DATABASE MANAGEMENT SYSTEMS PROJECT

TOPIC - FOOD DELIVERY SYSTEM

SUBMITTED BY-

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ABSTRACT

Food delivery system is one sort of geological data frameworks (GIS) that can be applied through digitation process. The principle case in food delivery framework is the best approach to decide the briefest way and nourishment conveyance vehicle development following. In this way, to ensure that the digitation procedure of food delivery framework can be applied proficiently, it is expected to include most limited way assurance office and food delivery vehicle following. This exploration utilizes A 0-1 Knapsack and Fractional Knapsack algorithm for deciding most limited way and area based framework (LBS) programming for moving food conveyance vehicle item following. As indicated by this examination, it is produced the coordinated framework that can be utilized by nourishment conveyance driver, client, and manager as far as disentangling the nourishment

INTRODUCTION

The knapsack issue is fascinating from the point of view of software engineering for some reasons:

The choice issue type of the backpack issue (Can an estimation of in any event V be accomplished without surpassing the weight W?) is NP-finished, accordingly, there is no known calculation both right and quick (polynomial-time) in all cases.

While the choice issue is NP-finished, the enhancement issue is NP-hard, its goals are in any event as troublesome as the choice issue, and there is no known polynomial calculation which can tell, given an answer, regardless of whether it is ideal (which would imply that there is no arrangement with a bigger V, in this way tackling the NP-complete choice issue).

There is a pseudo-polynomial time calculation utilizing dynamic programming.

There is a completely polynomial-time estimate plot, which uses the pseudo-polynomial time calculation as a subroutine, depicted beneath.

Numerous cases that emerge practically speaking, and "arbitrary cases" from certain conveyances, can regardless be explained precisely.

There is a connection between the "choice" and "enhancement" issues in that in the event that there exists a polynomial calculation that settles the "choice" issue, at that point one can locate the greatest incentive for the improvement issue in polynomial time by applying this calculation iteratively while expanding the estimation of k . Then again, if a calculation finds the ideal estimation of the improvement issue in polynomial time, at that point the choice issue can be illuminated in polynomial time by looking at the estimation of the arrangement yield by this calculation with the estimation of k. Therefore, the two forms of the issue are of comparative trouble.

One topic in research writing is to distinguish what the "hard" occurrences of the rucksack issue look like, or saw another way, to recognize what properties of cases by and by might make them more amiable than their most pessimistic scenario NP-complete conduct suggests.

The objective in finding these "hard" cases is for their utilization in open key cryptography frameworks, for example, the Merkle-Hellman backpack cryptosystem. So we will structure a UI where the client and picked their items and we will sort the items making a differentiation between 0-1 rucksack and fragmentary rucksack (since the polynomial-time of both differs), making a productive promoting just as every framework utilizing these two showcasing methodologies.

METHOD-

We have prepared database on mysql and java GUI on netbeans.

Our business algorithm includes comparison between fractional and 0-1 knapsack.

Orders from customers will be stored in database and values of few tuples are retrieved to netbeans for knapsack algorithms.

LITERATURE REVIEW

In [1] a robotized nourishment requesting framework is proposed which will monitor client arranges cleverly. Essentially, they executed a nourishment requesting framework for various sort of eateries in which client will make request or make custom nourishment by a single tick as it were. By methods for android application for Tablet PCs this framework was executed. The front end was created utilizing JAVA, Android and at the backend MySQL database was utilized.

In [2] Customer utilizing a Smartphone is considered as an essential presumption for the framework. At the point when the client way to deal with the eatery, the spared request can be affirmed by contacting the Smartphone. The rundown of chose preordered things will be appeared on the kitchen screen, and when affirmed, request slip will be printed for further request handling. The arrangement gives simple and advantageous approach to choose pre-request exchange structure clients.

In [3] there was an endeavor to structure and usage of advanced feasting in eateries utilizing android innovation. This framework was an essential powerful database utility framework which brings all data from a brought together database. Proficiency what's more, precision of cafés just as human blunders were improved by this easy to use application. Prior downsides of mechanized nourishment requesting frameworks were overwhelmed by this framework and it requires an one-time venture for devices.

In [4] a use of coordination of lodging the board frameworks by web administrations innovation is exhibited. Requesting Framework Kitchen Order Ticket (KOT), Billing System, Client Relationship Management framework (CRM) are held together by the Digital Hotel Management. Include or grow of inn programming framework in any size of inn networks condition was conceivable with this arrangement.

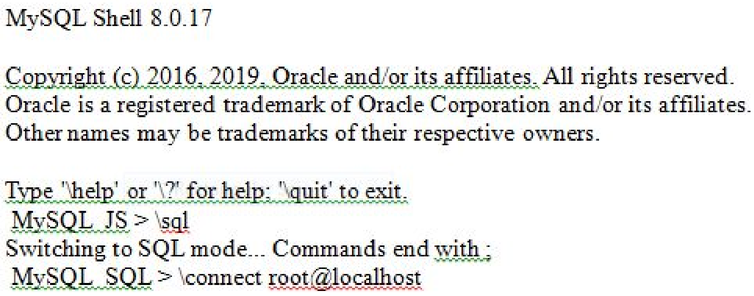
In [5] research work means to plan and build up a remote food delivery framework in the eatery. Specialized activities of Wireless Ordering System (WOS) including frameworks design, capacity, constraints and suggestions were introduced in this framework. It was accepted that with the expanding utilization of handheld gadget, for example, PDAs in eateries, unavoidable application will turn into a significant apparatus for cafés to improve the administration perspective by limiting human mistakes and by giving higher caliber client support.

In [6] alongside client input for an eatery a structure what's more, execution of remote nourishment requesting framework was conveyed out. It empowers eatery proprietors to arrangement the framework in remote condition and update menu introductions effectively. Advanced cell has been coordinated in the adaptable remote nourishment requesting framework with continuous client criticism execution to encourage constant correspondence between eatery proprietors and clients.

DISCUSSION

In this project, we are going to compare fractional and 0-1 knapsack algorithm for a food delivery system. Customers will give order through GUI which gets stored in a database along with details of customers as join between these 2 tables. Weight and value of food items are extracted from database for input to knapsack algorithms. These algorithms will provide what maximum value of items can be delivered at once. Both algorithms are compared on 2 basis- what maximum value they can accommodate in one knapsack and time complexity of algorithm to provide result. On seeing results of both algorithms, we conclude that fractional knapsack give more value to accommodate in a knapsack because it allows to break items but 0-1 knapsack does not, but 0-1 knapsack provides result faster as its time complexity is O(n) as compared to O(nlogn) of fractional knapsack.

Mysql codes-



```
MySQL Shell 8.0.17

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Type '\help' or '\?' for help; '\quit' to exit.
 MySQL  JS > \sql
Switching to SQL mode... Commands end with ;
 MySQL  SQL > \connect root@localhost
```
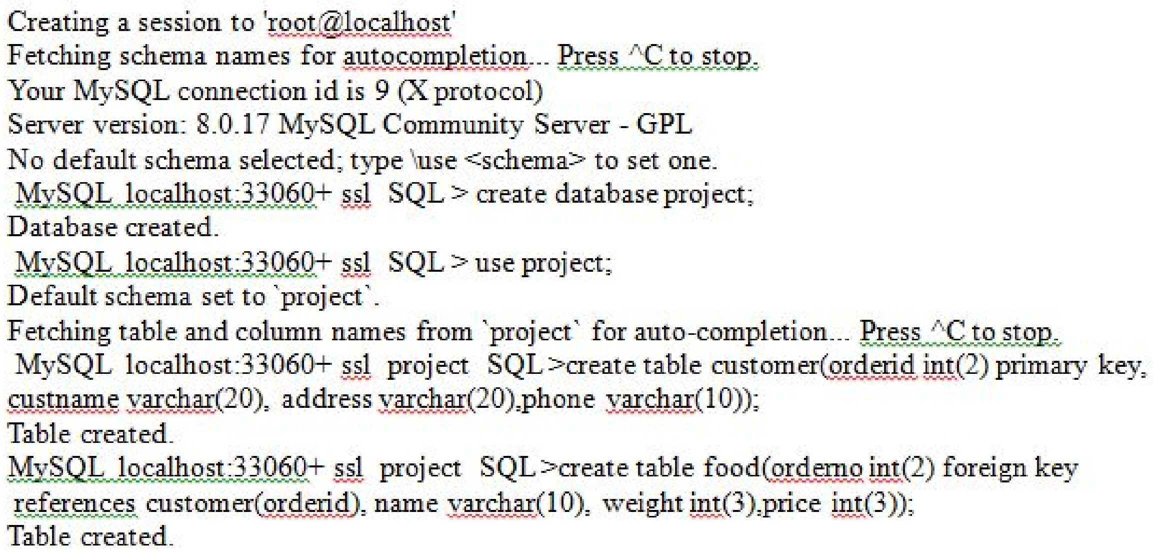
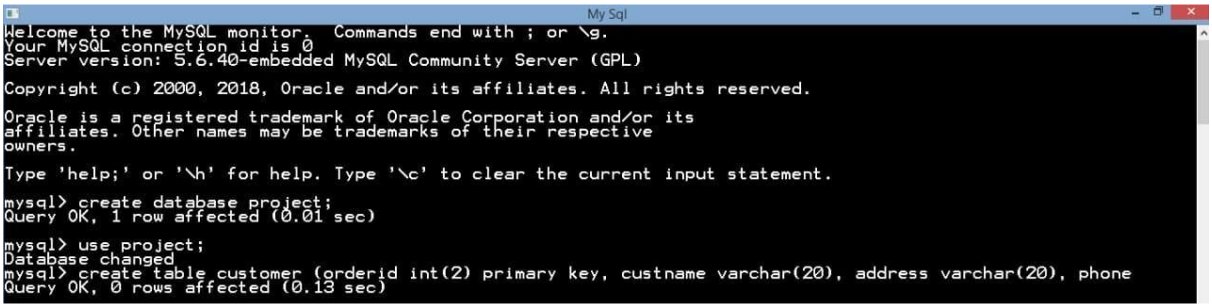



```
Creating a session to 'root@localhost'
Fetching schema names for autocompletion... Press ^C to stop.
Your MySQL connection id is 9 (X protocol)
Server version: 8.0.17 MySQL Community Server - GPL
No default schema selected; type \use <schema> to set one.
 MySQL  localhost:33060+ ssl  SQL > create database project;
Database created.
 MySQL  localhost:33060+ ssl  SQL > use project;
Default schema set to `project`.
Fetching table and column names from `project` for auto-completion... Press ^C to stop.
 MySQL  localhost:33060+ ssl  project  SQL >create table customer(orderid int(2) primary key,
custname varchar(20), address varchar(20),phone  varchar(10));
Table created.
MySQL  localhost:33060+ ssl  project  SQL >create table food(orderno int(2) foreign key
 references customer(orderid), name varchar(10), weight int(3),price int(3));
Table created.
```



```
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 0
Server version: 5.6.40-embedded MySQL Community Server (GPL)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create database project;
Query OK, 1 row affected (0.01 sec)

mysql> use project;
Database changed
mysql> create table customer (orderid int(2) primary key, custname varchar(20), address varchar(20), phone
Query OK, 0 rows affected (0.13 sec)
```
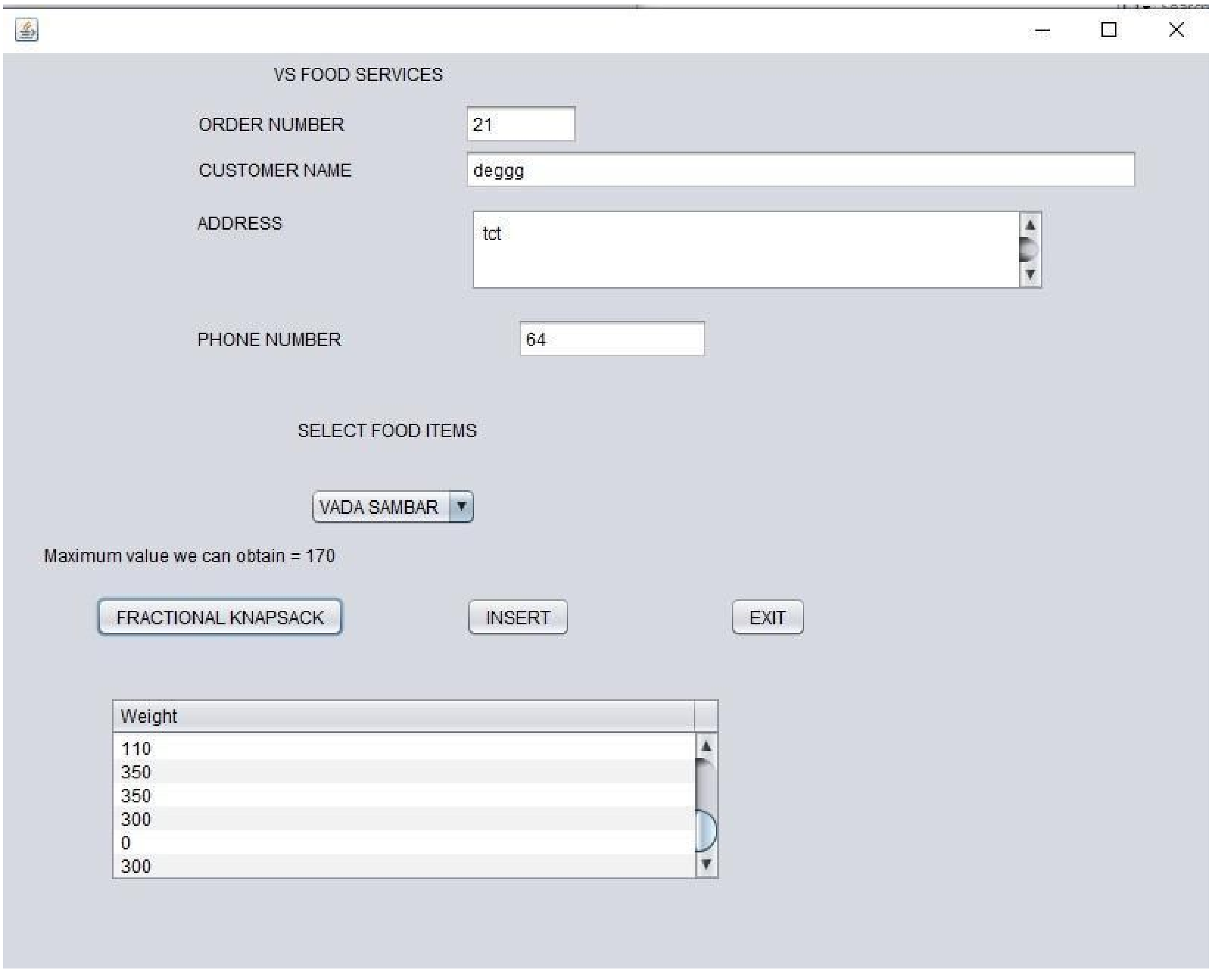

JAVA CODES-

GUI FOR FRACTIONAL KNAPSACK-



VS FOOD SERVICES

ORDER NUMBER 21

CUSTOMER NAME deggg

ADDRESS tct

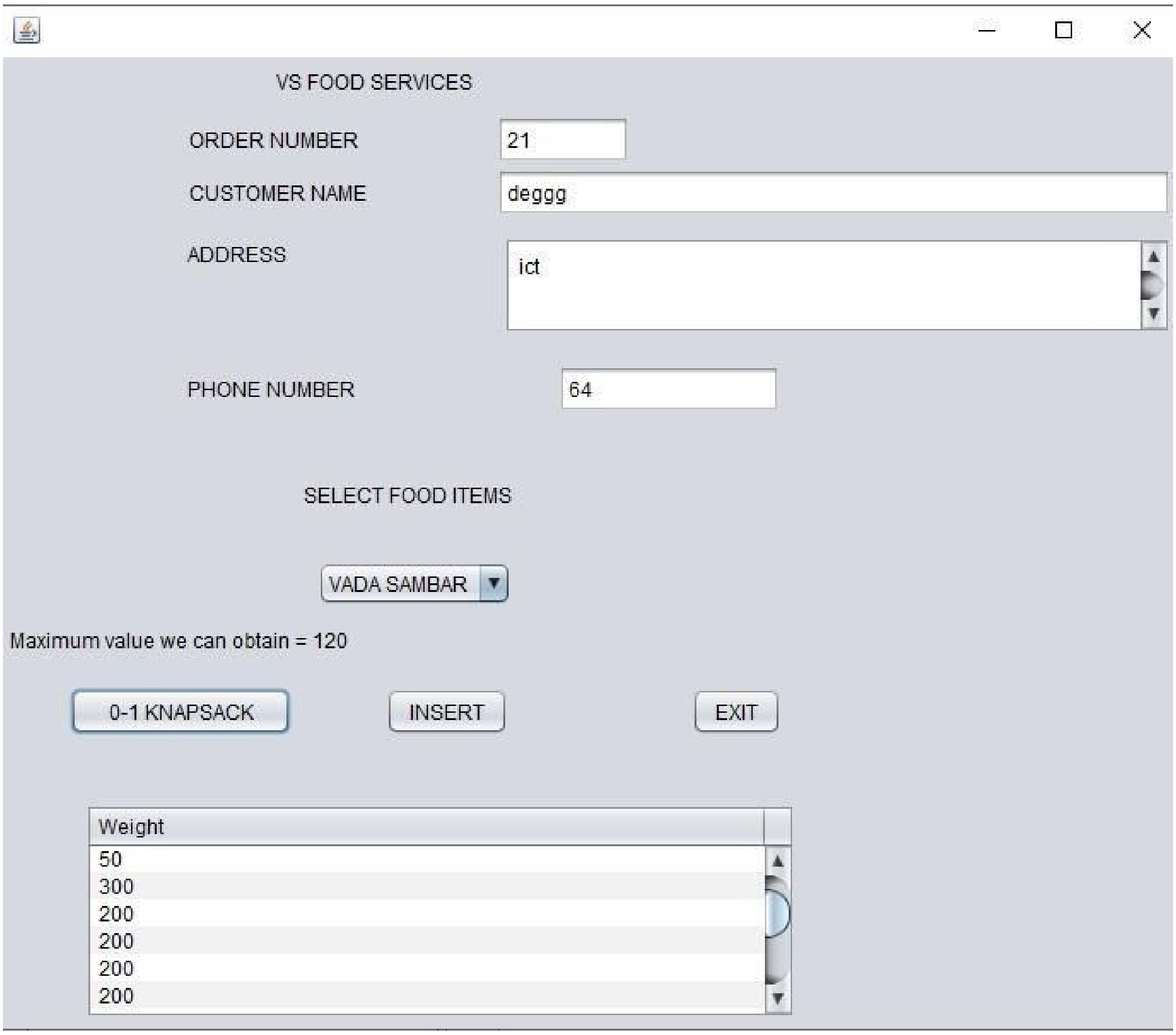
PHONE NUMBER 64

SELECT FOOD ITEMS VADA SAMBAR

Maximum value we can obtain = 170

Weight
110
350
350
300
0
300

GUI FOR 0-1 KNAPSACK-



VS FOOD SERVICES

ORDER NUMBER: 21

CUSTOMER NAME: deggg

ADDRESS: ict

PHONE NUMBER: 64

SELECT FOOD ITEMS: VADA SAMBAR

Maximum value we can obtain = 120

Weight
50
300
200
200
200
200

CODE FOR FRACTIONAL KNAPSACK-

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.Statement;
import java.util.Arrays;
import java.util.Comparator;
import java.util.logging.Level;
import java.util.logging.Logger;
import javax.swing.JOptionPane;
import javax.swing.table.DefaultTableModel;

/**
 *
 * @author simran gangwani
 */
public class dbms_project extends javax.swing.JFrame {
   private Object jTable1;
```

```
/**
 * Creates new form dbms_project
 */
public dbms_project() {
    initComponents();
}

/**
 * This method is called from within the constructor to initialize the form.
 * WARNING: Do NOT modify this code. The content of this method is always
 * regenerated by the Form Editor.
 */
@SuppressWarnings("unchecked")
// <editor-fold defaultstate="collapsed" desc="Generated Code">
private void initComponents() {

    jLabel3 = new javax.swing.JLabel();
    jButton2 = new javax.swing.JButton();
    jScrollPane2 = new javax.swing.JScrollPane();
    jTable2 = new javax.swing.JTable();
    jLabel7 = new javax.swing.JLabel();
```

```
jPanel1 = new javax.swing.JPanel();
jLabel2 = new javax.swing.JLabel();
jLabel4 = new javax.swing.JLabel();
jLabel5 = new javax.swing.JLabel();
jLabel6 = new javax.swing.JLabel();
jComboBox1 = new javax.swing.JComboBox();
jButton1 = new javax.swing.JButton();
jTextField1 = new javax.swing.JTextField();
jTextField2 = new javax.swing.JTextField();
jTextField3 = new javax.swing.JTextField();
jScrollPane1 = new javax.swing.JScrollPane();
jTextArea1 = new javax.swing.JTextArea();
jLabel1 = new javax.swing.JLabel();
jButton3 = new javax.swing.JButton();
jButton4 = new javax.swing.JButton();
jScrollPane3 = new javax.swing.JScrollPane();
jTable3 = new javax.swing.JTable();
jLabel8 = new javax.swing.JLabel();

jLabel3.setText("jLabel3");

jButton2.setText("jButton2");
```

```
        jTable2.setModel(new javax.swing.table.DefaultTableModel(
            new Object [][] {
                {null, null, null, null},
                {null, null, null, null},
                {null, null, null, null},
                {null, null, null, null}
            },
            new String [] {
                "Title 1", "Title 2", "Title 3", "Title 4"
            }
        ));
        jScrollPane2.setViewportView(jTable2);


setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);


        jLabel7.setText("VS FOOD SERVICES");


                                        javax.swing.GroupLayout    jPanel1Layout    =    new
javax.swing.GroupLayout(jPanel1);
        jPanel1.setLayout(jPanel1Layout);
        jPanel1Layout.setHorizontalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADI
NG)
```

```
      .addGap(0, 177, Short.MAX_VALUE)
    );
    jPanel1Layout.setVerticalGroup(

jPanel1Layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADI
NG)
      .addGap(0, 0, Short.MAX_VALUE)
    );

    jLabel2.setText("CUSTOMER NAME");

    jLabel4.setText("ADDRESS");

    jLabel5.setText("PHONE NUMBER");

    jLabel6.setText("SELECT FOOD ITEMS");

        jComboBox1.setModel(new  javax.swing.DefaultComboBoxModel(new
String[] { "DOSA", "IDLI SAMBAR", "VADA SAMBAR", "PIZZA", "BURGER" }));

    jButton1.setText("INSERT");
    jButton1.addActionListener(new java.awt.event.ActionListener() {
      public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton1ActionPerformed(evt);
      }
    });

    jTextArea1.setColumns(20);
    jTextArea1.setRows(5);
    jScrollPane1.setViewportView(jTextArea1);

    jLabel1.setText("ORDER NUMBER");

    jButton3.setText("EXIT");
    jButton3.addActionListener(new java.awt.event.ActionListener() {
      public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton3ActionPerformed(evt);
      }
    });

    jButton4.setText("FRACTIONAL KNAPSACK");
    jButton4.addActionListener(new java.awt.event.ActionListener() {
      public void actionPerformed(java.awt.event.ActionEvent evt) {
        jButton4ActionPerformed(evt);
      }
    });
```

```
        jTable3.setModel(new javax.swing.table.DefaultTableModel(
          new Object [][] {
            {null},
            {null},
            {null},
            {null}
          },
          new String [] {
            "Weight"
          }
        ));
         jTable3.addComponentListener(new java.awt.event.ComponentAdapter()
{
          public void componentHidden(java.awt.event.ComponentEvent evt) {
            jTable3ComponentHidden(evt);
          }
        });
        jScrollPane3.setViewportView(jTable3);

                                        javax.swing.GroupLayout     layout     =     new
javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(
layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
      .addGroup(layout.createSequentialGroup()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
          .addGroup(layout.createSequentialGroup()
            .addGap(132, 132, 132)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TR
AILING)
                    .addGroup(javax.swing.GroupLayout.Alignment.LEADING,
layout.createSequentialGroup()
                 .addGap(1, 1, 1)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                   .addComponent(jLabel1)
                                                    .addComponent(jLabel2,
javax.swing.GroupLayout.PREFERRED_SIZE,                              121,
javax.swing.GroupLayout.PREFERRED_SIZE))
                 .addGap(59, 59, 59)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                                                .addComponent(jTextField1,
javax.swing.GroupLayout.PREFERRED_SIZE,                               78,
javax.swing.GroupLayout.PREFERRED_SIZE)
```

```
                                                .addComponent(jTextField2,
javax.swing.GroupLayout.PREFERRED_SIZE,                           458,
javax.swing.GroupLayout.PREFERRED_SIZE)))

                         .addGroup(javax.swing.GroupLayout.Alignment.LEADING,
layout.createSequentialGroup()

                     .addGap(65, 65, 65)

                                                   .addComponent(jPanel1,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))

                         .addGroup(javax.swing.GroupLayout.Alignment.LEADING,
layout.createSequentialGroup()


.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)

                       .addComponent(jLabel4)

                       .addComponent(jLabel5))


.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)

                       .addGroup(layout.createSequentialGroup()

                         .addGap(87, 87, 87)

                                              .addComponent(jScrollPane1,
javax.swing.GroupLayout.PREFERRED_SIZE,                           391,
javax.swing.GroupLayout.PREFERRED_SIZE))

                       .addGroup(layout.createSequentialGroup()

                         .addGap(119, 119, 119)
```

```
                                                               .addComponent(jTextField3,
javax.swing.GroupLayout.PREFERRED_SIZE,                                              130,
javax.swing.GroupLayout.PREFERRED_SIZE))))

                              .addGroup(javax.swing.GroupLayout.Alignment.LEADING,
layout.createSequentialGroup()

                          .addGap(68, 68, 68)


.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TR
AILING)

                            .addComponent(jLabel6)

                                                             .addComponent(jComboBox1,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)))))

            .addGroup(layout.createSequentialGroup()

              .addGap(184, 184, 184)

              .addComponent(jLabel7))

            .addGroup(layout.createSequentialGroup()

              .addGap(63, 63, 63)

              .addComponent(jButton4)

              .addGap(82, 82, 82)

              .addComponent(jButton1)

              .addGap(107, 107, 107)

              .addComponent(jButton3))

            .addGroup(layout.createSequentialGroup()

              .addGap(72, 72, 72)
```

```
                                                  .addComponent(jScrollPane3,
javax.swing.GroupLayout.PREFERRED_SIZE,                                  416,
javax.swing.GroupLayout.PREFERRED_SIZE))

          .addGroup(layout.createSequentialGroup()

            .addGap(28, 28, 28)

                                                      .addComponent(jLabel8,
javax.swing.GroupLayout.PREFERRED_SIZE,                                  208,
javax.swing.GroupLayout.PREFERRED_SIZE)))

        .addContainerGap(49, Short.MAX_VALUE))

    );

    layout.setVerticalGroup(


layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)

      .addGroup(layout.createSequentialGroup()

        .addContainerGap()

        .addComponent(jLabel7)


.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)


.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)

                                                      .addComponent(jLabel1,
javax.swing.GroupLayout.PREFERRED_SIZE,                                   27,
javax.swing.GroupLayout.PREFERRED_SIZE)

                                                   .addComponent(jTextField1,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
```

```
            .addGap(3, 3, 3)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
                                                                  .addComponent(jLabel2,
javax.swing.GroupLayout.PREFERRED_SIZE,                                              24,
javax.swing.GroupLayout.PREFERRED_SIZE)
                                                              .addComponent(jTextField2,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)
             .addComponent(jPanel1, javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.RELATED)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                                                                  .addComponent(jLabel4,
javax.swing.GroupLayout.PREFERRED_SIZE,                                              21,
javax.swing.GroupLayout.PREFERRED_SIZE)
              .addGroup(layout.createSequentialGroup()
                                                             .addComponent(jScrollPane1,
javax.swing.GroupLayout.PREFERRED_SIZE,                                              57,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(18, 18, 18)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
                                                            .addComponent(jTextField3,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                   .addComponent(jLabel5))))
          .addGap(39, 39, 39)
            .addComponent(jLabel6, javax.swing.GroupLayout.PREFERRED_SIZE,
19, javax.swing.GroupLayout.PREFERRED_SIZE)
          .addGap(29, 29, 29)
                                                          .addComponent(jComboBox1,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
          .addGap(5, 5, 5)
            .addComponent(jLabel8, javax.swing.GroupLayout.PREFERRED_SIZE,
31, javax.swing.GroupLayout.PREFERRED_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
             .addComponent(jButton1)
             .addComponent(jButton4)
             .addComponent(jButton3))
          .addGap(40, 40, 40)
```

```
                                                  .addComponent(jScrollPane3,
javax.swing.GroupLayout.PREFERRED_SIZE,                                 126,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addContainerGap(294, Short.MAX_VALUE))
        );


        pack();
    }// </editor-fold>


    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
int ind=0, price=0,wt=0;
 int order;
 String name,add,phn;
 order=Integer.parseInt(jTextField1.getText());
 name=jTextField2.getText();
 add=jTextArea1.getText();
 phn=jTextField3.getText();
String fl="" ;
ind= jComboBox1.getSelectedIndex();
switch(ind)
{case 1 : fl= "DOSA" ; price=450; wt=300; break;
case 2 : fl= "IDLI SAMBAR" ; price=300 ;wt=200;
break;
```

```
case 3 : fl= "VADA SAMBAR" ; price=350 ;wt=250;
break;
case 4 : fl= "PIZZA" ; price=500 ;wt=400; break;
case 5 : fl="BURGER" ; price=450 ; wt=350;break;
default : JOptionPane.showMessageDialog(this,"Select food item first");
}
try
{
Class.forName("java.sql.DriverManager");
Connection
conn=(Connection)DriverManager.getConnection("jdbc:mysql://localhost:3306
/project","root","pass123");
Statement stmt=(Statement)conn.createStatement();
String sql="insert into
customer(orderid,custname,address,phone)values('"+order+"','"+name+"','"+a
dd+"','"+phn+"');";
String sql1="insert into
food(orderno,name,weight,price)values('"+order+"','"+fl+"','"+wt+"','"+price+"'
);";
System.out.println(sql);
stmt.executeUpdate(sql);
System.out.println(sql1);
   int executeUpdate = stmt.executeUpdate(sql1);
stmt.close();
conn.close();
```

```
}
catch(Exception e)
{
 System.out.println(e.getMessage());
}

    }

    private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
        // TODO add your handling code here:
        System.exit(0);
    }

    private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) {
        int order;
        DefaultTableModel tm;
        tm = (DefaultTableModel)
        jTable3.getModel();
        ResultSet rs1=null,rs2=null;
        int a = 0;
        order=Integer.parseInt(jTextField1.getText());
        try

        {

        Class.forName("java.sql.DriverManager");

                                                        Connection
conn=(Connection)DriverManager.getConnection("jdbc:mysql://localhost:3306
/project","root","pass123");

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

        Statement stmt1=(Statement)conn.createStatement();

        String sql1="select weight from food";

        String sql2="select price from food;";

        rs1 =stmt.executeQuery(sql1);

        rs2 =stmt1.executeQuery(sql2);

        rs1.first();

        do

        {

         tm.addRow(new Object[] {rs1.getInt("weight")});

        }while (rs1.next());

        rs2.first();

        do

        {

         tm.addRow(new Object[] {rs2.getInt("price")});

        }while (rs2.next());

        conn.close();

        stmt.close();
```

```
}
catch(Exception e)
{
 System.out.println(e.getMessage());
}
jLabel8.setText("Maximum value we can obtain = " +a);
class FractionalKnapSack
{

public void main(String[] args)
{
  int order=Integer.parseInt(jTextField1.getText());



   int[] rs1 = null;
int[]wt = rs1;
   int[] rs2 = null;
int[] val = rs2;
int capacity = 4;
double maxValue = getMaxValue(wt, val,capacity);

try {
   wait(3);
```

```
    } catch (InterruptedException ex) {
        Logger.getLogger(dbms_project.class.getName()).log(Level.SEVERE, null,
ex);
    }
    jLabel8.setText("Maximum value we can obtain = " +maxValue);


    }



    private double getMaxValue(int[] wt,int[] val, int capacity)
    {
    ItemValue[] iVal = new ItemValue[wt.length];

    for(int i = 0; i < wt.length; i++)
    {
    iVal[i] = new ItemValue(wt[i], val[i], i);
    }



    Arrays.sort(iVal, new Comparator<ItemValue>()
    {
    @Override
    public int compare(ItemValue o1, ItemValue o2)
    {
```

```
return o2.cost.compareTo(o1.cost) ;
}
});


double totalValue = 0d;

for(ItemValue i: iVal)
{

int curWt = (int) i.wt;
int curVal = (int) i.val;

if (capacity - curWt >= 0)
{

capacity = capacity-curWt;
totalValue += curVal;

}
else
{
```

```
double fraction =((double)capacity/(double)curWt);

totalValue += (curVal*fraction);

capacity = (int)(capacity -(curWt*fraction));

break;

}



}


return totalValue;

}



class ItemValue

{

Double cost;

double wt, val, ind;



public ItemValue(int wt, int val, int ind)

{

this.wt = wt;

this.val = val;
```

```
        this.ind = ind;
        cost = new Double(val/wt );
        }
        }
       }       // TODO add your handling code here:
    }

    private void jTable3ComponentHidden(java.awt.event.ComponentEvent evt) 
{
        // TODO add your handling code here:
    }

    /**
     * @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(dbms_project.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (InstantiationException ex) {
            java.util.logging.Logger.getLogger(dbms_project.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (IllegalAccessException ex) {
            java.util.logging.Logger.getLogger(dbms_project.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (javax.swing.UnsupportedLookAndFeelException ex) {
            java.util.logging.Logger.getLogger(dbms_project.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        }
        //</editor-fold>
```

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

// Variables declaration - do not modify
private javax.swing.JButton jButton1;
private javax.swing.JButton jButton2;
private javax.swing.JButton jButton3;
private javax.swing.JButton jButton4;
private javax.swing.JComboBox jComboBox1;
private javax.swing.JLabel jLabel1;
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.JPanel jPanel1;
```

```
    private javax.swing.JScrollPane jScrollPane1;
    private javax.swing.JScrollPane jScrollPane2;
    private javax.swing.JScrollPane jScrollPane3;
    private javax.swing.JTable jTable2;
    private javax.swing.JTable jTable3;
    private javax.swing.JTextArea jTextArea1;
    private javax.swing.JTextField jTextField1;
    private javax.swing.JTextField jTextField2;
    private javax.swing.JTextField jTextField3;
    // End of variables declaration
}
```

CODE FOR 0-1 KNAPSACK-

```
/*
 * To change this license header, choose License Headers in Project Properties.
 * To change this template file, choose Tools | Templates
 * and open the template in the editor.
 */
/**
 *
 * @author simran gangwani
 */
import java.util.Arrays;
import java.util.Comparator;
import javax.swing.JOptionPane;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.Statement;
import javax.swing.table.DefaultTableModel;

public class knapsack extends javax.swing.JFrame {

    /**
     * Creates new form knapsack
     */
    public knapsack() {
        initComponents();
    }

    /**
     * This method is called from within the constructor to initialize the form.
     * WARNING: Do NOT modify this code. The content of this method is always
     * regenerated by the Form Editor.
     */
    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void initComponents() {

       jTextField3 = new javax.swing.JTextField();
       jLabel1 = new javax.swing.JLabel();
       jLabel2 = new javax.swing.JLabel();
       jButton4 = new javax.swing.JButton();
       jScrollPane1 = new javax.swing.JScrollPane();
       jTextArea1 = new javax.swing.JTextArea();
       jLabel4 = new javax.swing.JLabel();
       jLabel5 = new javax.swing.JLabel();
       jButton3 = new javax.swing.JButton();
       jLabel6 = new javax.swing.JLabel();
       jComboBox1 = new javax.swing.JComboBox();
       jButton1 = new javax.swing.JButton();
       jScrollPane3 = new javax.swing.JScrollPane();
       jTable1 = new javax.swing.JTable();
       jTextField1 = new javax.swing.JTextField();
       jLabel8 = new javax.swing.JLabel();
       jLabel7 = new javax.swing.JLabel();
```

```
        jTextField2 = new javax.swing.JTextField();


    setDefaultCloseOperation(javax.swing.WindowConstants.EXIT_ON_CLOSE);

        jLabel1.setText("ORDER NUMBER");

        jLabel2.setText("CUSTOMER NAME");

        jButton4.setText("0-1 KNAPSACK");
        jButton4.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton4ActionPerformed(evt);
            }
        });

        jTextArea1.setColumns(20);
        jTextArea1.setRows(5);
        jScrollPane1.setViewportView(jTextArea1);

        jLabel4.setText("ADDRESS");

        jLabel5.setText("PHONE NUMBER");
        jButton3.setText("EXIT");
        jButton3.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton3ActionPerformed(evt);
            }
        });

        jLabel6.setText("SELECT FOOD ITEMS");

                jComboBox1.setModel(new  javax.swing.DefaultComboBoxModel(new
String[] { "DOSA", "IDLI SAMBAR", "VADA SAMBAR", "PIZZA", "BURGER" }));

        jButton1.setText("INSERT");
        jButton1.addActionListener(new java.awt.event.ActionListener() {
            public void actionPerformed(java.awt.event.ActionEvent evt) {
                jButton1ActionPerformed(evt);
            }
        });

        jTable1.setModel(new javax.swing.table.DefaultTableModel(
            new Object [][] {
                {null},
                {null},
                {null},
            {null}
          },
          new String [] {
            "Weight"
          }
        ));
         jTable1.addComponentListener(new java.awt.event.ComponentAdapter()
{
          public void componentHidden(java.awt.event.ComponentEvent evt) {
            jTable1ComponentHidden(evt);
          }
        });
        jScrollPane3.setViewportView(jTable1);

        jLabel7.setText("VS FOOD SERVICES");

                              javax.swing.GroupLayout     layout     =     new
javax.swing.GroupLayout(getContentPane());
        getContentPane().setLayout(layout);
        layout.setHorizontalGroup(

layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
          .addGap(0, 680, Short.MAX_VALUE)
```

```
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                    .addGroup(layout.createSequentialGroup()
                        .addGap(104, 104, 104)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TRAILING)
                            .addGroup(layout.createSequentialGroup()
                                .addGap(1, 1, 1)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                                    .addComponent(jLabel1)
                                    .addComponent(jLabel2, javax.swing.GroupLayout.PREFERRED_SIZE, 121, javax.swing.GroupLayout.PREFERRED_SIZE))
                                .addGap(59, 59, 59)
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
                                                              .addComponent(jTextField1,
javax.swing.GroupLayout.PREFERRED_SIZE,                                                   78,
javax.swing.GroupLayout.PREFERRED_SIZE)
                              .addComponent(jTextField2)))
                             .addGroup(javax.swing.GroupLayout.Alignment.LEADING,
layout.createSequentialGroup()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TR
AILING)

.addGroup(javax.swing.GroupLayout.Alignment.LEADING,
layout.createSequentialGroup()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                                    .addComponent(jLabel4)
                                    .addComponent(jLabel5))

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                                    .addGroup(layout.createSequentialGroup()
                                      .addGap(87, 87, 87)
                                                             .addComponent(jScrollPane1,
javax.swing.GroupLayout.PREFERRED_SIZE,                                                  391,
javax.swing.GroupLayout.PREFERRED_SIZE))
                                    .addGroup(layout.createSequentialGroup()
                                      .addGap(119, 119, 119)
```

```
                                                  .addComponent(jTextField3,
javax.swing.GroupLayout.PREFERRED_SIZE,                                  130,
javax.swing.GroupLayout.PREFERRED_SIZE))))

.addGroup(javax.swing.GroupLayout.Alignment.LEADING,
layout.createSequentialGroup()
                    .addGap(68, 68, 68)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.TR
AILING)
                      .addComponent(jLabel6)
                                                 .addComponent(jComboBox1,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))))
                .addGap(0, 0, Short.MAX_VALUE))))
           .addGroup(layout.createSequentialGroup()

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
              .addGroup(layout.createSequentialGroup()
                .addGap(156, 156, 156)
                .addComponent(jLabel7))
              .addGroup(layout.createSequentialGroup()
                .addGap(35, 35, 35)
                                                    .addComponent(jButton4,
javax.swing.GroupLayout.PREFERRED_SIZE,                                  130,
javax.swing.GroupLayout.PREFERRED_SIZE)
```

```
                        .addGap(55, 55, 55)
                        .addComponent(jButton1)
                        .addGap(107, 107, 107)
                        .addComponent(jButton3))
                    .addGroup(layout.createSequentialGroup()
                        .addGap(44, 44, 44)
                                                    .addComponent(jScrollPane3,
javax.swing.GroupLayout.PREFERRED_SIZE,                                   416,
javax.swing.GroupLayout.PREFERRED_SIZE))
                                                        .addComponent(jLabel8,
javax.swing.GroupLayout.PREFERRED_SIZE,                                   208,
javax.swing.GroupLayout.PREFERRED_SIZE))
                    .addGap(200, 200, 200)))
                .addContainerGap()))
    );
    layout.setVerticalGroup(

layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LEADING)
        .addGap(0, 551, Short.MAX_VALUE)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
            .addGroup(layout.createSequentialGroup()
                .addContainerGap()
                .addComponent(jLabel7)
```

```
.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
                                                    .addComponent(jLabel1,
javax.swing.GroupLayout.PREFERRED_SIZE,                                27,
javax.swing.GroupLayout.PREFERRED_SIZE)
                                                 .addComponent(jTextField1,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(3, 3, 3)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
                                                    .addComponent(jLabel2,
javax.swing.GroupLayout.PREFERRED_SIZE,                                24,
javax.swing.GroupLayout.PREFERRED_SIZE)
                                                 .addComponent(jTextField2,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE))
                .addGap(12, 12, 12)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.LE
ADING)
                                                    .addComponent(jLabel4,
javax.swing.GroupLayout.PREFERRED_SIZE,                                21,
javax.swing.GroupLayout.PREFERRED_SIZE)
```

```
                    .addGroup(layout.createSequentialGroup()
                                                                                        .addComponent(jScrollPane1,
javax.swing.GroupLayout.PREFERRED_SIZE,                                                                          57,
javax.swing.GroupLayout.PREFERRED_SIZE)
                        .addGap(18, 18, 18)

.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
                                                                                          .addComponent(jTextField3,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                            .addComponent(jLabel5))))
                .addGap(39, 39, 39)
                                                                                               .addComponent(jLabel6,
javax.swing.GroupLayout.PREFERRED_SIZE,                                                                          19,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(29, 29, 29)
                                                                                        .addComponent(jComboBox1,
javax.swing.GroupLayout.PREFERRED_SIZE,
javax.swing.GroupLayout.DEFAULT_SIZE,
javax.swing.GroupLayout.PREFERRED_SIZE)
                .addGap(5, 5, 5)
                                                                                               .addComponent(jLabel8,
javax.swing.GroupLayout.PREFERRED_SIZE,                                                                          31,
javax.swing.GroupLayout.PREFERRED_SIZE)

.addPreferredGap(javax.swing.LayoutStyle.ComponentPlacement.UNRELATED)
```

```
.addGroup(layout.createParallelGroup(javax.swing.GroupLayout.Alignment.BA
SELINE)
                    .addComponent(jButton1)
                    .addComponent(jButton4)
                    .addComponent(jButton3))
                .addGap(40, 40, 40)
                                                                    .addComponent(jScrollPane3,
javax.swing.GroupLayout.PREFERRED_SIZE,                                          126,
javax.swing.GroupLayout.PREFERRED_SIZE)
                             .addContainerGap(javax.swing.GroupLayout.DEFAULT_SIZE,
Short.MAX_VALUE)))
        );

        pack();
    }// </editor-fold>

    private void jButton4ActionPerformed(java.awt.event.ActionEvent evt) {
        int order;
        DefaultTableModel tm = (DefaultTableModel)
jTable1.getModel();
ResultSet rs1=null,rs2=null;
order=Integer.parseInt(jTextField1.getText());
        int a = 0;
```

```
{
Class.forName("java.sql.DriverManager");
Connection
conn=(Connection)DriverManager.getConnection("jdbc:mysql://localhost:3306
/project","root","pass123");
Statement stmt=(Statement)conn.createStatement();
Statement stmt1=(Statement)conn.createStatement();
String sql1="select weight from food;";
String sql2="select price from food;";
rs1 =stmt.executeQuery(sql1);
rs2 =stmt1.executeQuery(sql2);
rs1.first();
do
{
 tm.addRow(new Object[] {rs1.getInt("weight")});
}while (rs1.next());
rs2.first();
do
{
 tm.addRow(new Object[] {rs2.getInt("price")});
}while (rs2.next());
conn.close();
stmt.close();
}
```

```
catch(Exception e)

{

 System.out.println(e.getMessage());

}


jLabel8.setText("Maximum value we can obtain = " +a);

class Knapsack

{




  int max(int a, int b) { return (a > b)? a : b; }




 int knapSack(int W, int wt[], int val[], int n)

 {


 if (n == 0 || W == 0)

 return 0;


 if (wt[n-1] > W)

 return knapSack(W, wt, val, n-1);
 else return max( val[n-1] + knapSack(W-wt[n-1],
wt, val, n-1),
 knapSack(W, wt, val, n-1)
 );
 }

 public void main(String args[])
 {
     int[] rs1 = null;
       int[]wt = rs1;
           int[] rs2 = null;
       int[] val = rs2;
 int W = 1000;
 int n = val.length;
 jLabel8.setText("Maximum value we can obtain = " +knapSack(W, wt, val, n));
 }
}

                // TODO add your handling code here:
    }

    private void jButton3ActionPerformed(java.awt.event.ActionEvent evt) {
```

```
    // TODO add your handling code here:
    System.exit(0);
}

private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
    // TODO add your handling code here:
    int ind=0, price=0,wt=0;
    int order;
    String name,add,phn;
    order=Integer.parseInt(jTextField1.getText());
    name=jTextField2.getText();
    add=jTextArea1.getText();
    phn=jTextField3.getText();
    String fl="" ;
    ind= jComboBox1.getSelectedIndex();
    switch(ind)
    {case 1 : fl= "DOSA" ; price=450; wt=300; break;
        case 2 : fl= "IDLI SAMBAR" ; price=300 ;wt=200;
        break;
        case 3 : fl= "VADA SAMBAR" ; price=350 ;wt=250;
        break;
        case 4 : fl= "PIZZA" ; price=500 ;wt=400; break;
        case 5 : fl="BURGER" ; price=450 ; wt=350;break;
```

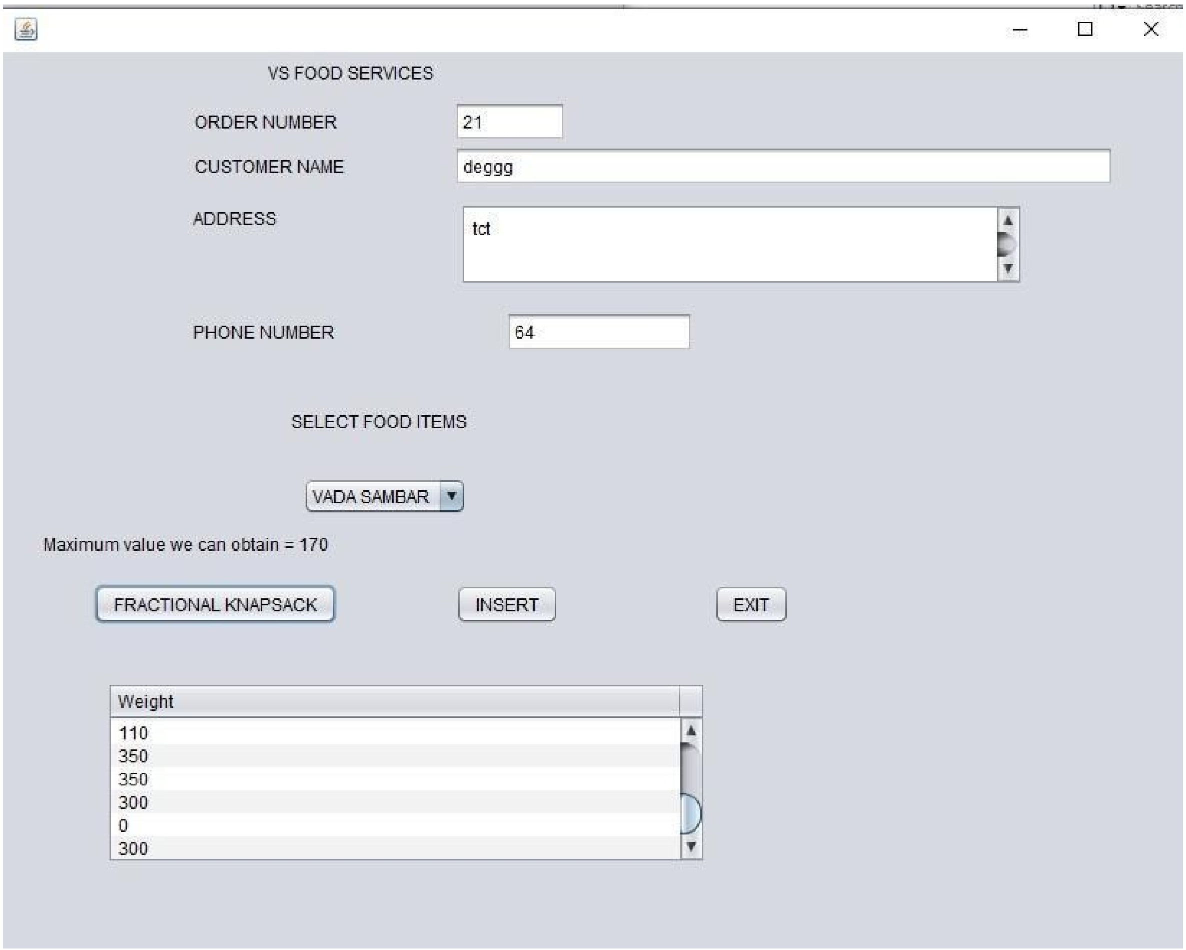
```
          default : JOptionPane.showMessageDialog(this,"Select food item first");
        }
        try
        {
          Class.forName("java.sql.DriverManager");
          Connection conn=(Connection)DriverManager.getConnection("jdbc:mysql://localhost:3306/project","root","pass123");
          Statement stmt=(Statement)conn.createStatement();
          String sql="insert into customer(orderid,custname,address,phone)values('"+order+"','"+name+"','"+add+"','"+phn+"');";
          String sql1="insert into food(orderno,name,weight,price)values('"+order+"','"+fl+"','"+wt+"','"+price+"');";
          System.out.println(sql);
          stmt.executeUpdate(sql);
          System.out.println(sql1);
          int executeUpdate = stmt.executeUpdate(sql1);
          stmt.close();
          conn.close();
        }
        catch(Exception e)
        {
          System.out.println(e.getMessage());
        }
    }

    private void jTable1ComponentHidden(java.awt.event.ComponentEvent evt)
{
        // TODO add your handling code here:
    }

    /**
     * @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(knapsack.class.getName()).log(java.util.logging.Level.SEVERE, null, ex);
        } catch (InstantiationException ex) {

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

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

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

        /* Create and display the form */
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new knapsack().setVisible(true);
```

```
    }
  });
}

// Variables declaration - do not modify
private javax.swing.JButton jButton1;
private javax.swing.JButton jButton3;
private javax.swing.JButton jButton4;
private javax.swing.JComboBox jComboBox1;
private javax.swing.JLabel jLabel1;
private javax.swing.JLabel jLabel2;
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.JScrollPane jScrollPane1;
private javax.swing.JScrollPane jScrollPane3;
private javax.swing.JTable jTable1;
private javax.swing.JTextArea jTextArea1;
private javax.swing.JTextField jTextField1;
private javax.swing.JTextField jTextField2;
private javax.swing.JTextField jTextField3;
```

```
    // End of variables declaration
}
```

OUTPUT-

FOR FRACTIONAL KNAPSACK-



VS FOOD SERVICES

ORDER NUMBER 21

CUSTOMER NAME deggg

ADDRESS tct

PHONE NUMBER 64

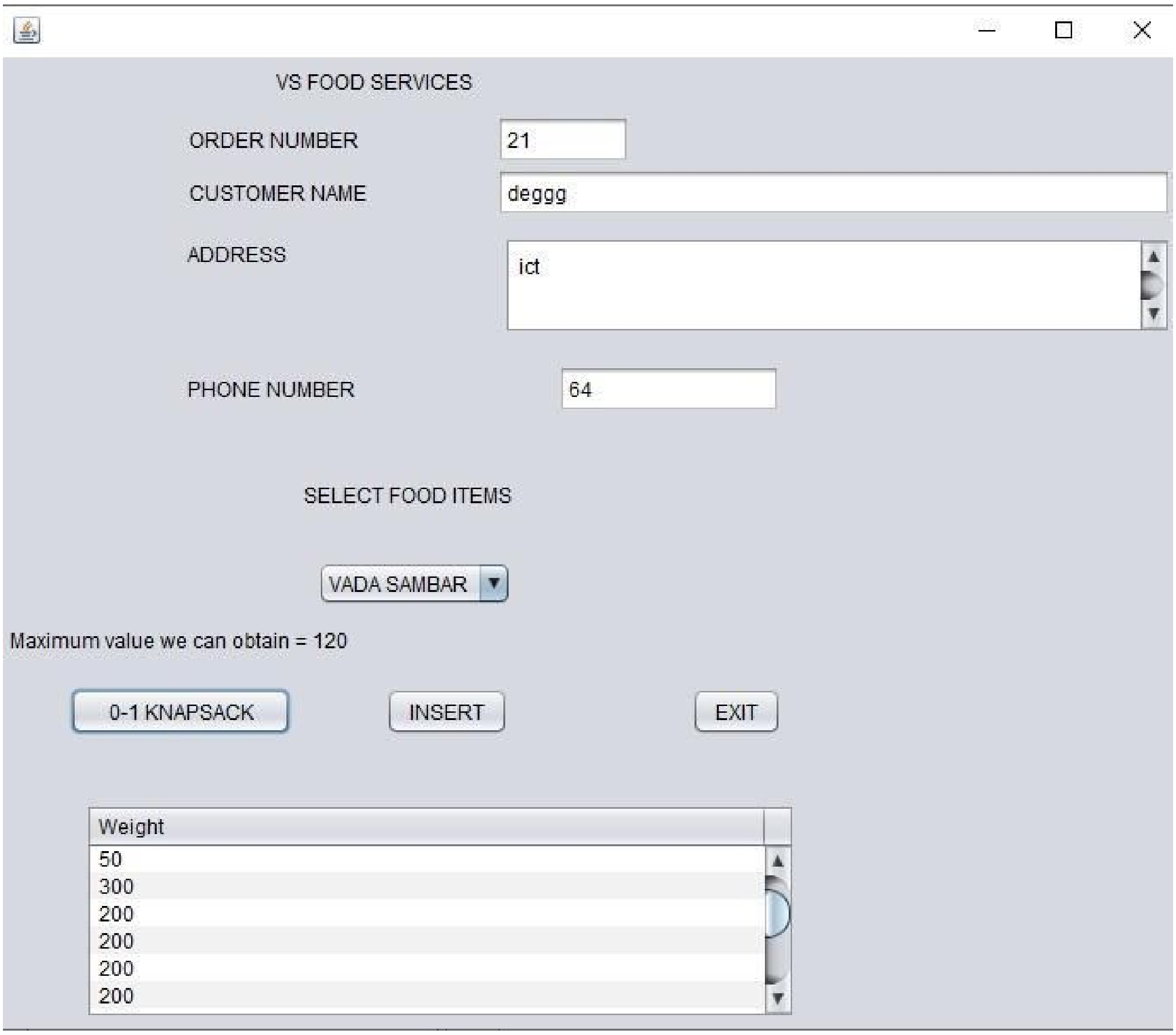
SELECT FOOD ITEMS

VADA SAMBAR

Maximum value we can obtain = 170

Weight
110
350
350
300
0
300

FOR 0-1 KNAPSACK-



VS FOOD SERVICES

ORDER NUMBER: 21

CUSTOMER NAME: deggg

ADDRESS: ict

PHONE NUMBER: 64

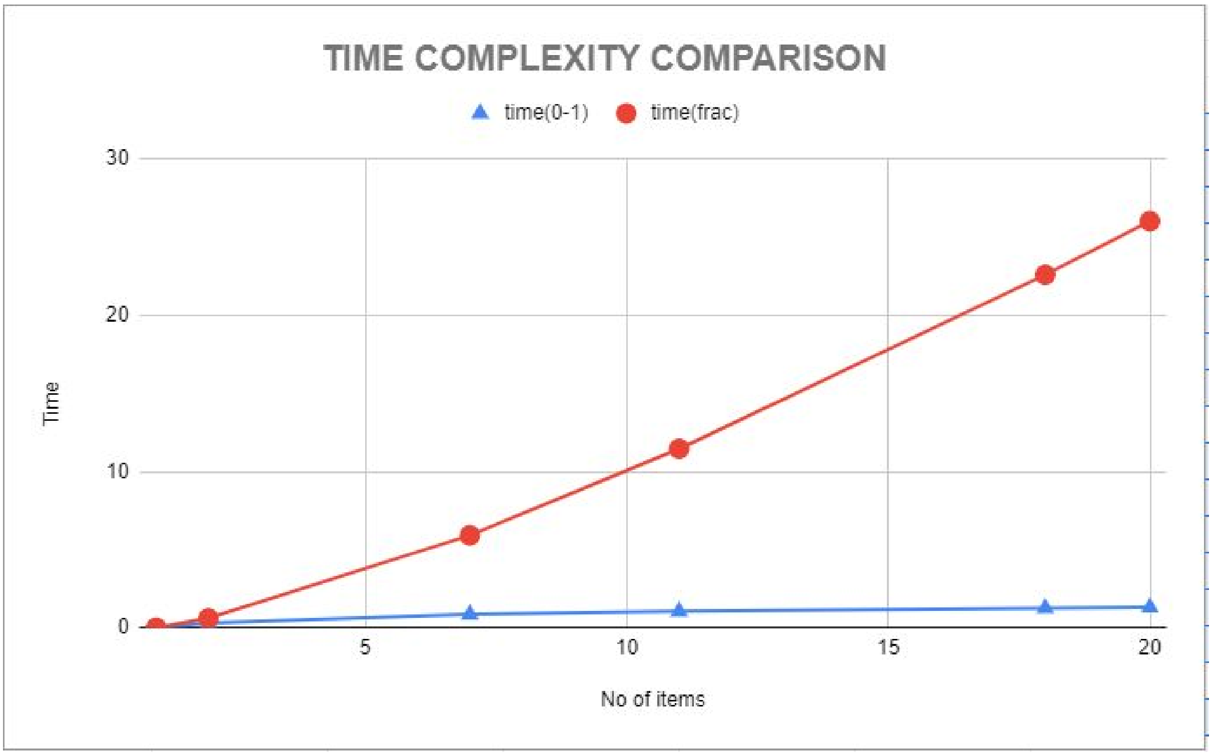
SELECT FOOD ITEMS: VADA SAMBAR

Maximum value we can obtain = 120

Weight
50
300
200
200
200
200

TIME COMPLEXITY COMPARISON BETWEEN FRACTIONAL(O(nlogn)) AND 0-1 KNAPSACK(O(n))-

No. of items(x)	Time for 0-1 knapsack(s)	Time for fractional knapsack(s)
1	0	0
2	0.31	0.602
7	0.84	5.92
11	1.041	11.46
18	1.255	22.6
20	1.301	26.02



Scale-

X axis – No of items

Y axis – Time

CONCLUSION

Fractional knapsack accommodate more value items than 0-1 knapsack because it allows to break items but 0-1 knapsack does not, therefore, fractional knapsack enables companies to deliver more items of more value in same capacity than 0-1 knapsack, but 0-1 knapsack provides result faster as its time complexity is O(n) as compared to O(nlogn) of fractional knapsack.

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