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Submission date: 23-Jul-2021 08:57AM (UTC+0530)
Submission ID: 1622966055
File name: Canteen_Billing_System_USN_1NT19CS043_1NT19CS066_1NT19CS119.pdf (1.09M)
Word count: 3014
Character count: 17809

Title : CANTEEN BILLING SYSTEM

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USN : 1NT19CS043 , 1NT19CS066 , 1NT19CS119

CHAPTER 1: INTRODUCTION

1.1 Background

The prerequisites of the project was to implement javaFX project using other java features like class ,inheritance ,polymorphism ,exception handling ,file handling ,JDBC.

1.2 Brief history of Technology/concept

History of Java : Java was originally designed for interactive television, but it was too advanced technology for the digital cable television industry at the time. The history of Java starts with the Green Team. Java team members (also known as Green Team), initiated this project to develop a language for digital devices such as set-top boxes, televisions, etc. However, it was best suited for internet programming. Later, Java technology was incorporated by Netscape. The principles for creating Java programming were "Simple, Robust, Portable, Platform-independent, Secured, High Performance, Multithreaded, Architecture Neutral, Object-Oriented, Interpreted, and Dynamic". Java was developed by James Gosling, who is known as the father of Java, in 1995. James Gosling and his team members started the project in the early'90s.Currently, Java is used in internet programming, mobile devices, games, e-business solutions etc.

1.3 Applications

- Mobile Applications.
- Desktop GUI Applications.
- Web-based Applications.
- Enterprise Applications.
- Scientific Applications.

- Gaming Applications.
- Big Data technologies.
- Business Applications.

1.4 Research motivation and Problem statement

1.4.1 Research Motivation

The motivation for us is to build a project based on the concepts that we have learnt until now during our class hours and some additional information from outside.

So we thought of including all the concepts and creating a Real-World Application and we were successful in doing it.

We have not only implemented the concepts that we learnt during our class hours but we have also browsed few other concepts so that we could make the project more agile.

1.4.2 Statement of the problem

So the problem chosen by us is named as **CANTEEN BILLING SYSTEM .**Canteen Billing System is common type of any other ordinary billing system which you observe when you visit hotels , supermarkets and cafes. Using this system we can calculate the total price for the quantity of food ordered by the customer and we can print the invoice correspondingly .This includes a Sign-In form for which access is only given to the admin i.e., the person who has been assigned for the billing process .Next we have User Detail page where we are taking details from the user and store it in the database for the future use .Next we have a Food Ordering Page where we are calculating price for the food and generating the final invoice .This is our introduction to the project.

1.5 Summary

The summary is that we have utilized all the concepts learnt in the java classes and other concepts from oracle documentation to develop a real-time application.

CHAPTER 2: SYSTEM REQUIREMENTS SPECIFICATIONS

2.1 General Description

2.1.1 Product Perspective

While development and testing of the project it was found that there are some situation where the software started taking more time than expected to respond and it took more memory .Sometimes it would go to a not responding situation when we tested it in a low-end computer , so it is recommended to have a computer with good RAM .

2.2 System Requirements

2.2.1 Hardware Requirements

Processor : 1MHz or more(Dual Core 2.4GHz+ recommended)

RAM : 4GB or more

Internet Connection

2.2.2 Software Requirements

Operating System : Windows 7 or above recommended

Database : MySQL needs to be installed in the system

JAVA related files needs to be installed(java sdk)

2.3 Summary

As the software may lag or go to a not responding situation in a low performance system , it is recommended to have good system hardware and software.It is also mandatory to have java sdk installed as the software cannot work without it.

CHAPTER 3: IMPLEMENTATION

3.1 Description of Process

We spent nearly 3-4 days to complete the project. We as a team initially discussed about what would be the flow of the software and after deciding, we started noting down what labels , text fields , concepts , variables are needed .We have used many concepts of java like gui programming , exception handling ,file handling. Initially we decided to use an easy and a better way of placing all elements in the java window – gridpane. We referred this concept from the oracle documentation. Then we made a sign in page to show

that only employee with access to the database can use the software . After successful login , we take the customer details for any future purposes .Later we take the food quantity and then place the order . All these details are stored in a database. Total price can be checked before placing the order through the CHECK TOTAL PRICE button. Later the food details ,quantity and price is written into a text file which can be printed later. Customers can use their previous orders too if the details given by the customer is same as the details used for previous orders.

3.2 Pseudo Code

```
import javafx.application.*;
import javafx.scene.*;
import javafx.stage.*;
import javafx.scene.layout.*;
import javafx.scene.control.*;
import javafx.event.*;
import javafx.geometry.*;
import javafx.scene.text.*;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.PreparedStatement;
import java.sql.ResultSet;
import java.sql.Statement;
import java.io.File;
import java.io.FileWriter;
import java.io.IOException;
import java.io.PrintWriter;
import java.sql.SQLException;
import java.util.concurrent.TimeUnit;
public class App extends Application{
String mainreq,mainnum,mainage,mainid;
int res=0;
int paniPuri=0, masalaPuri=0,bhelPuri =0,vegNoodles=0,chickenNoodles=0;
public static void main(String[] args)  throws IOException{

launch(args);
}
public void start(Stage primaryStage) {

primaryStage.setTitle("Employee Login Form");
GridPane grid = new GridPane();
grid.setAlignment(Pos.CENTER);
grid.setHgap(10);
grid.setVgap(10);
grid.setPadding(new Insets(25, 25, 25, 25));

Scene scene = new Scene(grid, 300, 275);
```

```
primaryStage.setScene(scene);

Label userName = new Label("Enter Username:");
grid.add(userName, 0, 1);

TextField userTextField = new TextField();
grid.add(userTextField, 1, 1);

Label pw = new Label("Password:");
grid.add(pw, 0, 2);

PasswordField pwBox = new PasswordField();
grid.add(pwBox, 1, 2);
Button btn = new Button("Sign in");
grid.add(btn, 1, 4);
Label response = new Label();
grid.add(response,1,5);
btn.setOnAction(new EventHandler<ActionEvent>() {
@Override
public void handle(ActionEvent e) {
try
{
Class c1=Class.forName("com.mysql.cj.jdbc.Driver");

final String JdbcDriver="com.mysql.cj.jdbc.Driver";
final String user="root";
final String pass="nameesha";
final String db_url="jdbc:mysql://127.0.0.1:3306/login";
Connection con=DriverManager.getConnection(db_url,user,pass);

Statement stmt=(Statement) con.createStatement();
ResultSet rs = stmt.executeQuery("select * from users;");

String eD;
String dD;
String eP,dP;
while(rs.next())
{
eD = userTextField.getText();
dD = rs.getString(1);
eP = pwBox.getText();
dP = rs.getString(2);
if(eD.equals(dD) && eP.equals(dP))
{
res = 1;
primaryStage.close();
break;
}
else
```

```
{
res = 0;
System.out.println("Wrong username or password");

System.exit(0);
}
con.close();
}
rs.close();

}
catch(Exception e1)
{
e1.printStackTrace();
}

if(res == 1){
GridPane ask = new GridPane();

ask.setHgap(10);
ask.setVgap(10);
ask.setAlignment(Pos.CENTER);
ask.setPadding(new Insets(25, 25, 25, 25));
Scene askScene = new Scene(ask, 300, 300);

Stage askWindow = new Stage();
askWindow.setScene(askScene);
askWindow.setTitle("Select  button to order");
Button newOrder = new Button("New Order");
ask.add(newOrder,0,1);
newOrder.setOnAction(new EventHandler<ActionEvent>() {
public void handle(ActionEvent f){
GridPane data = new GridPane();

data.setHgap(10);
data.setVgap(10);
data.setAlignment(Pos.CENTER);
data.setPadding(new Insets(25, 25, 25, 25));
Scene dataScene = new Scene(data, 400, 300);

Stage dataWindow = new Stage();
dataWindow.setScene(dataScene);
dataWindow.setTitle("Customer Details");
Label d = new Label("Enter customer data");
Font font = Font.font("Verdana", FontWeight.BLACK, 15);
d.setFont(font);
data.add(d,0,1);

Label id = new Label("Customer ID:");
```

```
data.add(id,0,2);
TextField ID = new TextField();
data.add(ID,1,2);

Label name = new Label("Customer name:");
data.add(name,0,3);
TextField nameD = new TextField();
data.add(nameD,1,3);

Label ph = new Label("Customer phone number:");
data.add(ph,0,4);
TextField phD = new TextField();
data.add(phD,1,4);

Label age = new Label("Customer age:");
data.add(age,0,5);
TextField ageD = new TextField();
data.add(ageD,1,5);

Button submit = new Button("Submit details");
data.add(submit,0,6);
submit.setOnAction(new EventHandler<ActionEvent>() {
public void handle(ActionEvent g){

String name,ph,age;
int id_g = Integer.parseInt(ID.getText());

name = nameD.getText();
mainreq = nameD.getText();
mainnum = phD.getText();
mainage = ageD.getText();
ph = phD.getText();
age = ageD.getText();
mainid = ID.getText();
dataWindow.close();
GridPane gridOrder = new GridPane();

gridOrder.setHgap(10);
gridOrder.setVgap(10);
gridOrder.setPadding(new Insets(25, 25, 25, 25));
Scene secondScene = new Scene(gridOrder, 1000, 400);

Stage newWindow = new Stage();
newWindow.setTitle("Order Page");
newWindow.setScene(secondScene);
Label welcome = new Label("Welcome to the Canteen Billing Software");
gridOrder.add(welcome,0,1);
Font font = Font.font("Verdana", FontWeight.EXTRA_BOLD, 20);
welcome.setFont(font);
```

```
//menu
Label menu = new Label("Menu");
gridOrder.add(menu,0,2);
Font menuFont = Font.font("Aerial",FontWeight.BLACK, 15);
menu.setFont(menuFont);

//Price
Label price = new Label("Price");
gridOrder.add(price,1,2);
price.setFont(menuFont);

//Quantity
Label quantity = new Label("Quantity");
gridOrder.add(quantity,2,2);
quantity.setFont(menuFont);

Label bill = new Label("Total Bill");
gridOrder.add(bill,3,2);
bill.setFont(menuFont);

//menu items
Label pp = new Label("Panipuri");
gridOrder.add(pp,0,3);
Label mp = new Label("Masala Puri");
gridOrder.add(mp,0,4);
Label bp = new Label("Bhel Puri");
gridOrder.add(bp,0,5);
Label vn = new Label("Veg Noodles");
gridOrder.add(vn,0,6);
Label cn = new Label("Chicken Noodles");
gridOrder.add(cn,0,7);

//menu price
Label ppPrice = new Label("RS. 25");
gridOrder.add(ppPrice,1,3);
Label mpPrice = new Label("RS. 30");
gridOrder.add(mpPrice,1,4);
Label bpPrice = new Label("RS. 30");
gridOrder.add(bpPrice,1,5);
Label vnPrice = new Label("RS. 50");
gridOrder.add(vnPrice,1,6);
Label cnPrice = new Label("RS. 100");
gridOrder.add(cnPrice,1,7);

//Quantity textfield
TextField ppE = new TextField();
gridOrder.add(ppE,2,3);
TextField mpE = new TextField();
```

```
gridOrder.add(mpE,2,4);
TextField bpE = new TextField();
gridOrder.add(bpE,2,5);
TextField vnE = new TextField();
gridOrder.add(vnE,2,6);
TextField cnE = new TextField();
gridOrder.add(cnE,2,7);


Label panipuri = new Label();
gridOrder.add(panipuri,3,3);
Label masalapuri = new Label();
gridOrder.add(masalapuri,3,4);
Label bhelpuri = new Label();
gridOrder.add(bhelpuri,3,5);
Label vegnoodles = new Label();
gridOrder.add(vegnoodles,3,6);
Label chiknoodles = new Label();
gridOrder.add(chiknoodles,3,7);
Label t = new Label();
gridOrder.add(t,3,8);
Button foodprice = new Button("Check Total Price");
gridOrder.add(foodprice,3,9);
foodprice.setOnAction(new EventHandler<ActionEvent>(){
public void handle(ActionEvent h){
int p=0,m=0,b2=0,v=0,c=0,total=1;
if (ppE.getText().equals(""))
{
    panipuri.setText("Rs."+p);
}
else{

    p = Integer.parseInt(ppE.getText());
    p = p * 25;
    panipuri.setText("Rs."+String.valueOf(p));
}

if (mpE.getText().equals(""))
{
    masalapuri.setText("Rs."+String.valueOf(m));
}
else{

    m = Integer.parseInt(mpE.getText());
    m = m * 30;
    masalapuri.setText("Rs."+String.valueOf(m));
}

if (bpE.getText().equals(""))
```

```
{
    bhelpuri.setText("Rs."+String.valueOf(b2));
}
else{

    b2 = Integer.parseInt(bpE.getText());
    b2 = b2 * 30;
    bhelpuri.setText("Rs."+String.valueOf(b2));
}
if (vnE.getText().equals(""))
{
    vegnoodles.setText("Rs."+String.valueOf(v));
}
else{

    v = Integer.parseInt(vnE.getText());
    v = v * 50;;
    vegnoodles.setText("Rs."+String.valueOf(v));
}
if (cnE.getText().equals(""))
{
    chiknoodles.setText("Rs."+String.valueOf(c));
}
else{

    c = Integer.parseInt(cnE.getText());
    c = c * 100;
    chiknoodles.setText("Rs."+String.valueOf(c));
}
total = p + m + b2 + v + c;
t.setText("Total Price is Rs."+total);
}
});
Button order = new Button("Place Order");
gridOrder.add(order,2,8);
order.setOnAction(new EventHandler<ActionEvent>() {
@Override
public void handle(ActionEvent e) {

if(ppE.getText().equals(""))
{
    paniPuri = 0;
}
else{
    paniPuri = Integer.parseInt(ppE.getText())*25;
}
if(mpE.getText().equals(""))
{
    masalaPuri = 0;
```

```
}
else{
    masalaPuri = Integer.parseInt(mpE.getText())*30;
}
if(bpE.getText().equals(""))
{
    bhelPuri = 0;
}
else{
    bhelPuri = Integer.parseInt(bpE.getText())*30;
}
if(vnE.getText().equals(""))
{
    vegNoodles = 0;
}
else{
    vegNoodles = Integer.parseInt(vnE.getText())*50;
}
if(cnE.getText().equals(""))
{
    chickenNoodles = 0;
}
else{
    chickenNoodles = Integer.parseInt(cnE.getText())*100;
}
try
{
    Class c1=Class.forName("com.mysql.cj.jdbc.Driver");

    final String JdbcDriver="com.mysql.cj.jdbc.Driver";
    final String user="root";
    final String pass="nameesha";
    final String db_url="jdbc:mysql://127.0.0.1:3306/login";
    Connection con=DriverManager.getConnection(db_url,user,pass);

    Statement stmt=(Statement) con.createStatement();
    String sql = "INSERT INTO user_details("
            + "name,"
            + "phoneno, "
            + "age,"
            + "pp,"
            + "mp,"
            + "bp,"
            + "vn,"
            + "cn,"
            + "ID)"
            +  "VALUES(?,?,?,?,?,?,?,?,?)";
            PreparedStatement preparedStatement = con.prepareStatement(sql);
            preparedStatement.setString(1,name);
```

```
            preparedStatement.setString(2,ph);
            preparedStatement.setString(3,age);
            preparedStatement.setString(4,ppE.getText());
            preparedStatement.setString(5,mpE.getText());
            preparedStatement.setString(6,bpE.getText());
            preparedStatement.setString(7,vnE.getText());
            //System.out.println(vnE.getText());
            //System.out.println(cnE.getText());
            //System.out.println(id_g);
            preparedStatement.setString(8,cnE.getText());
            preparedStatement.setString(9,Integer.toString(id_g));
            preparedStatement.execute();
            con.close();
}
catch(Exception e1)
{
    e1.printStackTrace();
}

GridPane bill = new GridPane();

bill.setHgap(10);
bill.setVgap(10);

bill.setPadding(new Insets(25, 25, 25, 25));
Scene billScene = new Scene(bill, 300, 300);

Stage billWindow = new Stage();
billWindow.setScene(billScene);
billWindow.setTitle("Final Bill");
Font menuFont = Font.font("Aerial",FontWeight.BLACK, 15);

Label billMenu = new Label("Food Ordered");
bill.add(billMenu,0,1);
billMenu.setFont(menuFont);
Label billPrice = new Label("Price");
bill.add(billPrice,1,1);
billPrice.setFont(menuFont);
int i=2,j=2;
if(paniPuri != 0)
{
    Label finalP = new Label("Pani Puri");
    bill.add(finalP,0,i);
    i++;
    Label finalPB = new Label();
    bill.add(finalPB,1,j);
    j++;
    finalPB.setText(Integer.toString(paniPuri));
}
```

```
if(masalaPuri != 0)
{
    Label finalM = new Label("Masala Puri");
    bill.add(finalM,0,i);
    i++;
    Label finalPM = new Label();
    bill.add(finalPM,1,j);
    j++;
    finalPM.setText(Integer.toString(masalaPuri));
}
if(bhelPuri != 0)
{
    Label finalB = new Label("Bhel Puri");
    bill.add(finalB,0,i);
    i++;
    Label finalBB = new Label();
    bill.add(finalBB,1,j);
    j++;
    finalBB.setText(Integer.toString(bhelPuri));
}

if(vegNoodles != 0)
{
    Label finalB = new Label("Veg Noodles");
    bill.add(finalB,0,i);
    i++;
    Label finalBB = new Label();
    bill.add(finalBB,1,j);
    j++;
    finalBB.setText(Integer.toString(vegNoodles));
}

if(chickenNoodles != 0)
{
    Label finalB = new Label("Chicken Noodles");
    bill.add(finalB,0,i);
    i++;
    Label finalBB = new Label();
    bill.add(finalBB,1,j);
    j++;
    finalBB.setText(Integer.toString(chickenNoodles));
}
Label totalBill = new Label();
bill.add(totalBill,0,i);
int finalBillPrint = paniPuri + masalaPuri + bhelPuri + vegNoodles + chickenNoodle
s;
if(finalBillPrint > 0)
    totalBill.setText("Total Price : Rs."+Integer.toString(finalBillPrint));
//Later
```

```
Label question = new Label("Do you want to print the bill?");
bill.add(question,0,i+1);
Button print = new Button("YES");
bill.add(print,1,j+1);
print.setOnAction(new EventHandler<ActionEvent>(){
    public void handle(ActionEvent x)
    {
        try{
        File file = new File("Bill.txt");
        FileWriter fw = new FileWriter(file);
        PrintWriter pw = new PrintWriter(fw);
        pw.println("Customer ID: "+id_g);
        pw.println("Customer Name: "+mainreq);
        pw.println("Customer number: "+mainnum);
        pw.println("Customer age: "+mainage);
        pw.println("**************TOTAL AMOUNT**************");
        pw.println("FOOD                QUANTITY     RATE(In Rupee)");
        if(paniPuri != 0)
            pw.println("Pani Puri      "+"        "+ppE.getText()+"          "+pani
Puri);
        if(masalaPuri != 0)
            pw.println("Masala Puri    "+"        "+mpE.getText()+"          "+masa
laPuri);
        if(bhelPuri != 0)
            pw.println("Bhel Puri      "+"        "+bpE.getText()+"          "+bhel
Puri);
        if(vegNoodles != 0)
            pw.println("Veg Noodles    "+"        "+vnE.getText()+"          "+vegN
oodles);
        if(chickenNoodles != 0)
            pw.println("Chicken Noodles"+"        "+cnE.getText()+"          "+chic
kenNoodles);
        pw.println("****************************************");
        int totaAmount = paniPuri+masalaPuri+bhelPuri+vegNoodles+chickenNoodles;
        pw.println("Total amount: Rs."+totaAmount);
        pw.close();

    }
        catch(Exception file)
        {
            System.out.println(file);
        }
        newWindow.close();
        billWindow.close();
    }
});
Button no = new Button("NO");
no.setOnAction(new EventHandler<ActionEvent>(){
    public void handle(ActionEvent x)
```

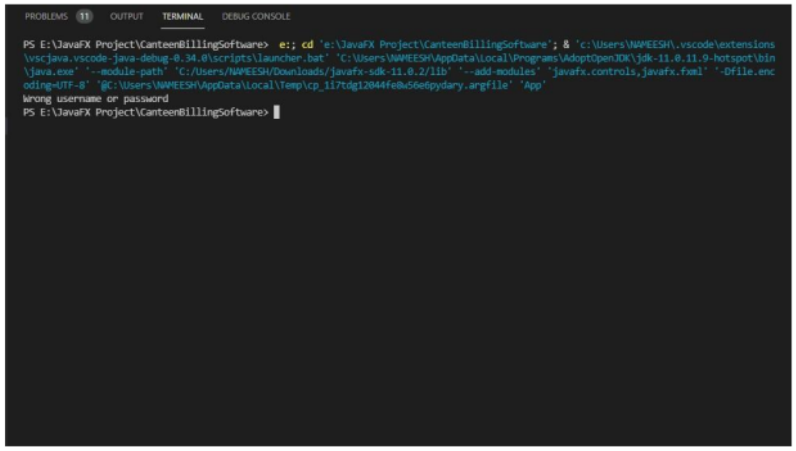
```
    {
        newWindow.close();
        billWindow.close();
    }
});
j = j + 1;
bill.add(no,2,j);
billWindow.show();
}
});
Button previous = new Button("Load previous order?");
gridOrder.add(previous,2,9);
previous.setOnAction(new EventHandler<ActionEvent>(){
@Override
public void handle(ActionEvent e)
{

try
{

    Class c1=Class.forName("com.mysql.cj.jdbc.Driver");

    final String JdbcDriver="com.mysql.cj.jdbc.Driver";
    final String user="root";
    final String pass="nameesha";
    final String db_url="jdbc:mysql://127.0.0.1:3306/login";
    Connection con=DriverManager.getConnection(db_url,user,pass);

    Statement stmt=(Statement) con.createStatement();

    ResultSet rs1 = stmt.executeQuery("select pp,mp,bp,vn,cn from user_details whe
re ID="+id_g+" and name='"+mainreq+"' and phoneno='"+mainnum+"' and age='"+mainage
+"';");




    while(rs1.next()){
        ppE.setText(rs1.getString(1));
        //System.out.println(rs1.getString(1));
        mpE.setText(rs1.getString(2));
        //System.out.println(rs1.getString(2));
        bpE.setText(rs1.getString(3));
        //System.out.println(rs1.getString(3));
        vnE.setText(rs1.getString(4));
        cnE.setText(rs1.getString(5));

        break;
    }
```

```
    con.close();
}
catch(Exception e2)
{
        e2.printStackTrace();
}
}
});
newWindow.show();
}
});

dataWindow.show();
}
});


askWindow.show();

}}

});



primaryStage.show();
}

}
```

CHAPTER 4 :OUTPUT

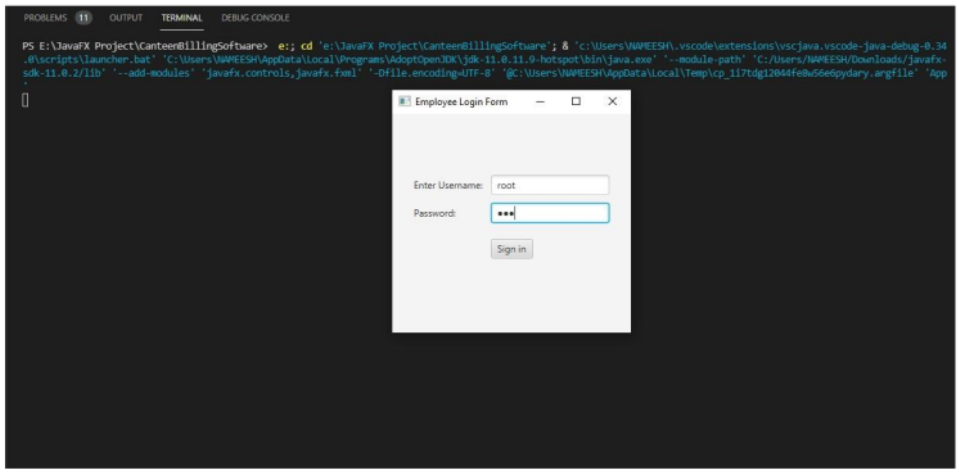
Credentials database:

Test case 1: When entered credentials are wrong.

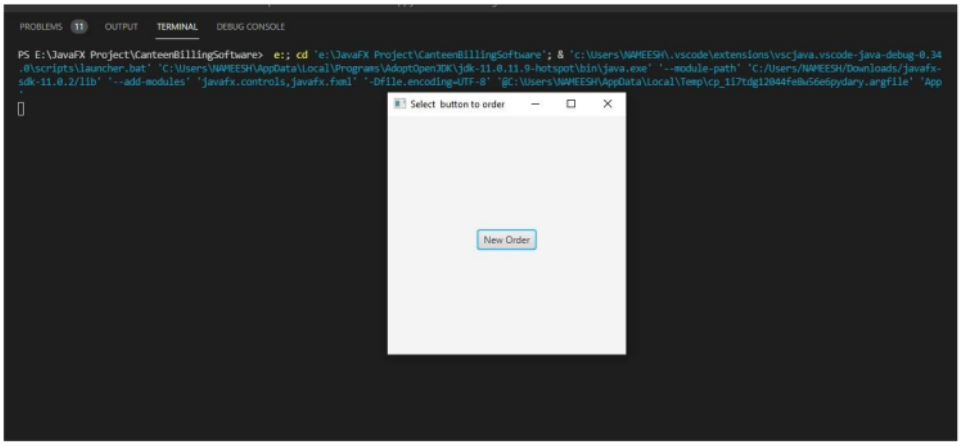


Test Case 2:

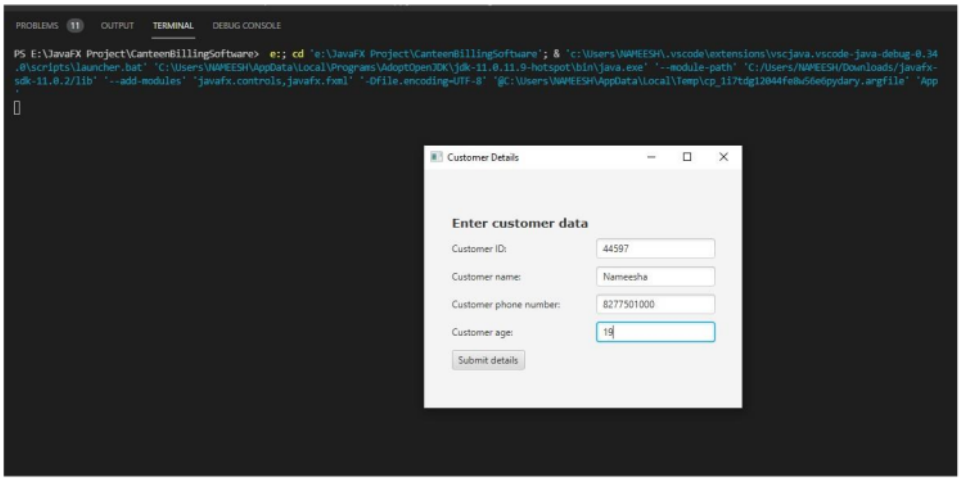
1. Sign in page



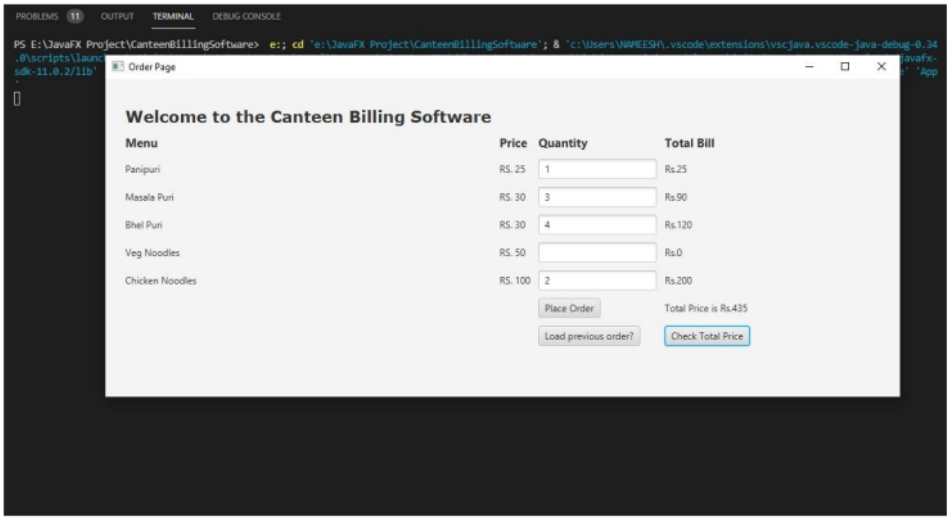
2. New Order Page



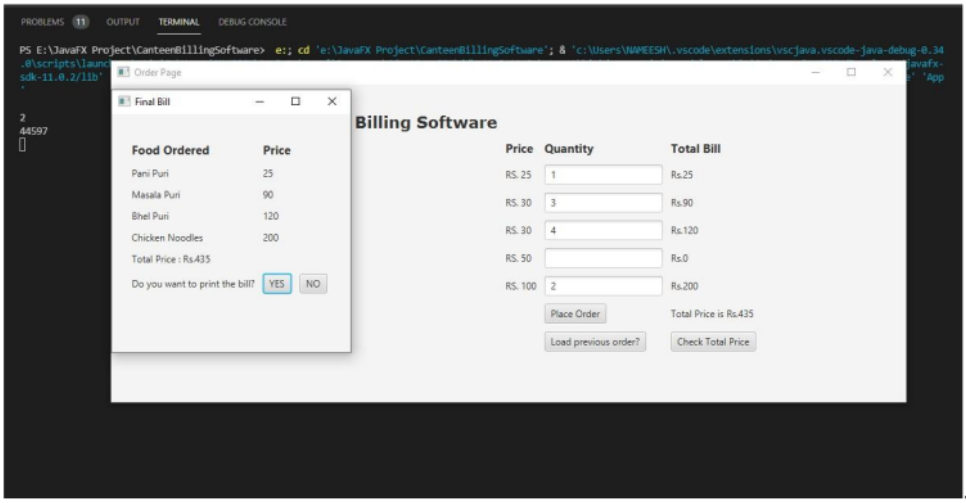
3. Taking customer information



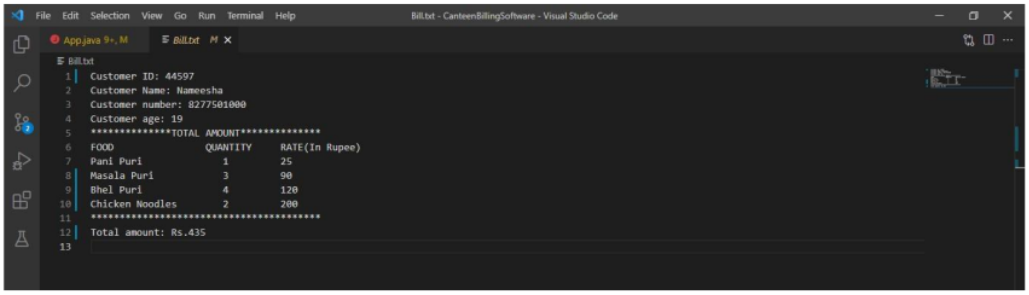
4. Order Page



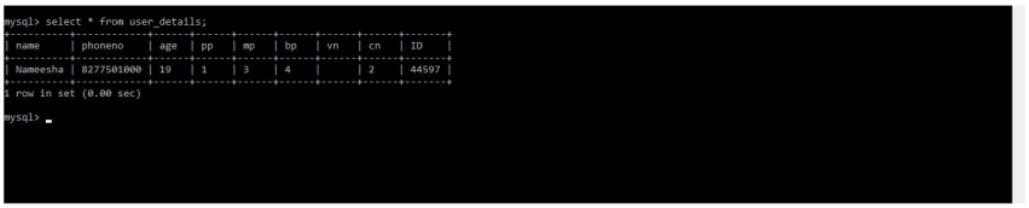
5. Final Bill Page



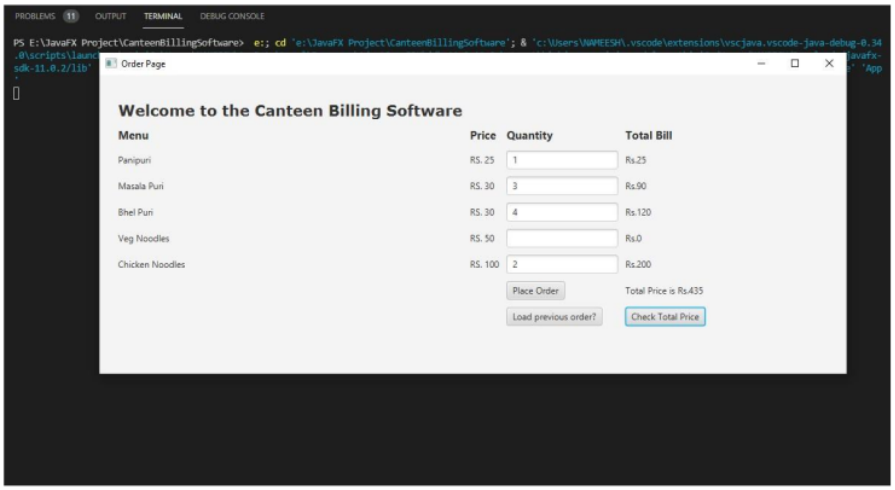
6. Bill text file



7. SQL Database record



8. Load Previous order



CHAPTER 5: RESULTS

We as a team were successful in creating a real-time application using java based on our understanding of the subject.

CHAPTER 6 : CONCLUSION

Java is one of the most used programming languages with a lot of properties. We as a team of 3 members created a real-time application using java . The software was based on our efforts and understanding of the subject. We implemented file handling , exception handling , javaFX , JDBC and created a login page to login into the software , customer details page to store customer data for future references , order page to take customer orders and some extra features like accessing customer's previous orders and printing the bill. After a lot of testing and handling errors , we were successful in developing this software and it was a very good experience.

REFERENCES

We have taken references from oracle official documentation for some concepts like gridpane and prepared statements(sql) .All other code were based on our understanding and efforts .

Nameesha Tantri

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