



North South University

CSE 215 INTRODUCTION TO PROGRAMMING LANGUAGE II PROJECT REPORT

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Project Name

E-Commerce Bill Generator

Introduction

E-Commerce Bill Generator is a software built with Java which will provide a cash memo with correct results of shopping of the customers. The main objective of this project is to provide the shopping records of the customers correctly through a cash memo. It will take some inputs like the name of the product, quantity, given amount by the customer, etc. and will give the correct return amount after adding the vat with that.

Components

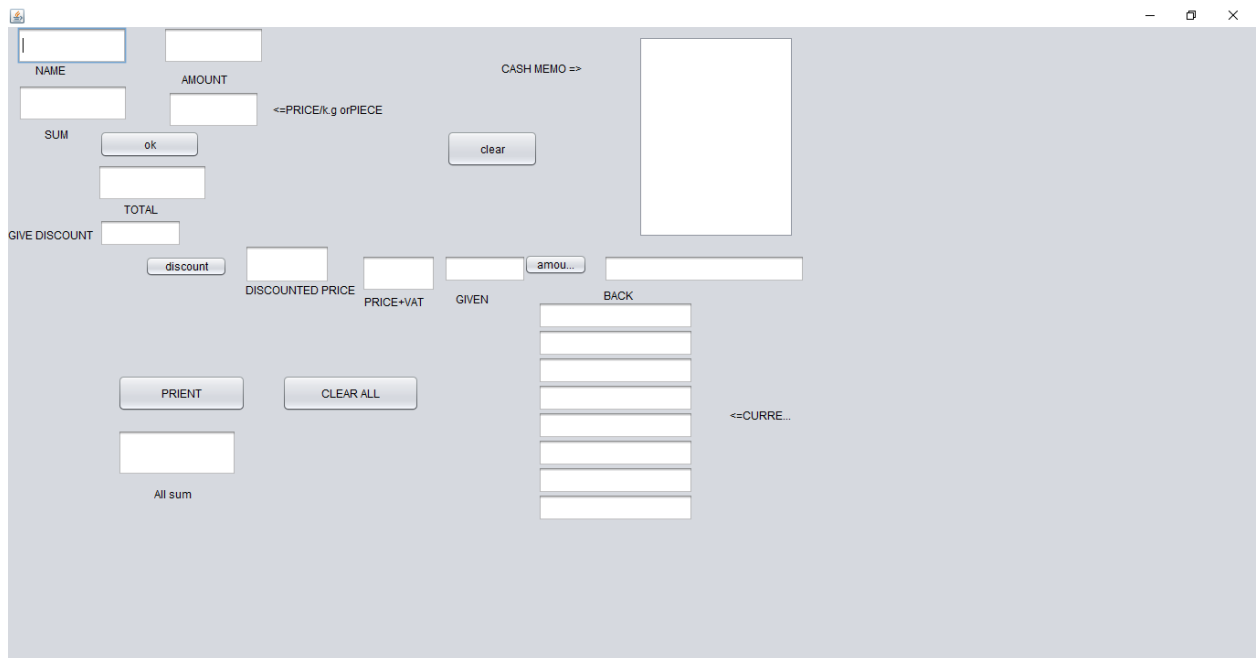
1. Object Oriented Java (As the main programming language).
2. JFrame (As the framework).

Methodology

Some methods used in our project are discussed below:

- ❖ **Inheritance:** Inheritance is a mechanism in which one class acquires the property of another class. For example, a child inherits the traits of his/her parents. With inheritance, we can reuse the fields and methods of the existing class. In our project, product is the parent class and productname is the child class. So, all the attributes (fields and methods) of product was inherited to productname. Some extra fields and methods were added to the productname class alongside the attributes of its parent class. So, the concept of Inheritance has been used here.
- ❖ **Encapsulation:** Encapsulation in Java is a mechanism of wrapping the data (variables) and code acting on the data (methods) together as a single unit. We have used only public access modifier in our project. But still we have used getters and setters to take input values. This particular technique has been applied to use those values in some methods. For example: sum(), vat() etc. So, the concept of encapsulation has been also used in our project.

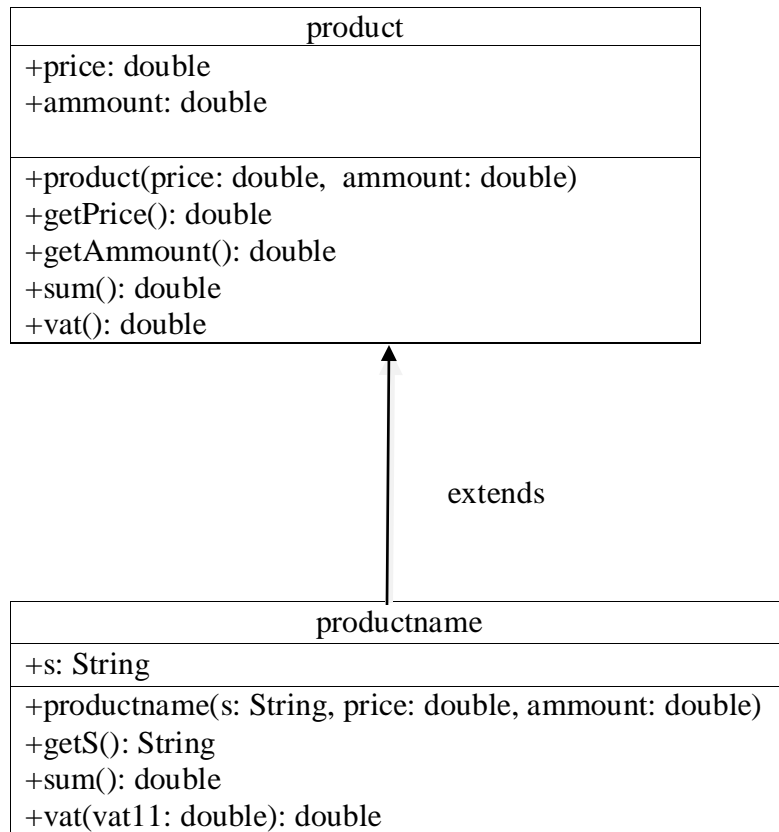
- ❖ **Polymorphism:** Polymorphism is the ability of an object to take on many forms. The most common use of polymorphism in OOP occurs when a parent class reference is used to refer to a child class object. The concept of polymorphism has been used in our project. In the parent class product we have used methods like sum(), vat(). In the child class productname we have also used methods like sum(), vat(). The methods in both of the classes have exactly same names but different purposes. So, this justifies the concept of polymorphism.
- ❖ **JFrame:** JFrame has been used in our project for the purpose of creating user interface. All the attributes and elements visible in the user interface have been built with JFrame. JFrame class is a type of container which inherits the java. JFrame works like the main window where components like labels, buttons, textfields are added to create a GUI. A GUI (graphical user interface) is a system of interactive visual components for computer software. A GUI displays objects that carry information, and represent actions which can be taken by the user.



The user interface of our project looks like this.

So, these are the main methods which have been used to develop our project.

UML Class Diagram



Codes:

product.java:

```
import javax.swing.JTextField;

public class product {
    public double price;
    public double ammount;

    public product(double price, double ammount) {
        this.price = price;
        this.ammount = ammount;
    }
}
```

```

    product(JTextField productPrice, int i) {
        throw new UnsupportedOperationException("Not supported yet.");
    }

    product(JTextField productPrice, JTextField productQTY) {
        throw new UnsupportedOperationException("Not supported yet.");
    }

    public double getPrice() {
        return price;
    }

    public void setPrice(double price) {
        this.price = price;
    }

    public double getAmmount() {
        return ammount;
    }

    public void setAmmount(double ammount) {
        this.ammount = ammount;
    }

    public double sum(){
        return getAmmount()*getPrice();
    }

    public double vat(){
        return (sum()*5)/100;
    }
}

```

productname.java:

```

import java.io.File;
import java.io.FileWriter;
import javax.swing.JTextField;

public class productname extends product {
    String s;

    public productname(String s, double price, double ammount) {
        super(price, ammount);
        this.s = s;
    }
}

```

```

    }

    public String getS() {
        return s;
    }

    public void setS(String s) {
        this.s = s;
    }

    public double sum(){
        double sum=0;
        return sum+(getAmmount()*getPrice());
    }

    public double vat(double vat11){

        return vat11;
    }
}

```

NewJFrame3.java:

```

import java.io.File;
import java.io.FileWriter;
import java.util.Scanner;

public class NewJFrame3 extends javax.swing.JFrame {

    public NewJFrame3() {
        initComponents();
    }

    private void initComponents() {

        name = new javax.swing.JTextField();
        jButton1 = new javax.swing.JButton();
        price = new javax.swing.JTextField();
        amount = new javax.swing.JTextField();
        sum = new javax.swing.JTextField();
    }
}

```

```

jLabel1 = new javax.swing.JLabel();
jLabel2 = new javax.swing.JLabel();
jLabel3 = new javax.swing.JLabel();
sum2 = new javax.swing.JTextField();
discount = new javax.swing.JTextField();
dicounted = new javax.swing.JTextField();
vat = new javax.swing.JTextField();
given = new javax.swing.JTextField();
jButton2 = new javax.swing.JButton();
jLabel4 = new javax.swing.JLabel();
jLabel5 = new javax.swing.JLabel();
jLabel6 = new javax.swing.JLabel();
jLabel7 = new javax.swing.JLabel();
jLabel8 = new javax.swing.JLabel();
jLabel9 = new javax.swing.JLabel();
jButton3 = new javax.swing.JButton();
backm = new javax.swing.JTextField();
jLabel10 = new javax.swing.JLabel();
taka = new javax.swing.JTextField();
jLabel11 = new javax.swing.JLabel();
taka1 = new javax.swing.JTextField();
taka2 = new javax.swing.JTextField();
taka3 = new javax.swing.JTextField();
taka4 = new javax.swing.JTextField();
taka5 = new javax.swing.JTextField();
taka6 = new javax.swing.JTextField();
taka7 = new javax.swing.JTextField();
clear = new javax.swing.JButton();
jButton4 = new javax.swing.JButton();
jButton5 = new javax.swing.JButton();
jScrollPane1 = new javax.swing.JScrollPane();
all = new javax.swing.JTextPane();
jLabel12 = new javax.swing.JLabel();
sumall = new javax.swing.JTextField();
jLabel13 = new javax.swing.JLabel();

setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);
setIconImages(null);
getContentPane().setLayout(null);

name.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        nameActionPerformed(evt);
    }
});
getContentPane().add(name);

```



```

name.setBounds(10, 0, 120, 40);

jButton1.setText("ok");
jButton1.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton1ActionPerformed(evt);
    }
});
getContentPane().add(jButton1);
jButton1.setBounds(100, 113, 110, 30);
getContentPane().add(price);
price.setBounds(175, 70, 100, 40);

amount.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        amountActionPerformed(evt);
    }
});
getContentPane().add(amount);
amount.setBounds(170, 0, 110, 40);

sum.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        sumActionPerformed(evt);
    }
});
getContentPane().add(sum);
sum.setBounds(11, 63, 120, 40);

jLabel1.setText("NAME");
getContentPane().add(jLabel1);
jLabel1.setBounds(30, 40, 60, 14);

jLabel2.setText("AMOUNT");
getContentPane().add(jLabel2);
jLabel2.setBounds(190, 50, 70, 14);

jLabel3.setText("<=PRICE/k.g orPIECE");
getContentPane().add(jLabel3);
jLabel3.setBounds(290, 80, 130, 20);
getContentPane().add(sum2);
sum2.setBounds(98, 150, 120, 40);
getContentPane().add(discount);
discount.setBounds(100, 210, 90, 30);
getContentPane().add(dicounted);
dicounted.setBounds(259, 238, 93, 42);

```

```

getContentPane().add(vat);
vat.setBounds(387, 249, 81, 40);

given.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        givenActionPerformed(evt);
    }
});

getContentPane().add(given);
given.setBounds(477, 249, 90, 30);

jButton2.setText("discount");
jButton2.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton2ActionPerformed(evt);
    }
});
getContentPane().add(jButton2);
jButton2.setBounds(150, 250, 90, 23);

jLabel4.setText("SUM");
getContentPane().add(jLabel4);
jLabel4.setBounds(40, 110, 70, 14);

jLabel5.setText("TOTAL");
getContentPane().add(jLabel5);
jLabel5.setBounds(127, 192, 90, 14);

jLabel6.setText("BACK");
getContentPane().add(jLabel6);
jLabel6.setBounds(652, 286, 60, 14);

jLabel7.setText("DISCOUNTED PRICE");
getContentPane().add(jLabel7);
jLabel7.setBounds(260, 280, 120, 14);

jLabel8.setText("PRICE+ VAT");
getContentPane().add(jLabel8);
jLabel8.setBounds(390, 290, 80, 20);

jLabel9.setText("GIVEN");
getContentPane().add(jLabel9);
jLabel9.setBounds(490, 290, 60, 14);

```

```

jButton3.setText("amount");
jButton3.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton3ActionPerformed(evt);
    }
});
getContentPane().add(jButton3);
jButton3.setBounds(565, 248, 69, 23);
getContentPane().add(backm);
backm.setBounds(652, 249, 220, 30);

jLabel10.setText("GIVE DISCOUNT");
getContentPane().add(jLabel10);
jLabel10.setBounds(0, 220, 100, 14);
getContentPane().add(taka);
taka.setBounds(580, 300, 170, 30);

jLabel11.setText("<=CURRENCY");
getContentPane().add(jLabel11);
jLabel11.setBounds(790, 404, 70, 40);
getContentPane().add(taka1);
taka1.setBounds(580, 330, 170, 30);
getContentPane().add(taka2);
taka2.setBounds(580, 360, 170, 30);
getContentPane().add(taka3);
taka3.setBounds(580, 390, 170, 30);
getContentPane().add(taka4);
taka4.setBounds(580, 420, 170, 30);
getContentPane().add(taka5);
taka5.setBounds(580, 450, 170, 30);
getContentPane().add(taka6);
taka6.setBounds(580, 480, 170, 30);
getContentPane().add(taka7);
taka7.setBounds(580, 510, 170, 30);

clear.setText("clear");
clear.addActionListener(new java.awt.event.ActionListener() {
    public void actionPerformed(java.awt.event.ActionEvent evt) {
        clearActionPerformed(evt);
    }
});
getContentPane().add(clear);
clear.setBounds(480, 113, 100, 40);

jButton4.setText("CLEAR ALL");
jButton4.addActionListener(new java.awt.event.ActionListener() {

```

```

        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jButton4ActionPerformed(evt);
        }
    });
    getContentPane().add(jButton4);
    jButton4.setBounds(300, 380, 150, 40);

    jButton5.setText("PRIENT");
    jButton5.addActionListener(new java.awt.event.ActionListener() {
        public void actionPerformed(java.awt.event.ActionEvent evt) {
            jButton5ActionPerformed(evt);
        }
    });
    getContentPane().add(jButton5);
    jButton5.setBounds(120, 380, 140, 40);

    jScrollPane1.setViewportViewView(all);

    getContentPane().add(jScrollPane1);
    jScrollPane1.setBounds(690, 10, 170, 220);

    jLabel12.setText("CASH MEMO =>");
    getContentPane().add(jLabel12);
    jLabel12.setBounds(540, 30, 140, 30);
    getContentPane().add(sumall);
    sumall.setBounds(120, 440, 130, 50);

    jLabel13.setText("All sum");
    getContentPane().add(jLabel13);
    jLabel13.setBounds(160, 490, 70, 40);

    pack();
}

private void amountActionPerformed(java.awt.event.ActionEvent evt) { //GEN-
FIRST:event_amountActionPerformed
    // TODO add your handling code here:
} //GEN-LAST:event_amountActionPerformed

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) { //GEN-
FIRST:event_jButton1ActionPerformed

    File fm = new File("output.txt");
    File fn = new File("sum.txt");
    File fk = new File("szl.txt");
    File f = new File("input.txt");

```

```

File fh = new File("saz.txt");

double getsum = 0;
double allsum=0;
String s = name.getText();
s=s.toLowerCase();
double pr = 0;
int amo=0,amou=0;
try {
    Scanner sc = new Scanner(f);
    while (sc.hasNextLine()) {
        String t = sc.nextLine();
        if (t.endsWith(s)) {

            pr = sc.nextDouble();
        }
    }
} catch (Exception exp) {

}

price.setText(String.valueOf(pr));

double a = Double.parseDouble(amount.getText());
productname p = new productname(s, pr, a);
sum.setText(String.valueOf(p.sum()));
try {
    Scanner sc = new Scanner(fh);

    String t = sc.nextLine();
    if (t.endsWith(s)) {

        amo = sc.nextInt();
        amou=amo-(int)a;

    }
} catch (Exception exp) {

}
try {
    Scanner sc = new Scanner(fh);
    while (sc.hasNextLine()) {
        String t = sc.nextLine();

```

```

        if (t.endsWith(s)) {
while (sc.hasNextLine()){

    FileWriter f4 = new FileWriter(fh,true);
    //f4.write("");
    f4.append(String.valueOf(amou = sc.nextInt()));
    f4.close();
    break;
    }
    }
} catch (Exception exp) {

}

try {

    FileWriter fw = new FileWriter(fm, true);
    FileWriter f2 = new FileWriter(fn, true);
    FileWriter f3 = new FileWriter(fk, true);
    f2.write(String.valueOf(p.sum()));
    f2.write("\n");
    f3.write(String.valueOf(p.sum()));
    f3.write("\n");
    fw.write(s + " " + String.valueOf(a) + " " + String.valueOf(pr));
    fw.write("\n");
    fw.close();
    f2.close();
    f3.close();
} catch (Exception ex) {

}

try {
    Scanner sc = new Scanner(fn);
    while (sc.hasNextLine()) {
        double t = sc.nextDouble();

        getsum = t + getsum;

        sum2.setText(String.valueOf(getsum));
    }
} catch (Exception e) {

}

try {

```

```

Scanner sc = new Scanner(fk);
while (sc.hasNextLine()) {
    double t = sc.nextDouble();

    allsum= t + allsum;

    sumall.setText(String.valueOf(allsum));
}
} catch (Exception e) {

}

all.setText(all.getText() + name.getText()+ " " + amount.getText()+" kg =
"+sum.getText() + " taka" +"\n" );

name.setText("");

amount.setText("");
} //GEN-LAST:event_jButton1ActionPerformed

private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) { //GEN-
FIRST:event_jButton2ActionPerformed
    double getsum2 = Double.parseDouble(sum2.getText()) -
    Double.parseDouble(discount.getText()) * Double.parseDouble(sum2.getText()) / 100;
    dicounted.setText(String.valueOf(getsum2));
    double getsum3 = getsum2 + (getsum2 * 5) / 100;
    vat.setText(String.valueOf(getsum3));

} //GEN-LAST:event_jButton2ActionPerformed

private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) { //GEN-
FIRST:event_jButton3ActionPerformed
    double back = Double.parseDouble(given.getText()) - Double.parseDouble(vat.getText());
    backm.setText(String.valueOf(back));
    if (back != 0) {
        int r;

        if (back >= 500) {
            r = (int) (back / 500);
            back = back % 500;
            taka.setText("500 taka = " + String.valueOf(r));

        }
        if (back >= 100) {
            r = (int) (back / 100);

```

```

        back = (back % 100);
        taka1.setText("100 taka = " + String.valueOf(r));

    }
    if (back >= 50) {
        r = (int) (back / 50);
        back = (back % 50);
        taka2.setText("50 taka = " + String.valueOf(r));

    }
    if (back >= 20) {
        r = (int) (back / 20);
        back = (back % 20);
        taka3.setText("20 taka = " + String.valueOf(r));

    }
    if (back >= 10) {
        r = (int) (back / 10);
        back = (back % 10);
        taka4.setText("10 taka = " + String.valueOf(r));

    }
    if (back >= 5) {
        r = (int) (back / 5);
        back = (back % 5);
        taka5.setText("5 taka = " + String.valueOf(r));
    }
    if (back >= 2) {
        r = (int) (back / 2);
        back = (back % 2);
        taka6.setText("2 taka = " + String.valueOf(r));

    }
    if (back >= 1) {
        r = (int) (back / 1);
        back = (back % 1);
        taka7.setText("choklet = " + String.valueOf(r));
    }

}
} //GEN-LAST:event_jButton3ActionPerformed

private void nameActionPerformed(java.awt.event.ActionEvent evt) { //GEN-FIRST:event_nameActionPerformed

} //GEN-LAST:event_nameActionPerformed

```



```

private void givenActionPerformed(java.awt.event.ActionEvent evt) { //GEN-FIRST:event_givenActionPerformed
    // TODO add your handling code here:
} //GEN-LAST:event_givenActionPerformed

private void clearActionPerformed(java.awt.event.ActionEvent evt) { //GEN-FIRST:event_clearActionPerformed
    name.setText("");
    price.setText("");
    amount.setText("");
    sum.setText("");
} //GEN-LAST:event_clearActionPerformed

private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) { //GEN-FIRST:event_jButton4ActionPerformed
    name.setText("");
    price.setText("");
    amount.setText("");
    sum.setText("");
    sum2.setText("");
    discount.setText("");
    dicounted.setText("");
    vat.setText("");
    given.setText("");
    backm.setText("");
    taka.setText("");
    taka1.setText("");
    taka2.setText("");
    taka3.setText("");
    taka4.setText("");
    taka5.setText("");
    taka6.setText("");
    taka7.setText("");
    all.setText("");

} //GEN-LAST:event_jButton4ActionPerformed

private void jButton5ActionPerformed(java.awt.event.ActionEvent evt) { //GEN-FIRST:event_jButton5ActionPerformed
    try {
        FileWriter fk = new FileWriter("receit.txt");
        fk.write("STS SUPER SHOP");
        fk.write("\n");
        fk.write("      (Shop):Arogra");
        fk.write("\n");
    }
}

```

```

        fk.write("\n");

        fk.write("-----=");
        fk.write("\n");

        fk.write("\n");
        fk.write(all.getText());
        fk.write("-----=");
        fk.write("\n");
        fk.write("Total amount  =  " + sum2.getText() + "taka");
        fk.write("\n");
        fk.write(" Discount   =  " + discount.getText() + " %");
        fk.write("\n");
        fk.write(" Discounted price =  " + dicounted.getText() + " taka");
        fk.write("\n");
        fk.write(" Price + Vat   =  " + vat.getText() + " taka");
        fk.write("\n");
        fk.write(" Given amount =  " + given.getText() + " taka");
        fk.write("\n");
        fk.write("-----=");
        fk.write("\n");
        fk.write(" Return amount =  " + backm.getText() + " taka");
        fk.write("\n");
        fk.write("THANK YOU");
        fk.close();

    } catch (Exception expc) {}
    File fn = new File("sum.txt");
    try{
        FileWriter f2 = new FileWriter(fn);
        f2.write("");
        f2.close();
    }
    catch (Exception exce){

    }
} //GEN-LAST:event_jButton5ActionPerformed

private void sumActionPerformed(java.awt.event.ActionEvent evt) { //GEN-FIRST:event_sumActionPerformed
    // TODO add your handling code here:
} //GEN-LAST:event_sumActionPerformed

/**

```

```

* @param args the command line arguments
*/
public static void main(String args[]) {
    /* Set the Nimbus look and feel */
    //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code (optional) ">
    /* If Nimbus (introduced in Java SE 6) is not available, stay with the default look and feel.
    * For details see http://download.oracle.com/javase/tutorial/uiswing/lookandfeel/plaf.html
    */
    try {
        for (javax.swing.UIManager.LookAndFeelInfo info :
javax.swing.UIManager.getInstalledLookAndFeels()) {
            if ("Nimbus".equals(info.getName())) {
                javax.swing.UIManager.setLookAndFeel(info.getClassName());
                break;
            }
        }
    } catch (ClassNotFoundException ex) {

java.util.logging.Logger.getLogger(NewJFrame3.class.getName()).log(java.util.logging.Level.S
EVERE, null, ex);
    } catch (InstantiationException ex) {

java.util.logging.Logger.getLogger(NewJFrame3.class.getName()).log(java.util.logging.Level.S
EVERE, null, ex);
    } catch (IllegalAccessException ex) {

java.util.logging.Logger.getLogger(NewJFrame3.class.getName()).log(java.util.logging.Level.S
EVERE, null, ex);
    } catch (javax.swing.UnsupportedLookAndFeelException ex) {

java.util.logging.Logger.getLogger(NewJFrame3.class.getName()).log(java.util.logging.Level.S
EVERE, null, ex);
    }
    //</editor-fold>

    /* Create and display the form */
    java.awt.EventQueue.invokeLater(new Runnable() {
        @Override
        public void run() {
            new NewJFrame3().setVisible(true);
            //new NewJFrame3("");
        }
    });
}

// Variables declaration - do not modify//GEN-BEGIN:variables

```

```

private javax.swing.JTextPane all;
private javax.swing.JTextField amount;
private javax.swing.JTextField backm;
private javax.swing.JButton clear;
private javax.swing.JTextField dicounted;
private javax.swing.JTextField discount;
private javax.swing.JTextField given;
private javax.swing.JButton jButton1;
private javax.swing.JButton jButton2;
private javax.swing.JButton jButton3;
private javax.swing.JButton jButton4;
private javax.swing.JButton jButton5;
private javax.swing.JLabel jLabel1;
private javax.swing.JLabel jLabel10;
private javax.swing.JLabel jLabel11;
private javax.swing.JLabel jLabel12;
private javax.swing.JLabel jLabel13;
private javax.swing.JLabel jLabel2;
private javax.swing.JLabel jLabel3;
private javax.swing.JLabel jLabel4;
private javax.swing.JLabel jLabel5;
private javax.swing.JLabel jLabel6;
private javax.swing.JLabel jLabel7;
private javax.swing.JLabel jLabel8;
private javax.swing.JLabel jLabel9;
private javax.swing.JScrollPane jScrollPane1;
private javax.swing.JTextField name;
private javax.swing.JTextField price;
private javax.swing.JTextField sum;
private javax.swing.JTextField sum2;
private javax.swing.JTextField sumall;
private javax.swing.JTextField taka;
private javax.swing.JTextField taka1;
private javax.swing.JTextField taka2;
private javax.swing.JTextField taka3;
private javax.swing.JTextField taka4;
private javax.swing.JTextField taka5;
private javax.swing.JTextField taka6;
private javax.swing.JTextField taka7;
private javax.swing.JTextField vat;
// End of variables declaration//GEN-END:variables
}

```

Discussion & Conclusion

The products with their respective prices will be written and saved in a text file. At first, we will work with a limited number of products. We will increase the number of products in the near future. So for now, any user will have to choose from the set of limited products.

After running the project successfully an interface built with JFrame will appear. There will be options for input, buttons for calculations, and display sections for output. First, a user will give the product name, quantity, price as input then he/she will press an enter button and the total price will be shown as calculated. Then, the total price will be added with the vat and the final price will be displayed. Lastly, the user will enter the initial amount the customer has paid, and if the final price matches with the initial amount then there will be nothing in the giving back section. But if the final price doesn't match with the initial amount then the subtraction result will be recorded in the giving back section. Finally, if the user presses the print button then all these precise details will be written in another text file which is our final output.

```
STS SUPER SHOP
      (Shop):Arogra)

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Rice  2 kg  = 200.0 taka
-----
Total amount    =      200.0taka
Discount        =       5 %
Discounted price = 190.0 taka
Price + Vat     =      199.5 taka
Given amount    =      500 taka
-----

Return amount   =      300.5 taka
THANK YOU
```

A sample of the final output of our project “E-Commerce Bill Generator”.

So, this was a little discussion about the working procedure of our project. For the moment, our project works just fine but with some limitations. Hopefully, we will be able to develop our project with more attributes in the near future.