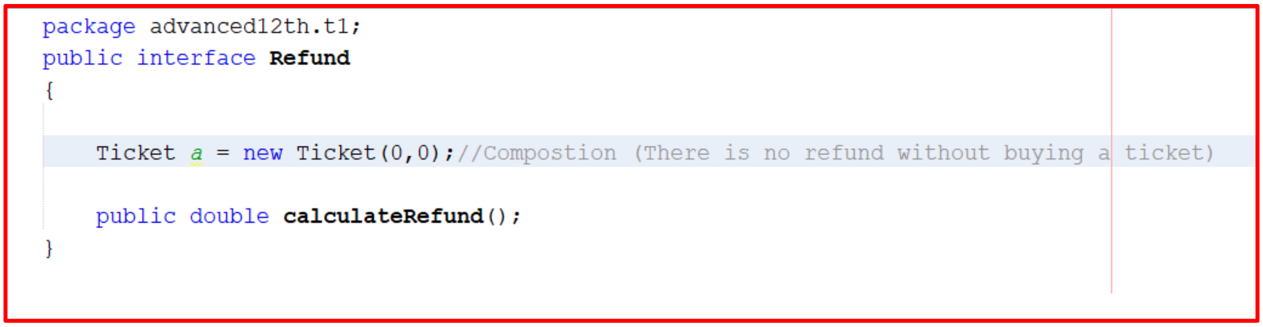
**The project design structure:**

1. **Inheritance (Classes FirstClass – SecondClass - LuxuryClass extends Ticket Class)**



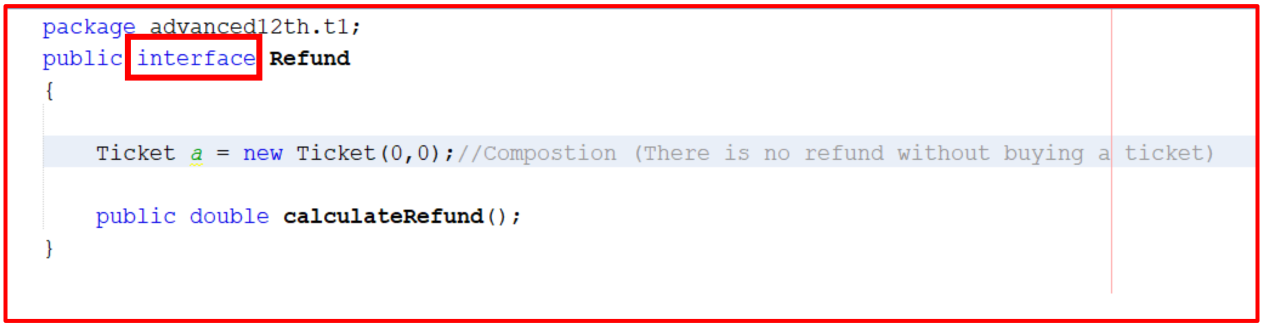
```
package advanced12th.t1;

public class FirstClass extends Ticket {

    FirstClass(int Start_location, int End_location) {
        super(Start_location, End_location);
    }

    @Override
    public double payment() {
        return Math.abs(End_location - Start_location) * 70;//calculating price by number of stops
    }

}
```

2. **Aggregation and/or Composition (Composition)**



```
package advanced12th.t1;
public interface Refund
{

    Ticket a = new Ticket(0,0);//Compostion (There is no refund without buying a ticket)

    public double calculateRefund();
}
```

3. **Interface (Refund Interface)**



```
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public interface Refund
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}
```
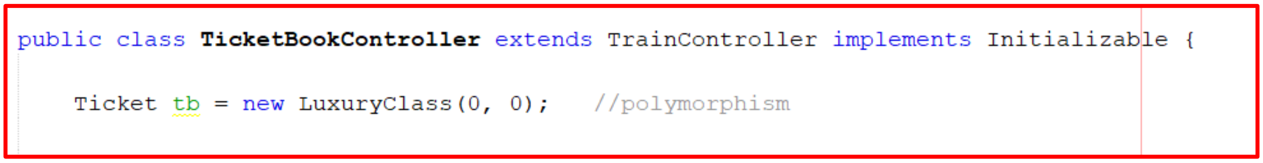
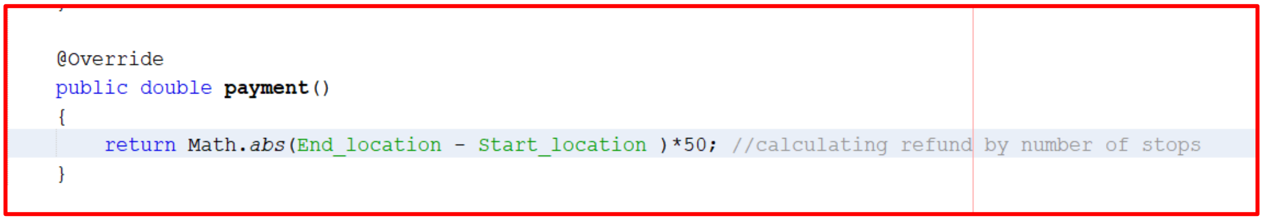

4. **Polymorphism**



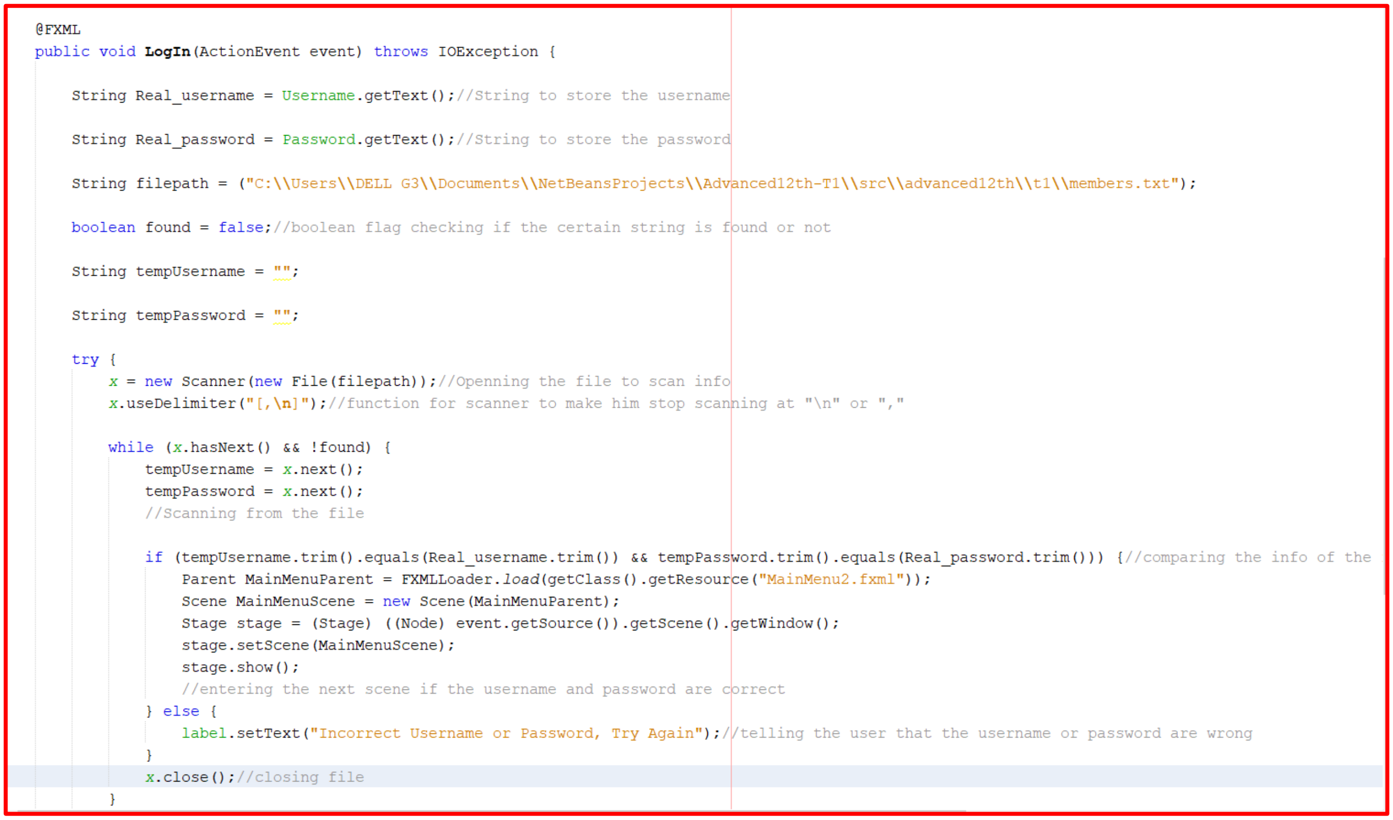
```
public class TicketBookController extends TrainController implements Initializable {

    Ticket tb = new LuxuryClass(0, 0);    //polymorphism
```

### 5. Overloading and Overriding (at least one each)
### (Many Overriding methods is the project, here it is an example)



```
@Override
public double payment()
{
    return Math.abs(End_location - Start_location )*50; //calculating refund by number of stops
}
```

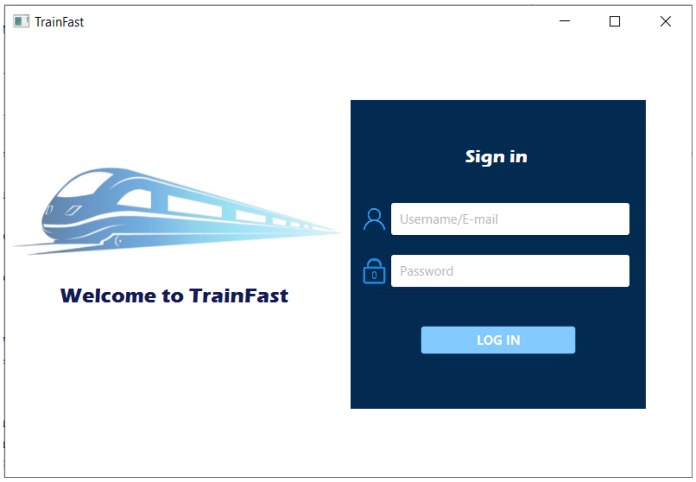
### 6. Reading and writing data through files or Database (Reading through file)

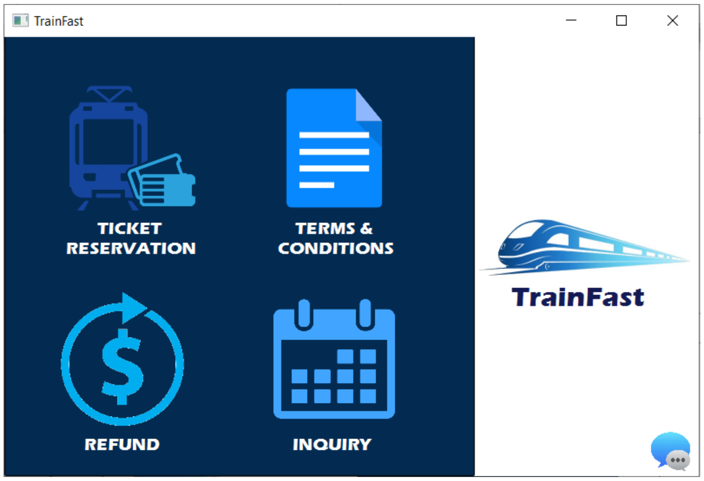


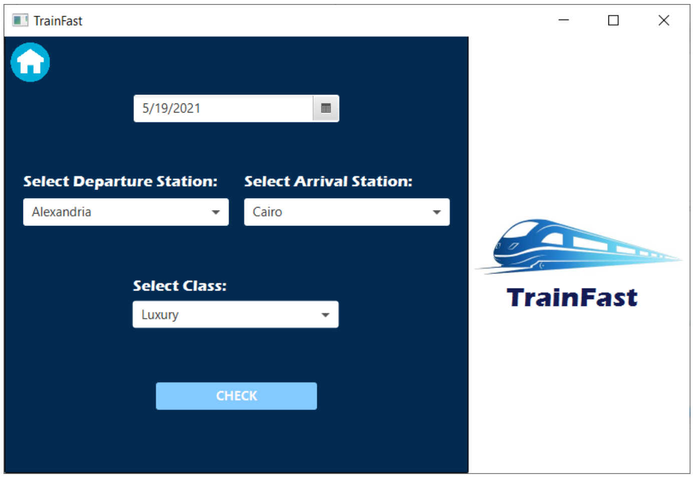
```
@FXML
public void LogIn(ActionEvent event) throws IOException {

    String Real_username = Username.getText();//String to store the username

    String Real_password = Password.getText();//String to store the password

    String filepath = ("C:\\Users\\DELL G3\\Documents\\NetBeansProjects\\Advanced12th-T1\\src\\advanced12th\\t1\\members.txt");

    boolean found = false;//boolean flag checking if the certain string is found or not

    String tempUsername = "";

    String tempPassword = "";

    try {
        x = new Scanner(new File(filepath));//Openning the file to scan info
        x.useDelimiter("[,\n]");//function for scanner to make him stop scanning at "\n" or ","

        while (x.hasNext() && !found) {
            tempUsername = x.next();
            tempPassword = x.next();
            //Scanning from the file

            if (tempUsername.trim().equals(Real_username.trim()) && tempPassword.trim().equals(Real_password.trim())) {//comparing the info of the
                Parent MainMenuParent = FXMLLoader.load(getClass().getResource("MainMenu2.fxml"));
                Scene MainMenuScene = new Scene(MainMenuParent);
                Stage stage = (Stage) ((Node) event.getSource()).getScene().getWindow();
                stage.setScene(MainMenuScene);
                stage.show();
                //entering the next scene if the username and password are correct
            } else {
                label.setText("Incorrect Username or Password, Try Again");//telling the user that the username or password are wrong
            }
            x.close();//closing file
        }
```

### 7. User friendly GUI

(Some Examples)





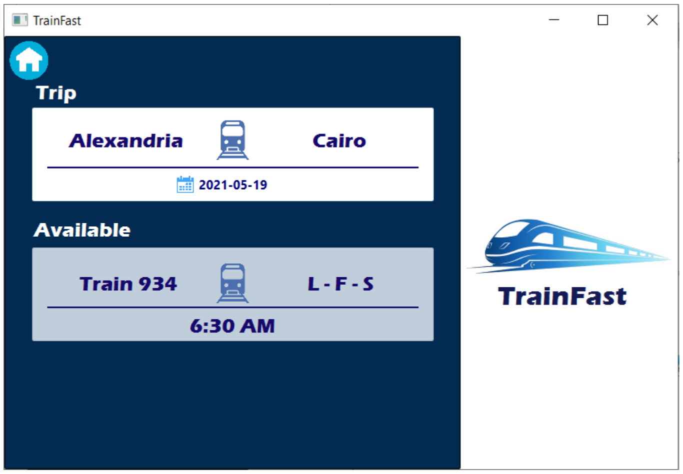


5/19/2021

Select Departure Station: Alexandria

Select Arrival Station: Cairo

Select Class: Luxury



Trip

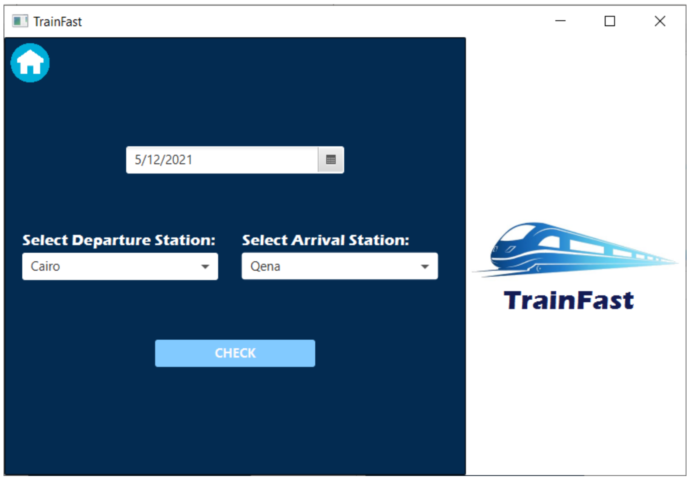
Alexandria Cairo

2021-05-19

Available

Train 934 L - F - S

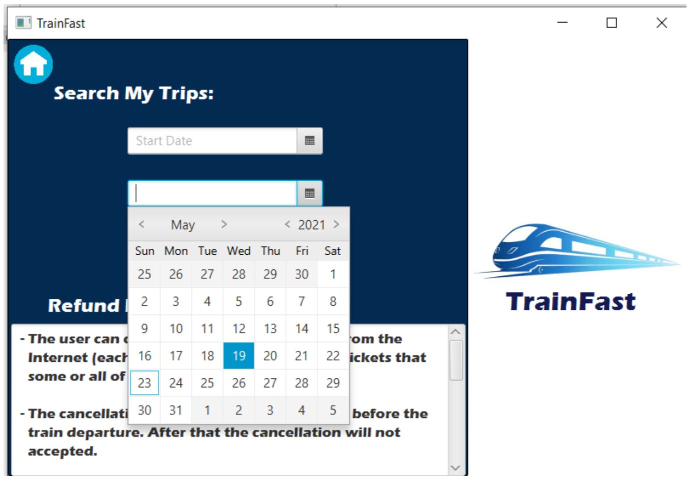
6:30 AM



5/12/2021

Select Departure Station: Cairo

Select Arrival Station: Qena



Search My Trips:

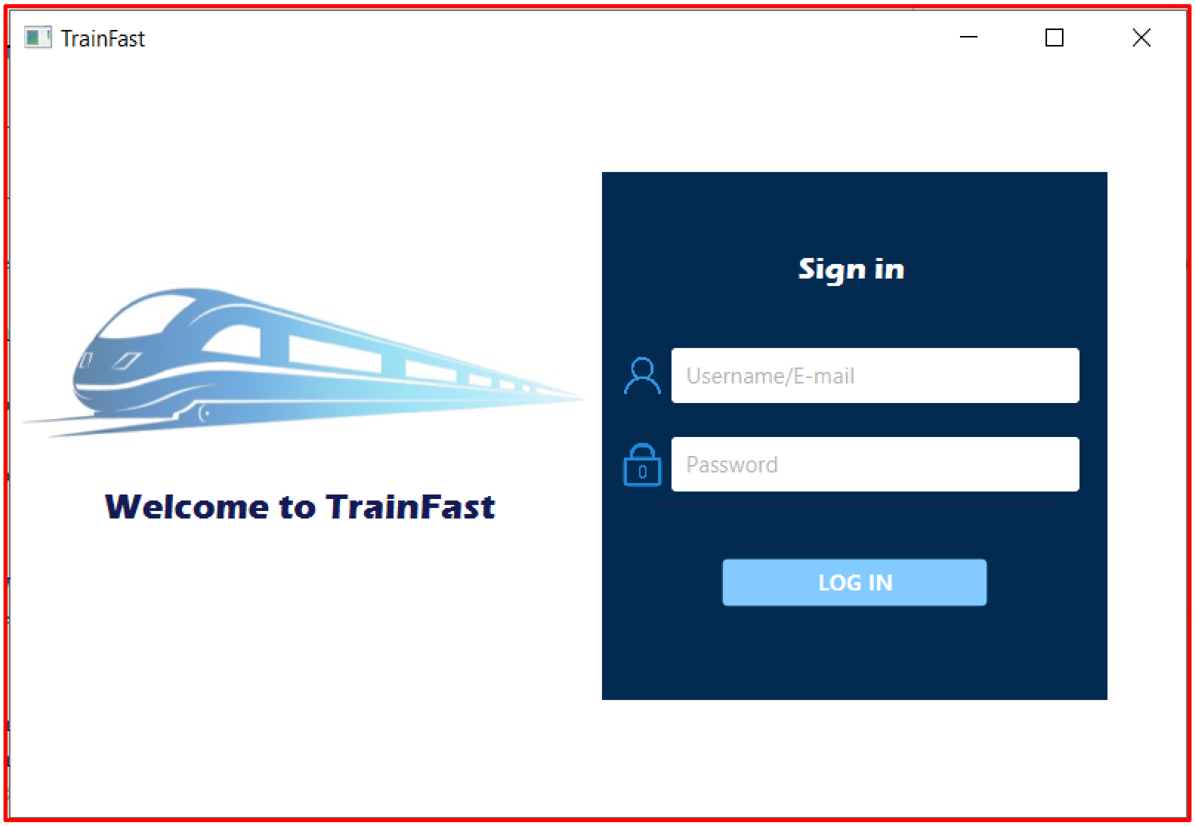
May 2021

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|---|---|---|---|---|---|---|
| 25 | 26 | 27 | 28 | 29 | 30 | 1 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | 31 | 1 | 2 | 3 | 4 | 5 |

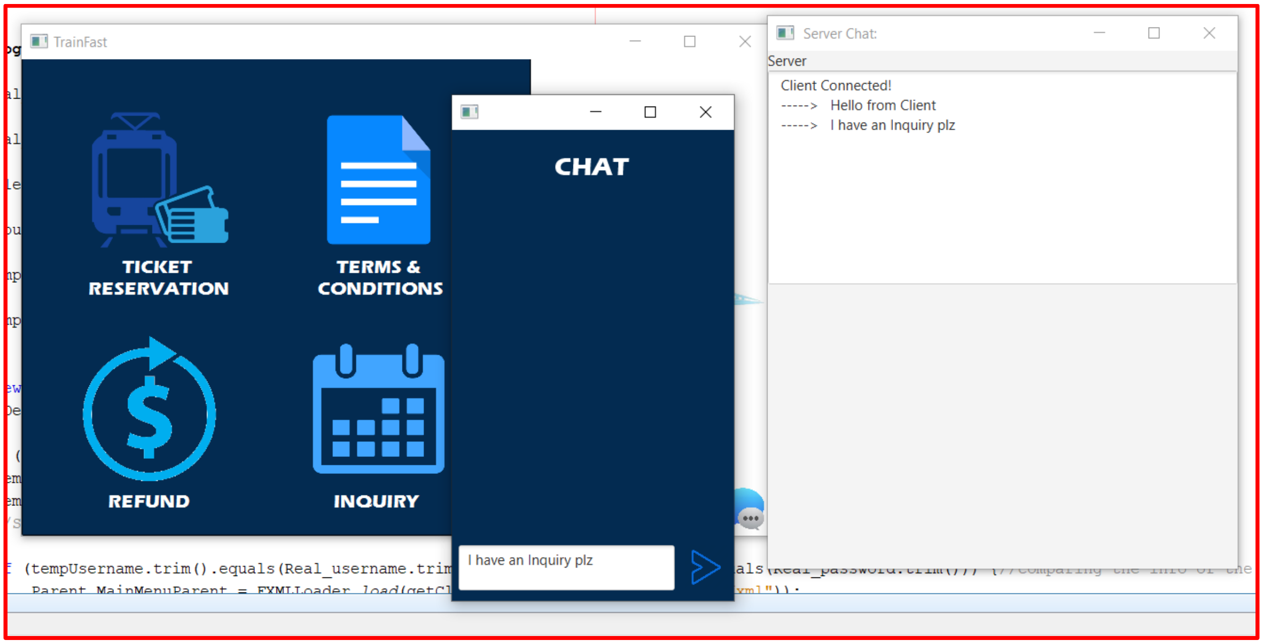
Refund I

- The user can c om the Internet (each ickets that some or all of
- The cancellati before the train departure. After that the cancellation will not accepted.

### 8. Login form for users and owner/manager



### 9. Network model (Messaging option)

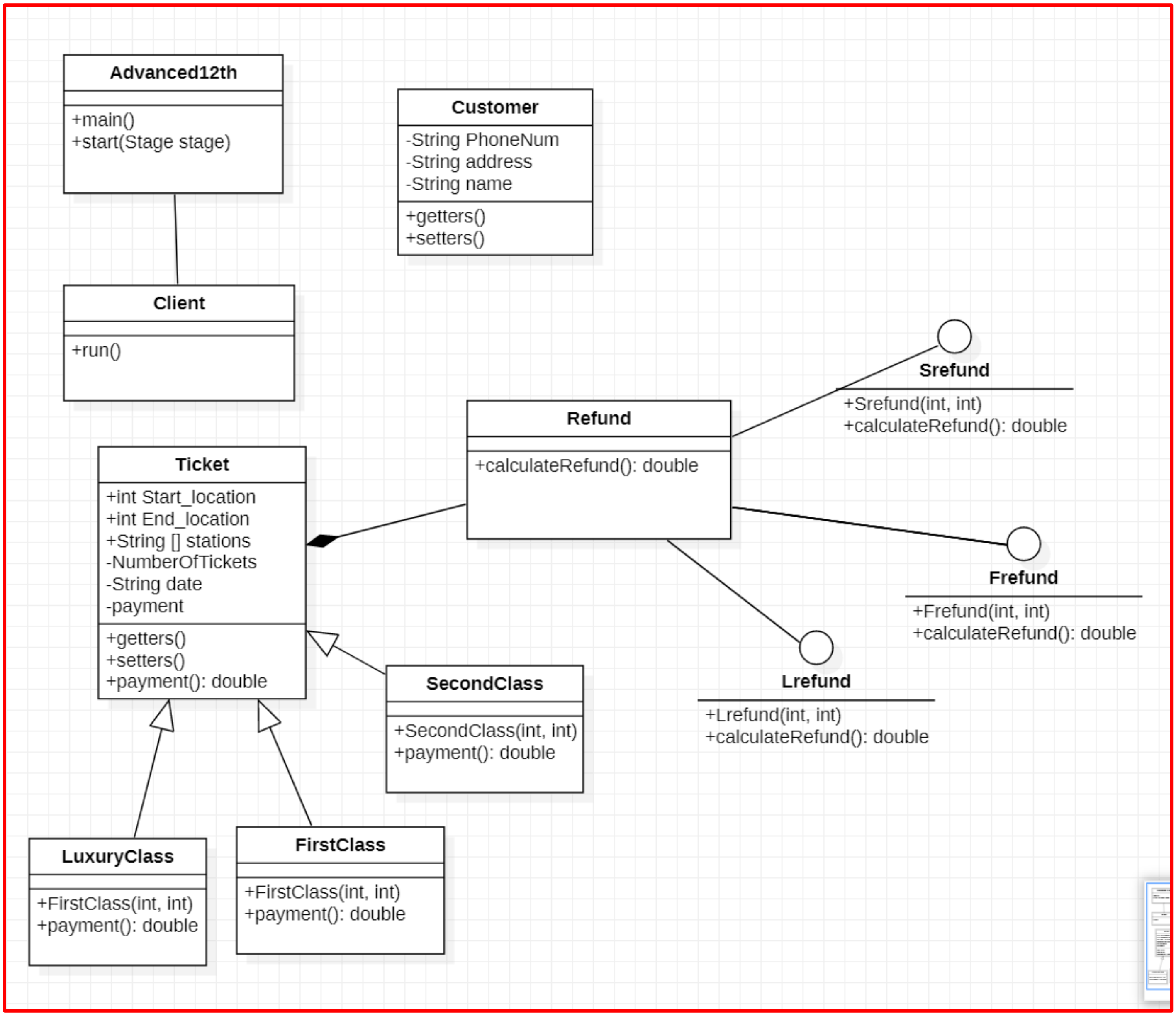


Client Connected!
-----> Hello from Client
-----> I have an Inquiry plz

I have an Inquiry plz

```
(tempUsername.trim().equals(Real_username.trim
 Parent MainMenuParent = FXMLLoader.load(getCl
```

**UML**



**Refund is an interface**

**Frefund, Srefund and Lrefund implements Refund**