DAA DIGIBOOK-SQL CONNECTIVITY USING JDBC

A

Report

Submitted in partial fulfilment of the
Requirements for the award of the Degree of
BACHELOR OF TECHNOLOGY
IN

INFORMATION TECHNOLOGY

By

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2021-2022

BONAFIDE CERTIFICATE

This to Certify that the project report titled **“DAA DIGIBOOK”** project work of Mr.B.SURESH KUMAR bearing Roll.no:1602-20-737-051 who carried out this project under my supervision in the IV semester for the academic year 2021-2022.

Signature *Signature* *external examiner* *internal examiner*

ABSTRACT:

This is project “DAA DIGIBOOK“. Product quality has entered the consciousness of organizations with a vengeance. It has become crystal clear that high-quality products have a distinct advantage in the market place, that market share can be gained or lost over the quality issue. Therefore, quality is a competitive priority. Quality is the only factor that ensures an organization's survival and growth. Quality focuses on meeting consumer need, meeting the competition, improving continuously and extending these concerns to all phases of business. Today, it has been well understood by managers that the real price of poor quality is lost consumers and ultimately, the death of an organization. Therefore, to be successful in today's business environment, organizations must pay attention to quality. Hence, a systematic procedure has to be evolved and followed and different concepts of quality management have to be understood clearly for designing and executing the quality management programme effectively and every information regarding the product should be crystal clear and this project gives us the quality and information about the product.so the product can be redesigned again for further improvement and development.

Introduction: REQUIREMENT ANALYSIS

List of tables:

- Loginform
- Register

List of attributes with their domain types:

Loginform:

Username : Username -Varchar2(20)

Password : Password-varchar(20)

Register :

Username : Username-Varchar2(20)

Gender : Gender- Varchar(8)

Contact_no : Contact_no – number(10)

Password : Password varchar2(20)

Address : Address Varchar2(20)

THROUGH THE PROJECT:

This project helps to store data in a efficient way and it can be achieved through various sql commands and we can also store this for any future use and also we can save our data in a many different areas so we cannot lost all the data at once. The quality and product details are must in now a days because quality matters every where, these project stores details and feedback and testing details in database so that whenever it is necessary to know how and when a product can be used.

ARCHITECTURE AND TECHNOLOGY USED:

SOFTWARE USED:

Java Eclipse, Oracle 11g Database, Java SE version 8, SQL Plus and Apache Netbeans.

Java SWING:

Swing is a GUI widget toolkit for Java. It is part of Oracle's Java Foundation Classes (JFC) – an API for providing a graphical user interface (GUI) for Java programs.

Swing was developed to provide a more sophisticated set of GUI components than the earlier AWT. Swing provides a look and feel that emulates the look and feel of several platforms, and also supports a pluggable look and feel that allows applications to have a look and feel unrelated to the underlying platform. It has more powerful and flexible components than AWT. In addition to familiar components such as buttons, check boxes and labels, Swing provides several advanced components such as tabbed panel, scroll panes, trees, tables, and lists.

SQL:

Structure Query Language (SQL) is a database query language used for storing and managing data in Relational DBMS. SQL was the first commercial language introduced for E.F Codd's **Relational** model of database. Today almost all RDBMS (MySql, Oracle, Infomix, Sybase, MS Access) use **SQL** as the standard database query language. SQL is used to perform all types of data operations in RDBMS.

Java-SQL Connectivity using JDBC:

Java Database Connectivity (**JDBC**) is an application programming interface (API) for the programming language Java, which defines how a client may access a database. It is a Java-based data access technology used for Java database connectivity. It is part of the Java Standard Edition platform, from Oracle Corporation. It provides methods to query and update data in a database and is oriented towards relational databases.

The connection to the database can be performed using Java programming (JDBC API) as:

```
   try
{
        Class.forName("oracle.jdbc.driver.OracleDriver");
  }
 catch (Exception e)
{
        System.err.println("Unable to find and load driver");
        System.exit(1);
}
public void connectToDB()
   {
                try
                {
                  connection =
DriverManager.getConnection("jdbc:oracle:thin:@localhost:1522:ORCL","mydbms","mydbms");
statement = connection.createStatement();
```

```
                    }
                    catch (SQLException connectException)
                    {
                     System.out.println(connectException.getMessage());
                     System.out.println(connectException.getSQLState());
                     System.out.println(connectException.getErrorCode());
                     System.exit(1);
                    }
  }
```

Thus, the connection from Java to Oracle database is performed and therefore, can be used for updating tables in the database directly.

Table Created in SQL for above mentioned purpose is as:

SQL> create table Loginform(Username Varchar2(20) primary key,Password varchar(20));

Table created.

SQL> create table Register(Username varchar2(20),Gender varchar2(8),Contact_no number(10),Password varchar2(20),Address varchar2(20));

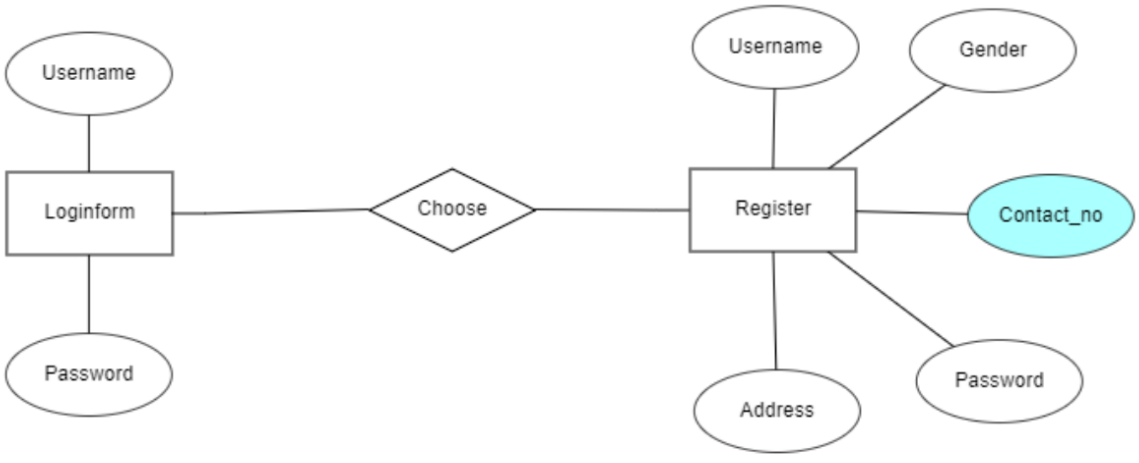
Table created.

SQL> alter table Loginform add primary key(Username);

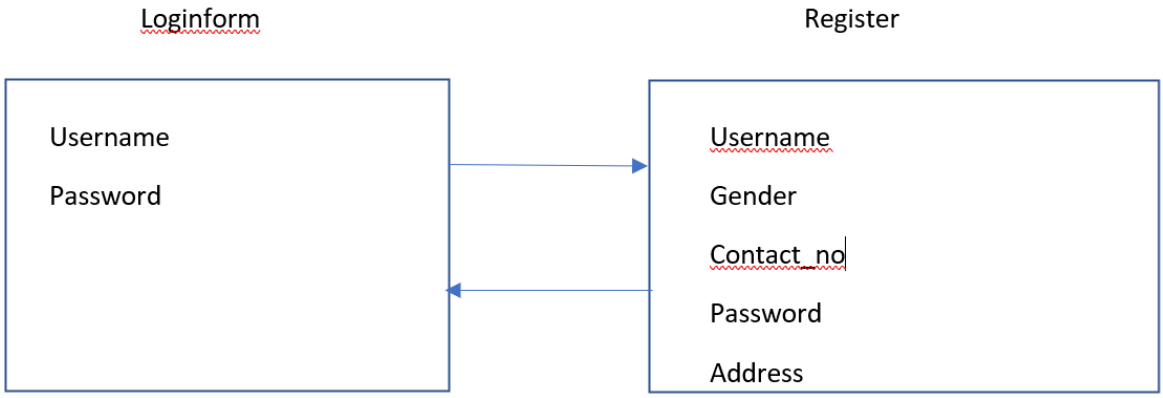
Table altered.

DESIGN:

ER DIAGRAM:



```
SQL> select * from tab;
TNAME                          TABTYPE  CLUSTERID
------------------------------ ------- ----------
LOGINFORM                      TABLE
REGISTER                       TABLE
2 rows selected.
SQL> desc Loginform;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 USERNAME                                  NOT NULL VARCHAR2(20)
 PASSWORD                                           VARCHAR2(20)

SQL> desc Register;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 USERNAME                                           VARCHAR2(20)
 GENDER                                             VARCHAR2(8)
 CONTACT_NO                                         NUMBER(10)
 PASSWORD                                           VARCHAR2(20)
 ADDRESS                                            VARCHAR2(20)
```



Implementation:

Program:

User Interface & Tables:

```
import java.awt.BorderLayout; import
java.awt.Font; import
java.awt.Image; import
java.awt.Toolkit; import
```

```
java.awt.event.WindowAdapter; import
java.awt.event.WindowEvent;
 import
javax.swing.ImageIcon;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.JMenu;
import
javax.swing.JMenuBar;
import
javax.swing.JMenuItem;
import
javax.swing.JOptionPane;
import javax.swing.JPanel;
import
javax.swing.JTextField;
import java.awt.BorderLayout;
import java.awt.FlowLayout; import
java.awt.GridLayout; import
java.awt.List; import
java.awt.event.ActionEvent; import
java.awt.event.ActionListener; import
java.awt.event.ItemEvent; import
java.awt.event.ItemListener; import
java.sql.Connection; import
java.sql.DriverManager; import
java.sql.ResultSet; import
java.sql.SQLException; import
java.sql.Statement;
import javax.swing.JButton;
import javax.swing.JOptionPane;
import javax.swing.JPanel;
import javax.swing.JScrollPane;
import javax.swing.JTable;
import javax.swing.JTextArea;
importjavax.swing.table.Default
TableModel;
public class Loginform extends
javax.swing.JFrame {
   public Loginform() {
      initComponents();
   }
   private void initComponents() {
      jPanel1 = new
javax.swing.JPanel();
      jLabel2 = new
javax.swing.JLabel();
      jLabel3 = new
javax.swing.JLabel();
      jLabel4 = new
javax.swing.JLabel();
      txtUsername = new
javax.swing.JTextField();
      txtPassword = new
javax.swing.JPasswordField();
```

```
        btnLogin = new
javax.swing.JButton();
        btnRegister = new
javax.swing.JButton();
        jLabel5 = new
javax.swing.JLabel();
        jLabel6 = new
javax.swing.JLabel();
        jLabel7 = new
javax.swing.JLabel();
        jLabel1 = new
javax.swing.JLabel();
setDefaultCloseOperation(javax.swing
.WindowConstants.EXIT_ON_CLOSE);
        setTitle("Login page");
        setPreferredSize(new
java.awt.Dimension(1070, 600));
        getContentPane().setLayout(new
org.netbeans.lib.awtextra.AbsoluteLa
yout());
        jPanel1.setBackground(new
java.awt.Color(0, 0, 0,80));
        jLabel2.setFont(new
java.awt.Font("Algerian", 1, 36));
        jLabel2.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel2.setText("LOGIN");
        jLabel3.setFont(new
java.awt.Font("Harrington", 1, 18));
        jLabel3.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel3.setText("Username:");
        jLabel4.setFont(new
java.awt.Font("Harrington", 1, 18));
        jLabel4.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel4.setText("Password:");
        txtUsername.setBackground(new
java.awt.Color(0, 102, 153,80));
        txtUsername.setFont(new
java.awt.Font("Tahoma", 0, 18));
        txtUsername.setForeground(new
java.awt.Color(255, 255, 255));
txtUsername.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
txtUsernameActionPerformed(evt);
            }
        });
```

```
        txtPassword.setBackground(new
java.awt.Color(0, 102, 153,80));
        txtPassword.setFont(new
java.awt.Font("Tahoma", 0, 18));
        txtPassword.setForeground(new
java.awt.Color(255, 255, 255));
        btnLogin.setBackground(new
java.awt.Color(0, 102, 153));
        btnLogin.setFont(new
java.awt.Font("Engravers MT", 1,
24)); // NOI18N
        btnLogin.setForeground(new
java.awt.Color(255, 255, 255));
        btnLogin.setText("LOGIN");
        btnLogin.setCursor(new
java.awt.Cursor(java.awt.Cursor.HAN
D_CURSOR));
        btnLogin.addMouseListener(new
java.awt.event.MouseAdapter() {
            public void
mouseClicked(java.awt.event.MouseE
vent evt) {
                btnLoginMouseClicked(evt);
            }
        });
        btnLogin.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
btnLoginActionPerformed(evt);
            }
        });
        btnRegister.setBackground(new
java.awt.Color(255, 0, 51));
        btnRegister.setFont(new
java.awt.Font("Harrington", 0, 18));
        btnRegister.setForeground(new
java.awt.Color(255, 255, 255));
        btnRegister.setText("Don't have
Account? Register Now");
btnRegister.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
btnRegisterActionPerformed(evt);
            }
        });
        jLabel5.setBackground(new
java.awt.Color(0, 0, 255));
```

```
        jLabel5.setFont(new
java.awt.Font("Agency FB", 3, 48));
        jLabel5.setForeground(new
java.awt.Color(204, 255, 255));
        jLabel5.setText("   DAA
DigiBook");
jLabel5.setBorder(javax.swing.Border
Factory.createMatteBorder(2, 2, 2, 2,
new java.awt.Color(255, 255, 255)));
        javax.swing.GroupLayout
jPanel1Layout = new
javax.swing.GroupLayout(jPanel1);
jPanel1.setLayout(jPanel1Layout);
jPanel1Layout.setHorizontalGroup(
jPanel1Layout.createParallelGroup(ja
vax.swing.GroupLayout.Alignment.LE
ADING)
.addGroup(jPanel1Layout.createSequ
entialGroup()
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.LEADING)
.addGroup(jPanel1Layout.createSequ
entialGroup()
                    .addGap(245, 245, 245)
                    .addComponent(jLabel2,
javax.swing.GroupLayout.PREFERRED
_SIZE, 118,
javax.swing.GroupLayout.PREFERRED
_SIZE))
.addGroup(jPanel1Layout.createSequ
entialGroup()
                    .addGap(140, 140, 140)
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.TRAILING)
.addComponent(jLabel3)
.addComponent(jLabel4))
                    .addGap(82, 82, 82)
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.TRAILING)
.addComponent(txtUsername,
javax.swing.GroupLayout.PREFERRED
_SIZE, 172,
javax.swing.GroupLayout.PREFERRED
_SIZE)
.addComponent(txtPassword,
javax.swing.GroupLayout.PREFERRED
_SIZE, 172,
```

```
javax.swing.GroupLayout.PREFERRED
_SIZE)))
.addGroup(jPanel1Layout.createSequ
entialGroup()
                .addGap(228, 228, 228)
.addComponent(btnLogin)))
.addContainerGap(javax.swing.Group
Layout.DEFAULT_SIZE,
Short.MAX_VALUE))
.addGroup(javax.swing.GroupLayout.
Alignment.TRAILING,
jPanel1Layout.createSequentialGroup
()
            .addGap(0, 8,
Short.MAX_VALUE)
            .addComponent(jLabel6)
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.LEADING)
.addGroup(jPanel1Layout.createSequ
entialGroup()
                .addGap(144, 144, 144)
.addComponent(btnRegister))
.addGroup(jPanel1Layout.createSequ
entialGroup()
                .addGap(159, 159, 159)
                .addComponent(jLabel5,
javax.swing.GroupLayout.PREFERRED
_SIZE, 278,
javax.swing.GroupLayout.PREFERRED
_SIZE)))
            .addGap(146, 146, 146))
      );
      jPanel1Layout.setVerticalGroup(
jPanel1Layout.createParallelGroup(ja
vax.swing.GroupLayout.Alignment.LE
ADING)
.addGroup(jPanel1Layout.createSequ
entialGroup()
            .addGap(43, 43, 43)
            .addComponent(jLabel2,
javax.swing.GroupLayout.PREFERRED
_SIZE, 60,
javax.swing.GroupLayout.PREFERRED
_SIZE)
            .addGap(42, 42, 42)
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.BASELINE)
.addComponent(txtUsername,
javax.swing.GroupLayout.PREFERRED
```

```
_SIZE,
javax.swing.GroupLayout.DEFAULT_SI
ZE,
javax.swing.GroupLayout.PREFERRED
_SIZE)
                .addComponent(jLabel3))
            .addGap(51, 51, 51)
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.BASELINE)
                .addComponent(jLabel4)
.addComponent(txtPassword,
javax.swing.GroupLayout.PREFERRED
_SIZE,
javax.swing.GroupLayout.DEFAULT_SI
ZE,
javax.swing.GroupLayout.PREFERRED
_SIZE))
            .addGap(57, 57, 57)
            .addComponent(btnLogin)
            .addGap(33, 33, 33)
            .addComponent(btnRegister)
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.LEADING)
.addGroup(jPanel1Layout.createSequ
entialGroup()
                    .addGap(38, 38, 38)
                    .addComponent(jLabel6,
javax.swing.GroupLayout.PREFERRED
_SIZE, 48,
javax.swing.GroupLayout.PREFERRED
_SIZE))
.addGroup(jPanel1Layout.createSequ
entialGroup()
                    .addGap(51, 51, 51)
  .addComponent(jLabel5,
javax.swing.GroupLayout.PREFERRED
_SIZE, 68,
javax.swing.GroupLayout.PREFERRED
_SIZE)))
            .addContainerGap(69,
Short.MAX_VALUE))
      );
      getContentPane().add(jPanel1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(290, 100, 610, 600));
      jLabel7.setFont(new
java.awt.Font("Algerian", 2, 48));
```

```
      jLabel7.setForeground(new
java.awt.Color(255, 255, 255));
      jLabel7.setText("WELCOME");
    getContentPane().add(jLabel7, new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(480, 40, 230, -1));
      jLabel1.setIcon(new
javax.swing.ImageIcon("C:\\Users\\B
SURESH
KUMAR\\OneDrive\\Desktop\\login
bg.jpg")); // NOI18N
      getContentPane().add(jLabel1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(0, 0, 1210, 800));
      setSize(new
java.awt.Dimension(1184, 829));
      setLocationRelativeTo(null);
   }// </editor-fold>
   private void
btnRegisterActionPerformed(java.awt
.event.ActionEvent evt) {
      this.toBack();
      Register reg = new Register();
      reg.setVisible(true);
      reg.toFront();
   }
   public boolean verifyUser() throws
IOException{
      File f = new File("UserData.txt");
      if(!f.exists()){
         f.createNewFile();
      }
      BufferedReader br = new
BufferedReader(new FileReader(f));
      Object[] Lines =
br.lines().toArray();
      int i=0;
      for(i=0;i<Lines.length; i++){
         String Line =
Lines[i].toString().trim();
         String[] Row = Line.split(",");
if(txtUsername.getText().equals(Row[
1]) &&
txtPassword.getText().equals(Row[4])
){
            return true;
         }
         else{
            return false;
         }
```

```
      }
   return false;
   }
   private void
btnLoginMouseClicked(java.awt.even
t.MouseEvent evt) {
      try{
         if(verifyUser() == true){
JOptionPane.showMessageDialog(this
,"User Logged in Successfully!");
            DashBoard db = new
DashBoard();
            db.setVisible(true);
            this.setVisible(false);
         }
         else{
JOptionPane.showMessageDialog(this
,"Incorrect Credentials. Please Try
Again!");
         }
      } catch (IOException ex) {
Logger.getLogger(Loginform.class.get
Name()).log(Level.SEVERE, null, ex);
      }
   }
   private void
btnLoginActionPerformed(java.awt.ev
ent.ActionEvent evt) {
   }
   private void
txtUsernameActionPerformed(java.a
wt.event.ActionEvent evt) {
   }
   public static void main(String args[])
{
      try {
         for
(javax.swing.UIManager.LookAndFeel
Info info :
javax.swing.UIManager.getInstalledLo
okAndFeels()) {
 if ("Nimbus".equals(info.getName()))
{
javax.swing.UIManager.setLookAndFe
el(info.getClassName());
               break;
            }
         }
      } catch (ClassNotFoundException
ex) {
```

```
java.util.logging.Logger.getLogger(Log
inform.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
      } catch (InstantiationException
ex) {
java.util.logging.Logger.getLogger(Log
inform.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
      } catch (IllegalAccessException
ex) {
java.util.logging.Logger.getLogger(Log
inform.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
      } catch
(javax.swing.UnsupportedLookAndFe
elException ex) {
java.util.logging.Logger.getLogger(Log
inform.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
      }
java.awt.EventQueue.invokeLater(ne
w Runnable() {
          public void run() {
             new
Loginform().setVisible(true);
          }
      });
   }
}
public class Register extends
javax.swing.JFrame {
   public Register() {
      initComponents();
   }
   private void initComponents() {
      jPanel1 = new
javax.swing.JPanel();
      jLabel2 = new
javax.swing.JLabel();
      jLabel3 = new
javax.swing.JLabel();
      jLabel4 = new
javax.swing.JLabel();
      jLabel5 = new
javax.swing.JLabel();
      jLabel6 = new
javax.swing.JLabel();
      jLabel7 = new
javax.swing.JLabel();
      txtUsername = new
javax.swing.JTextField();
```

```
        txtContactno = new
javax.swing.JTextField();
        txtAddress = new
javax.swing.JTextField();
        txtPassword = new
javax.swing.JPasswordField();
        btnSubmit = new
javax.swing.JButton();
        btnReset = new
javax.swing.JButton();
        cbGender = new
javax.swing.JTextField();
        btnBack = new
javax.swing.JButton();
        jLabel1 = new
javax.swing.JLabel();
setDefaultCloseOperation(javax.swing
.WindowConstants.EXIT_ON_CLOSE);
        getContentPane().setLayout(new
org.netbeans.lib.awtextra.AbsoluteLa
yout());
        jPanel1.setBackground(new
java.awt.Color(0,0,0,70));
        jLabel2.setFont(new
java.awt.Font("Algerian", 1, 36));
        jLabel2.setForeground(new
java.awt.Color(204, 255, 255));
        jLabel2.setText("REGISTER");
        jLabel3.setBackground(new
java.awt.Color(0, 0, 0));
        jLabel3.setFont(new
java.awt.Font("Harrington", 1, 18));
        jLabel3.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel3.setText("Username :");
        jLabel4.setFont(new
java.awt.Font("Harrington", 1, 18));
        jLabel4.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel4.setText("Gender :");
        jLabel5.setFont(new
java.awt.Font("Harrington", 1, 18));
        jLabel5.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel5.setText("Contact no :");
        jLabel6.setFont(new
java.awt.Font("Harrington", 1, 18));
        jLabel6.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel6.setText("Password :");
```

```
        jLabel7.setFont(new
java.awt.Font("Harrington", 1, 18));
        jLabel7.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel7.setText("Address :");
        btnSubmit.setBackground(new
java.awt.Color(204, 102, 255));
        btnSubmit.setFont(new
java.awt.Font("Algerian", 0, 18));
        btnSubmit.setForeground(new
java.awt.Color(255, 255, 255));
        btnSubmit.setText("Submit");
       btnSubmit.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
btnSubmitActionPerformed(evt);
            }
        });
        btnReset.setBackground(new
java.awt.Color(153, 102, 255));
        btnReset.setFont(new
java.awt.Font("Algerian", 0, 18));
        btnReset.setForeground(new
java.awt.Color(255, 255, 255));
        btnReset.setText("Reset");
        btnReset.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
btnResetActionPerformed(evt);
            }
        });
        btnBack.setBackground(new
java.awt.Color(204, 102, 255));
        btnBack.setFont(new
java.awt.Font("Algerian", 0, 18));
        btnBack.setForeground(new
java.awt.Color(255, 255, 255));
        btnBack.setText("BACK");
        btnBack.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
btnBackActionPerformed(evt);
            }
        });
```

```
      javax.swing.GroupLayout
jPanel1Layout = new
javax.swing.GroupLayout(jPanel1);
     jPanel1.setLayout(jPanel1Layout);
jPanel1Layout.setHorizontalGroup(
jPanel1Layout.createParallelGroup(ja
vax.swing.GroupLayout.Alignment.LE
ADING)
.addGroup(javax.swing.GroupLayout.
Alignment.TRAILING,
jPanel1Layout.createSequentialGroup
()
.addContainerGap(javax.swing.Group
Layout.DEFAULT_SIZE,
Short.MAX_VALUE)
            .addComponent(jLabel2)
            .addGap(169, 169, 169))
.addGroup(jPanel1Layout.createSequ
entialGroup()
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.LEADING)
.addGroup(jPanel1Layout.createSequ
entialGroup()
                .addGap(84, 84, 84)
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.LEADING)
.addGroup(javax.swing.GroupLayout.
Alignment.TRAILING,
jPanel1Layout.createParallelGroup(ja
vax.swing.GroupLayout.Alignment.LE
ADING)
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.LEADING, false)
.addGroup(javax.swing.GroupLayout.
Alignment.TRAILING,
jPanel1Layout.createSequentialGroup
()
  .addGap(0, 0, Short.MAX_VALUE)
.addComponent(jLabel7)
 .addGap(102, 102, 102))
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.TRAILING)
.addComponent(btnReset)
.addComponent(jLabel6)))
.addGroup(jPanel1Layout.createSequ
entialGroup()
.addGroup(jPanel1Layout.createParall
```

```
elGroup(javax.swing.GroupLayout.Ali
gnment.LEADING)
.addComponent(jLabel5)
.addComponent(jLabel4))
                .addGap(119, 119, 119)))
.addGroup(jPanel1Layout.createSequ
entialGroup()
.addComponent(jLabel3)
                    .addGap(127, 127, 127)))
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.LEADING, false)
.addGroup(jPanel1Layout.createSequ
entialGroup()
.addComponent(btnSubmit)
 .addGap(0, 59, Short.MAX_VALUE))
.addComponent(txtAddress)
.addComponent(txtUsername)
.addComponent(cbGender)
.addComponent(txtContactno)
.addComponent(txtPassword)))
.addGroup(jPanel1Layout.createSequ
entialGroup()
                    .addGap(197, 197, 197)
.addComponent(btnBack)))
            .addContainerGap(72,
Short.MAX_VALUE))
      );
      jPanel1Layout.setVerticalGroup(
jPanel1Layout.createParallelGroup(ja
vax.swing.GroupLayout.Alignment.LE
ADING)
.addGroup(jPanel1Layout.createSequ
entialGroup()
            .addGap(48, 48, 48)
            .addComponent(jLabel2)
            .addGap(24, 24, 24)
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.BASELINE)
                .addComponent(jLabel3)
.addComponent(txtUsername,
javax.swing.GroupLayout.PREFERRED
_SIZE,
javax.swing.GroupLayout.DEFAULT_SI
ZE,
javax.swing.GroupLayout.PREFERRED
_SIZE))
            .addGap(23, 23, 23)
.addGroup(jPanel1Layout.createParall
```

```
elGroup(javax.swing.GroupLayout.Ali
gnment.BASELINE)
                .addComponent(jLabel4)
                .addComponent(cbGender,
javax.swing.GroupLayout.PREFERRED
_SIZE,
javax.swing.GroupLayout.DEFAULT_SI
ZE,
javax.swing.GroupLayout.PREFERRED
_SIZE))
            .addGap(39, 39, 39)
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.BASELINE)
                .addComponent(jLabel5)
.addComponent(txtContactno,
javax.swing.GroupLayout.PREFERRED
_SIZE,
javax.swing.GroupLayout.DEFAULT_SI
ZE,
javax.swing.GroupLayout.PREFERRED
_SIZE))
            .addGap(26, 26, 26)
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.BASELINE)
                .addComponent(jLabel6)
.addComponent(txtPassword,
javax.swing.GroupLayout.PREFERRED
_SIZE,
javax.swing.GroupLayout.DEFAULT_SI
ZE,
javax.swing.GroupLayout.PREFERRED
_SIZE))
            .addGap(35, 35, 35)
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.LEADING)
                .addComponent(jLabel7)
.addComponent(txtAddress,
javax.swing.GroupLayout.PREFERRED
_SIZE,
javax.swing.GroupLayout.DEFAULT_SI
ZE,
javax.swing.GroupLayout.PREFERRED
_SIZE))
            .addGap(66, 66, 66)
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.BASELINE)
.addComponent(btnSubmit)
```

```
                .addComponent(btnReset))
.addPreferredGap(javax.swing.Layout
Style.ComponentPlacement.RELATED,
26, Short.MAX_VALUE)
            .addComponent(btnBack)
            .addGap(36, 36, 36))
      );
      getContentPane().add(jPanel1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(370, 70, 540, 580));
      jLabel1.setIcon(new
javax.swing.ImageIcon("C:\\Users\\B
SURESH
KUMAR\\OneDrive\\Desktop\\reg
img")); // NOI18N
      getContentPane().add(jLabel1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(0, 0, 1280, 720));

      setSize(new
java.awt.Dimension(1184, 829));
      setLocationRelativeTo(null);
   }// </editor-fold>
   private void
btnResetActionPerformed(java.awt.e
vent.ActionEvent evt) {
      txtUsername.setText(null);
      txtContactno.setText(null);
      txtPassword.setText(null);
      txtAddress.setText(null);
   }
   private void
btnSubmitActionPerformed(java.awt.
event.ActionEvent evt) {
   try{
if(!"".equals(txtUsername.getText())
&& !"".equals(txtContactno.getText())
&& !"".equals(txtPassword.getText())
&& !"".equals(txtAddress.getText()) ){
      setData();
JOptionPane.showMessageDialog(this
,"User Registered Successfully");
      txtUsername.setText(null);
      txtContactno.setText(null);
      txtPassword.setText(null);
      txtAddress.setText(null);
      }
```

```
      else{
JOptionPane.showMessageDialog(this
,"Please fill All the Details!!");
      }
   }
      catch (IOException ex) {
Logger.getLogger(Register.class.getNa
me()).log(Level.SEVERE, null, ex);
      }
   }
   private void
btnBackActionPerformed(java.awt.ev
ent.ActionEvent evt) {
      this.toBack();
      setVisible(false);
      new Loginform().toFront();
      new
Loginform().setState(java.awt.Frame.
NORMAL);
   }
   public void setData() throws
IOException{
      File f = new File("UserData.txt");
      if(!f.exists()){
         f.createNewFile();
      }
      BufferedReader br = new
BufferedReader(new FileReader(f));
      Object[] Lines =
br.lines().toArray();
      int i=0;
      int id=0;
      for(i=0;i<Lines.length;i++){
         String Line =
Lines[i].toString().trim();
         String[] Row = Line.split(",");
      id = Integer.parseInt(Row[0]) + 1;
      }
      int userId= id +1;
      FileWriter fw = new
FileWriter(f,true);
      BufferedWriter bw = new
BufferedWriter(fw);
      PrintWriter pw = new
PrintWriter(bw);
pw.println(userId+","+txtUsername.g
etText() + ","+cbGender.getText() +
","+txtContactno.getText() +
","+txtPassword.getText()+","+txtAdd
ress.getText());
      pw.flush();
```

```
        pw.close();
        bw.close();
    }
    public static void main(String args[])
{
          for
(javax.swing.UIManager.LookAndFeel
Info info :
javax.swing.UIManager.getInstalledLo
okAndFeels()) {
 if ("Nimbus".equals(info.getName()))
{
javax.swing.UIManager.setLookAndFe
el(info.getClassName());
                break;
            }
          }
        } catch (ClassNotFoundException
ex) {
java.util.logging.Logger.getLogger(Reg
ister.class.getName()).log(java.util.log
ging.Level.SEVERE, null, ex);
        } catch (InstantiationException
ex) {
java.util.logging.Logger.getLogger(Reg
ister.class.getName()).log(java.util.log
ging.Level.SEVERE, null, ex);
        } catch (IllegalAccessException
ex) {
java.util.logging.Logger.getLogger(Reg
ister.class.getName()).log(java.util.log
ging.Level.SEVERE, null, ex);
        } catch
(javax.swing.UnsupportedLookAndFe
elException ex) {

java.util.logging.Logger.getLogger(Reg
ister.class.getName()).log(java.util.log
ging.Level.SEVERE, null, ex);
        }
java.awt.EventQueue.invokeLater(ne
w Runnable() {
          public void run() {
             new
Register().setVisible(true);
          }
        });
    }
}
public class DashBoard extends
javax.swing.JFrame {
```

```
    public DashBoard() {
        initComponents();
    }
defaultstate="collapsed"
desc="Generated Code">
    private void initComponents() {
        btnNext = new
javax.swing.JButton();
        jScrollPane1 = new
javax.swing.JScrollPane();
        jTextArea1 = new
javax.swing.JTextArea();
        jLabel1 = new
javax.swing.JLabel();
        jLabel3 = new
javax.swing.JLabel();
        jLabel2 = new
javax.swing.JLabel();
setDefaultCloseOperation(javax.swing
.WindowConstants.EXIT_ON_CLOSE);
        setTitle("main ui");
        getContentPane().setLayout(new
org.netbeans.lib.awtextra.AbsoluteLa
yout());
        btnNext.setBackground(new
java.awt.Color(204, 0, 0));
        btnNext.setFont(new
java.awt.Font("Harrington", 2, 18));
        btnNext.setForeground(new
java.awt.Color(255, 255, 255));
        btnNext.setText("NEXT");
        btnNext.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {

btnNextActionPerformed(evt);
            }
        });
        getContentPane().add(btnNext,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(950, 30, -1, -1));
        jTextArea1.setColumns(20);
        jTextArea1.setFont(new
java.awt.Font("Harrington", 0, 24)); //
NOI18N
        jTextArea1.setRows(5);
        jTextArea1.setText("\nAn
Algorithm is a sequence of steps to
```

```
solve a problem. Design and Analysis
of Algorithm is \nvery important for
designing algorithm to solve different
types of problems in the branch of
\ncomputer science and information
technology.\n\nAn algorithm is the
best way to represent the solution of
a particular problem in a very
\nsimple and efficient way. If we have
an algorithm for a specific problem,
then we can implement\nit in any
programming language, meaning that
the algorithm is independent from
any \nprogramming
languages.\n\nAdvantages of
Algorithms:\n1)Algorithms are easy
to understand.\n2)Algorithms make it
easy to understand and implement an
actual program.\n3)An algorithm
eases debugging to detect any logical
errors in the program.\n4)An
algorithm is language-
independent.\n");
jScrollPane1.setViewportView(jTextAr
ea1);
getContentPane().add(jScrollPane1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(100, 160, 1040, 550));
        jLabel1.setFont(new
java.awt.Font("LCDMono2", 1, 36));
        jLabel1.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel1.setText("Design and
Analysis of Algorithm");
        getContentPane().add(jLabel1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(290, 110, 690, -1));
        jLabel3.setFont(new
java.awt.Font("Algerian", 1, 24)); //
NOI18N
        jLabel3.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel3.setText("DAA
DIGIBOOK");
        getContentPane().add(jLabel3,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(10, 20, -1, 40));
```

```
        jLabel2.setIcon(new
javax.swing.ImageIcon("C:\\Users\\B
SURESH
KUMAR\\OneDrive\\Desktop\\Dbook
.jpeg")); // NOI18N
        jLabel2.setText("DAA
DIGIBOOK");
        getContentPane().add(jLabel2,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(0, 0, 1270, 920));
        setBounds(0, 0, 1184, 829);
    }// </editor-fold>
    private void
btnNextActionPerformed(java.awt.ev
ent.ActionEvent evt) {
        Topics top = new Topics();
        top.show();
        dispose();
    }

    public static void main(String args[])
{
        try {
            for
(javax.swing.UIManager.LookAndFeel
Info info :
javax.swing.UIManager.getInstalledLo
okAndFeels()) {
                if
("Nimbus".equals(info.getName())) {
javax.swing.UIManager.setLookAndFe
el(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException
ex) {
java.util.logging.Logger.getLogger(Das
hBoard.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
        } catch (InstantiationException
ex) {
java.util.logging.Logger.getLogger(Das
hBoard.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
        } catch (IllegalAccessException
ex) {
java.util.logging.Logger.getLogger(Das
hBoard.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
```

```
        } catch
(javax.swing.UnsupportedLookAndFe
elException ex) {
java.util.logging.Logger.getLogger(Das
hBoard.class.getName()).log(java.util.l
ogging.Level.SEVERE, null, ex);
        }
java.awt.EventQueue.invokeLater(ne
w Runnable() {
            public void run() {
                new
DashBoard().setVisible(true);
            }
        });
    }
}
public class Topics extends
javax.swing.JFrame {
    public Topics() {
        initComponents();
    }
defaultstate="collapsed"
desc="Generated Code">
    private void initComponents() {
        jPanel1 = new
javax.swing.JPanel();
        jLabel2 = new
javax.swing.JLabel();
        btnDc = new
javax.swing.JButton();
        btnMax = new
javax.swing.JButton();
        btnJsd = new
javax.swing.JButton();
        btnGreedy = new
javax.swing.JButton();
        btnFkn = new
javax.swing.JButton();
        jLabel4 = new
javax.swing.JLabel();
        btnExit = new
javax.swing.JButton();
        jLabel1 = new
javax.swing.JLabel();
setDefaultCloseOperation(javax.swing
.WindowConstants.EXIT_ON_CLOSE);
        getContentPane().setLayout(new
org.netbeans.lib.awtextra.AbsoluteLa
yout());
        jPanel1.setBackground(new
java.awt.Color(0,0,0,80));
```

```
        jPanel1.setBorder(new
javax.swing.border.SoftBevelBorder(j
avax.swing.border.BevelBorder.RAISE
D, new java.awt.Color(0, 0, 0), new
java.awt.Color(0, 0, 0), new
java.awt.Color(0, 51, 204), new
java.awt.Color(0, 51, 204)));
        jLabel2.setBackground(new
java.awt.Color(0, 0, 0));
        jLabel2.setFont(new
java.awt.Font("MingLiU_HKSCS-ExtB",
1, 36)); // NOI18N
        jLabel2.setText("DAA
ALGORITHMS");
        btnDc.setFont(new
java.awt.Font("Harrington", 2, 18));
btnDc.setText("DIVIDE&CONQUER");
        btnDc.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
                btnDcActionPerformed(evt);
            }
        });
        btnMax.setFont(new
java.awt.Font("Harrington", 2, 18));
        btnMax.setText("MAXMIN
PROBLEM");
        btnMax.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {

btnMaxActionPerformed(evt);
            }
        });
        btnJsd.setFont(new
java.awt.Font("Harrington", 2, 18));
        btnJsd.setText("JOB
SEQUENCING DEADLINE");
        btnJsd.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
                btnJsdActionPerformed(evt);
            }
        });
```

```
        btnGreedy.setFont(new
java.awt.Font("Harrington", 2, 18));
 btnGreedy.setText("GREEDY
METHOD");
btnGreedy.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
btnGreedyActionPerformed(evt);
            }
        });
        btnFkn.setFont(new
java.awt.Font("Harrington", 2, 18));
        btnFkn.setText("FRACTIONAL
KNAPSACK");
        btnFkn.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
btnFknActionPerformed(evt);
            }
        });
        javax.swing.GroupLayout
jPanel1Layout = new
javax.swing.GroupLayout(jPanel1);
     jPanel1.setLayout(jPanel1Layout);
jPanel1Layout.setHorizontalGroup(
jPanel1Layout.createParallelGroup(ja
vax.swing.GroupLayout.Alignment.LE
ADING)
.addGroup(jPanel1Layout.createSequ
entialGroup()
                .addGap(211, 211, 211)
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.TRAILING)
                 .addComponent(btnGreedy,
javax.swing.GroupLayout.PREFERRED
_SIZE, 196,
javax.swing.GroupLayout.PREFERRED
_SIZE)
                    .addComponent(btnMax)
                    .addComponent(btnDc,
javax.swing.GroupLayout.PREFERRED
_SIZE, 196,
javax.swing.GroupLayout.PREFERRED
_SIZE))
.addContainerGap(javax.swing.Group
Layout.DEFAULT_SIZE,
```

```
Short.MAX_VALUE))
.addGroup(javax.swing.GroupLayout.
Alignment.TRAILING,
jPanel1Layout.createSequentialGroup
()
            .addContainerGap(172,
Short.MAX_VALUE)
.addGroup(jPanel1Layout.createParall
elGroup(javax.swing.GroupLayout.Ali
gnment.LEADING, false)
                .addComponent(jLabel2,
javax.swing.GroupLayout.DEFAULT_SI
ZE,
javax.swing.GroupLayout.DEFAULT_SI
ZE, Short.MAX_VALUE)
                .addComponent(btnFkn,
javax.swing.GroupLayout.DEFAULT_SI
ZE,
javax.swing.GroupLayout.DEFAULT_SI
ZE, Short.MAX_VALUE)
        .addComponent(btnJsd,
javax.swing.GroupLayout.DEFAULT_SI
ZE,
javax.swing.GroupLayout.DEFAULT_SI
ZE, Short.MAX_VALUE))
            .addGap(172, 172, 172))
      );
      jPanel1Layout.setVerticalGroup(
jPanel1Layout.createParallelGroup(ja
vax.swing.GroupLayout.Alignment.LE
ADING)
.addGroup(jPanel1Layout.createSequ
entialGroup()
            .addContainerGap()
            .addComponent(jLabel2)
            .addGap(68, 68, 68)
            .addComponent(btnDc,
javax.swing.GroupLayout.PREFERRED
_SIZE, 57,
javax.swing.GroupLayout.PREFERRED
_SIZE)
            .addGap(27, 27, 27)
            .addComponent(btnMax,
javax.swing.GroupLayout.PREFERRED
_SIZE, 57,
javax.swing.GroupLayout.PREFERRED
_SIZE)
            .addGap(34, 34, 34)
            .addComponent(btnGreedy,
javax.swing.GroupLayout.PREFERRED
_SIZE, 57,
```

```
javax.swing.GroupLayout.PREFERRED
_SIZE)
            .addGap(28, 28, 28)
            .addComponent(btnFkn,
javax.swing.GroupLayout.PREFERRED
_SIZE, 57,
javax.swing.GroupLayout.PREFERRED
_SIZE)
            .addGap(31, 31, 31)
            .addComponent(btnJsd,
javax.swing.GroupLayout.PREFERRED
_SIZE, 57,
javax.swing.GroupLayout.PREFERRED
_SIZE)
            .addContainerGap(71,
Short.MAX_VALUE))
      );
      getContentPane().add(jPanel1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(320, 100, 630, 600));
      jLabel4.setFont(new
java.awt.Font("Algerian", 1, 24));
      jLabel4.setForeground(new
java.awt.Color(255, 255, 255));
      jLabel4.setText("DAA
DIGIBOOK");
      getContentPane().add(jLabel4,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(10, 20, -1, 40));
      btnExit.setBackground(new
java.awt.Color(255, 0, 0));
      btnExit.setFont(new
java.awt.Font("Algerian", 0, 18));
      btnExit.setForeground(new
java.awt.Color(255, 255, 255));
      btnExit.setText("EXIT");
      btnExit.addActionListener(new
java.awt.event.ActionListener() {
          public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
            btnExitActionPerformed(evt);
          }
      });
  getContentPane().add(btnExit, new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(1090, 30, -1, -1));
      jLabel1.setIcon(new
javax.swing.ImageIcon("C:\\Users\\B
```

```
SURESH
KUMAR\\OneDrive\\Desktop\\Dbook
.jpeg")); // NOI18N
 getContentPane().add(jLabel1, new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(0, 0, 1270, 800));
      setBounds(0, 0, 1184, 829);
   }// </editor-fold>
   private void
btnDcActionPerformed(java.awt.even
t.ActionEvent evt) {
      this.toBack();
      Dc dc1 = new Dc();
      dc1.setVisible(true);
      dc1.toFront();
   }
   private void
btnMaxActionPerformed(java.awt.ev
ent.ActionEvent evt) {
      Mm mm1 = new Mm();
      mm1.setVisible(true);
      mm1.toFront();
   }
   private void
btnGreedyActionPerformed(java.awt.
event.ActionEvent evt) {
      greedy gr1 = new greedy();
      gr1.setVisible(true);
      gr1.toFront();
   }
   private void
btnFknActionPerformed(java.awt.eve
nt.ActionEvent evt) {
      Knapsack kn1 = new Knapsack();
      kn1.setVisible(true);
      kn1.toFront();
   }
   private void
btnJsdActionPerformed(java.awt.eve
nt.ActionEvent evt) {
      Jsd js1 = new Jsd();
      js1.setVisible(true);
      js1.toFront();
   }
   private void
btnExitActionPerformed(java.awt.eve
nt.ActionEvent evt) {
      JFrame frame = new JFrame();
if(JOptionPane.showConfirmDialog(fr
ame,"Confirm if you want to
Exit","EXIT",
```

```
JOptionPane.YES_NO_OPTION)==JOpt
ionPane.YES_NO_OPTION)
      {
         System.exit(0);
      }
   }
   public static void main(String args[])
{
       try {
         for
(javax.swing.UIManager.LookAndFeel
Info info :
javax.swing.UIManager.getInstalledLo
okAndFeels()) {
  if ("Nimbus".equals(info.getName()))
{
javax.swing.UIManager.setLookAndFe
el(info.getClassName());
                break;
            }
         }
      } catch (ClassNotFoundException
ex) {
java.util.logging.Logger.getLogger(To
pics.class.getName()).log(java.util.log
ging.Level.SEVERE, null, ex);
      } catch (InstantiationException
ex) {
java.util.logging.Logger.getLogger(To
pics.class.getName()).log(java.util.log
ging.Level.SEVERE, null, ex);
      } catch (IllegalAccessException
ex) {
java.util.logging.Logger.getLogger(To
pics.class.getName()).log(java.util.log
ging.Level.SEVERE, null, ex);
      } catch
(javax.swing.UnsupportedLookAndFe
elException ex) {
java.util.logging.Logger.getLogger(To
pics.class.getName()).log(java.util.log
ging.Level.SEVERE, null, ex);
      }
java.awt.EventQueue.invokeLater(ne
w Runnable() {
         public void run() {
            new Topics().setVisible(true);
         }
      });
   }
}
```

```
public class Dc extends
javax.swing.JFrame {
    public Dc() {
        initComponents();
    }
    private void initComponents() {
        jLabel3 = new
javax.swing.JLabel();
        jLabel2 = new
javax.swing.JLabel();
        btnExit1 = new
javax.swing.JButton();
        btnBack1 = new
javax.swing.JButton();
        jScrollPane1 = new
javax.swing.JScrollPane();
        jTextArea1 = new
javax.swing.JTextArea();
        jLabel1 = new
javax.swing.JLabel();
setDefaultCloseOperation(javax.swing
.WindowConstants.EXIT_ON_CLOSE);
        getContentPane().setLayout(new
org.netbeans.lib.awtextra.AbsoluteLa
yout());
        jLabel3.setFont(new
java.awt.Font("Algerian", 1, 24));
        jLabel3.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel3.setText("DAA
DIGIBOOK");
        getContentPane().add(jLabel3,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(10, 20, -1, 40));
        jLabel2.setFont(new
java.awt.Font("LCDMono2", 1, 24));
        jLabel2.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel2.setText("DIVIDE AND
CONQUER");
        getContentPane().add(jLabel2,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(460, 30, 260, -1));
        btnExit1.setBackground(new
java.awt.Color(255, 0, 0));
        btnExit1.setFont(new
java.awt.Font("Algerian", 0, 18));
        btnExit1.setForeground(new
java.awt.Color(255, 255, 255));
```

```
        btnExit1.setText("EXIT");
        btnExit1.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
btnExit1ActionPerformed(evt);
            }
        });
        getContentPane().add(btnExit1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(1090, 30, -1, -1));
        btnBack1.setBackground(new
java.awt.Color(51, 0, 255));
        btnBack1.setFont(new
java.awt.Font("Algerian", 0, 18));
        btnBack1.setForeground(new
java.awt.Color(255, 255, 255));
        btnBack1.setText("BACK");
        btnBack1.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
btnBack1ActionPerformed(evt);
            }
        });
        getContentPane().add(btnBack1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(970, 30, -1, -1));
        jTextArea1.setColumns(20);
        jTextArea1.setFont(new
java.awt.Font("Harrington", 2, 18));
        jTextArea1.setRows(5);
        jTextArea1.setText("In divide and
conquer approach, a problem is
divided into smaller problems, then
the smaller problems are solved
independently, and finally \nthe
solutions of smaller problems are
combined into a solution for the large
problem.\n\nGenerally, divide-and-
conquer algorithms have three parts -
\n\n1)Divide the problem into a
number of sub-problems that are
smaller instances of the same
problem.\n\n2)Conquer the sub-
problems by solving them recursively.
If they are small enough, solve the
```

```
sub-problems as base
cases.\n\n3)Combine the solutions to
the sub-problems into the solution
for the original problem.\n\nPros and
cons of Divide and Conquer
Approach:\n\nDivide and conquer
approach supports parallelism as sub-
problems are independent. Hence, an
algorithm, which is designed using
this technique,\n can run on the
multiprocessor system or in different
machines simultaneously.\n\nIn this
approach, most of the algorithms are
designed using recursion, hence
memory management is very high.
For recursive function stack is used,\n
where function state needs to be
stored.\n\n\nApplication of Divide
and Conquer Approach:\n\nFollowing
are some problems, which are solved
using divide and conquer
approach.\n\n1)Finding the
maximum and minimum of a
sequence of numbers\n2)Strassen’s
matrix multiplication\n3)Merge
sort\n4)Binary search\n\n\n\n");
jScrollPane1.setViewportView(jTextAr
ea1);
getContentPane().add(jScrollPane1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(20, 80, 1180, 730));
      jLabel1.setIcon(new
javax.swing.ImageIcon("C:\\Users\\B
SURESHKUMAR\\OneDrive\\Desktop\
\Dbook.jpeg")); // NOI18N
 getContentPane().add(jLabel1, new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(0, 0, 1260, 810));
      setBounds(0, 0, 1184, 829);
   }// </editor-fold>
   private void
btnExit1ActionPerformed(java.awt.ev
ent.ActionEvent evt) {
      JFrame frame = new JFrame();
if(JOptionPane.showConfirmDialog(fr
ame,"Confirm if you want to
Exit","EXIT",
JOptionPane.YES_NO_OPTION)==JOpt
ionPane.YES_NO_OPTION)
   {
```

```
        System.exit(0);
        }
    }
    private void
btnBack1ActionPerformed(java.awt.e
vent.ActionEvent evt) {
        this.toBack();
        setVisible(false);
        new Topics().toFront();
        new
Topics().setState(java.awt.Frame.NOR
MAL);
here:
    }
    public static void main(String args[])
{
        try {
            for
(javax.swing.UIManager.LookAndFeel
Info info :
javax.swing.UIManager.getInstalledLo
okAndFeels()) {
                if
("Nimbus".equals(info.getName())) {
javax.swing.UIManager.setLookAndFe
el(info.getClassName());
                    break;
                }
            }
        } catch (ClassNotFoundException
ex) {
java.util.logging.Logger.getLogger(Dc.
class.getName()).log(java.util.logging.
Level.SEVERE, null, ex);
        } catch (InstantiationException
ex) {
java.util.logging.Logger.getLogger(Dc.
class.getName()).log(java.util.logging.
Level.SEVERE, null, ex);
        } catch (IllegalAccessException
ex) {
java.util.logging.Logger.getLogger(Dc.
class.getName()).log(java.util.logging.
Level.SEVERE, null, ex);
        } catch
(javax.swing.UnsupportedLookAndFe
elException ex) {
java.util.logging.Logger.getLogger(Dc.
class.getName()).log(java.util.logging.
Level.SEVERE, null, ex);
        }
```

```
java.awt.EventQueue.invokeLater(ne
w Runnable() {
        public void run() {
           new Dc().setVisible(true);
        }
     });
  }
}
public class Mm extends
javax.swing.JFrame {
  public Mm() {
     initComponents();
  }
  private void initComponents() {
     btnExit2 = new
javax.swing.JButton();
     btnBack2 = new
javax.swing.JButton();
     jScrollPane1 = new
javax.swing.JScrollPane();
     jTextArea1 = new
javax.swing.JTextArea();
     jLabel2 = new
javax.swing.JLabel();
     jLabel3 = new
javax.swing.JLabel();
     jLabel1 = new
javax.swing.JLabel();
setDefaultCloseOperation(javax.swing
.WindowConstants.EXIT_ON_CLOSE);
     getContentPane().setLayout(new
org.netbeans.lib.awtextra.AbsoluteLa
yout());
     btnExit2.setBackground(new
java.awt.Color(255, 0, 0));
     btnExit2.setFont(new
java.awt.Font("Algerian", 0, 18));
     btnExit2.setForeground(new
java.awt.Color(255, 255, 255));
     btnExit2.setText("EXIT");
     btnExit2.addActionListener(new
java.awt.event.ActionListener() {
        public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
btnExit2ActionPerformed(evt);
        }
     });
     getContentPane().add(btnExit2,
new
```

```
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(1080, 20, -1, -1));
        btnBack2.setBackground(new
java.awt.Color(51, 0, 255));
        btnBack2.setFont(new
java.awt.Font("Algerian", 0, 18));
        btnBack2.setForeground(new
java.awt.Color(255, 255, 255));
        btnBack2.setText("BACK");
        btnBack2.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
btnBack2ActionPerformed(evt);
            }
        });
        getContentPane().add(btnBack2,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(970, 20, -1, -1));
        jTextArea1.setColumns(20);
        jTextArea1.setFont(new
java.awt.Font("Harrington", 2, 18));
        jTextArea1.setRows(5);
        jTextArea1.setText("Problem
Statement:\nThe Max-Min Problem
in algorithm analysis is finding the
maximum and minimum value in an
array.\n\nSolution:\nTo find the
maximum and minimum numbers in a
given array numbers[] of size n, the
following algorithm can be used. First
we are representing \nthe naive
method and then we will present
divide and conquer
approach.\n\nNaïve Method:\nNaïve
method is a basic method to solve
any problem. In this method, the
maximum and minimum number can
be found separately. To find the
\nmaximum and minimum numbers,
the following straightforward
algorithm can be used.\n\nAlgorithm:
Max-Min-Element (numbers[])\nmax
:= numbers[1]\nmin :=
numbers[1]\n\nfor i = 2 to n do\nif
numbers[i] > max then\nmax :=
numbers[i]\nif numbers[i] < min
then\nmin := numbers[i]\nreturn
(max, min)\n\nAnalysis: The number
```

```
of comparison in Naive method is 2n - 2.\nThe number of comparisons can be reduced using the divide and conquer approach. Following is the technique.\n\nDivide and Conquer Approach:\nIn this approach, the array is divided into two halves. Then using recursive approach maximum and minimum numbers in each halves are found. \nLater, return the maximum of two maxima of each half and the minimum of two minima of each half.\n\nIn this given problem, the number of elements in an array is y-x+1, where y is greater than or equal to x.\n\nMaxMin(x,y) will return the maximum and minimum values of an array numbers[x...y].\n");
jScrollPane1.setViewportView(jTextArea1);
getContentPane().add(jScrollPane1, new org.netbeans.lib.awtextra.AbsoluteConstraints(20, 60, 1180, 740));
        jLabel2.setFont(new java.awt.Font("Khmer UI", 1, 24)); // NOI18N
        jLabel2.setForeground(new java.awt.Color(255, 255, 255));
        jLabel2.setText("MAXMIN PROBLEM");
        getContentPane().add(jLabel2, new org.netbeans.lib.awtextra.AbsoluteConstraints(470, 30, 250, -1));
        jLabel3.setFont(new java.awt.Font("Algerian", 1, 24)); // NOI18N
        jLabel3.setForeground(new java.awt.Color(255, 255, 255));
        jLabel3.setText("DAA DIGIBOOK");
        getContentPane().add(jLabel3, new org.netbeans.lib.awtextra.AbsoluteConstraints(10, 20, -1, 40));
        jLabel1.setIcon(new javax.swing.ImageIcon("C:\\Users\\BSURESH KUMAR\\OneDrive\\Desktop\\Dbook.jpeg")); // NOI18N
```

```
      getContentPane().add(jLabel1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(0, 0, 1230, 820));
      setBounds(0, 0, 1184, 829);
   }// </editor-fold>
   private void
btnExit2ActionPerformed(java.awt.ev
ent.ActionEvent evt) {
      JFrame frame = new JFrame();
if(JOptionPane.showConfirmDialog(fr
ame,"Confirm if you want to
Exit","EXIT",
JOptionPane.YES_NO_OPTION)==JOpt
ionPane.YES_NO_OPTION)
   {
      System.exit(0);
      }
here:
   }
   private void
btnBack2ActionPerformed(java.awt.e
vent.ActionEvent evt) {
      this.toBack();
      setVisible(false);
      new Topics().toFront();
      new
Topics().setState(java.awt.Frame.NOR
MAL);
here:
   }
   public static void main(String args[])
{
defaultstate="collapsed" desc=" Look
and feel setting code (optional) ">
      try {
         for
(javax.swing.UIManager.LookAndFeel
Info info :
javax.swing.UIManager.getInstalledLo
okAndFeels()) {
            if
("Nimbus".equals(info.getName())) {
javax.swing.UIManager.setLookAndFe
el(info.getClassName());
               break;
            }
         }
      } catch (ClassNotFoundException
ex) {
java.util.logging.Logger.getLogger(M
```

```
m.class.getName()).log(java.util.loggi
ng.Level.SEVERE, null, ex);
      } catch (InstantiationException
ex) {
java.util.logging.Logger.getLogger(M
m.class.getName()).log(java.util.loggi
ng.Level.SEVERE, null, ex);
      } catch (IllegalAccessException
ex) {
java.util.logging.Logger.getLogger(M
m.class.getName()).log(java.util.loggi
ng.Level.SEVERE, null, ex);
      } catch
(javax.swing.UnsupportedLookAndFe
elException ex) {
java.util.logging.Logger.getLogger(M
m.class.getName()).log(java.util.loggi
ng.Level.SEVERE, null, ex);
      }
java.awt.EventQueue.invokeLater(ne
w Runnable() {
         public void run() {
            new Mm().setVisible(true);
         }
      });
   }
}
public class greedy extends
javax.swing.JFrame {
   public greedy() {
      initComponents();
   }
defaultstate="collapsed"
desc="Generated Code">
   private void initComponents() {
     jLabel3 = new javax.swing.JLabel();
jLabel2 = new
javax.swing.JLabel();
      btnExit3 = new
javax.swing.JButton();
      btnBack3 = new
javax.swing.JButton();
      jScrollPane1 = new
javax.swing.JScrollPane();
      jTextArea1 = new
javax.swing.JTextArea();
      jLabel1 = new
javax.swing.JLabel();
setDefaultCloseOperation(javax.swing
.WindowConstants.EXIT_ON_CLOSE);
```

```
        getContentPane().setLayout(new
org.netbeans.lib.awtextra.AbsoluteLa
yout());
        jLabel3.setFont(new
java.awt.Font("Algerian", 1, 24));
        jLabel3.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel3.setText("DAA
DIGIBOOK");
        getContentPane().add(jLabel3,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(10, 10, -1, 40));
        jLabel2.setFont(new
java.awt.Font("LCDMono2", 1, 36));
        jLabel2.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel2.setText("GREEDY
METHOD");
        getContentPane().add(jLabel2,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(430, 20, 300, -1));
        btnExit3.setBackground(new
java.awt.Color(255, 0, 0));
        btnExit3.setFont(new
java.awt.Font("Algerian", 0, 18)); //
NOI18N
        btnExit3.setForeground(new
java.awt.Color(255, 255, 255));
        btnExit3.setText("EXIT");
        btnExit3.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
btnExit3ActionPerformed(evt);
            }
        });
        getContentPane().add(btnExit3,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(1090, 30, -1, -1));
        btnBack3.setBackground(new
java.awt.Color(51, 0, 255));
        btnBack3.setFont(new
java.awt.Font("Algerian", 0, 18));
        btnBack3.setForeground(new
java.awt.Color(255, 255, 255));
        btnBack3.setText("BACK");
```

```
        btnBack3.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
btnBack3ActionPerformed(evt);
            }
        });
        getContentPane().add(btnBack3,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(970, 30, -1, -1));
        jTextArea1.setColumns(20);
        jTextArea1.setFont(new
java.awt.Font("Harrington", 2, 18));
        jTextArea1.setRows(5);
        jTextArea1.setText("Among all
the algorithmic approaches, the
simplest and straightforward
approach is the Greedy method. In
this approach, the decision is taken
on \nthe basis of current available
information without worrying about
the effect of the current decision in
future.\n\nGreedy algorithms build a
solution part by part, choosing the
next part in such a way, that it gives
an immediate benefit. This approach
never \nreconsiders the choices taken
previously. This approach is mainly
used to solve optimization problems.
Greedy method is easy to implement
and \nquite efficient in most of the
cases. Hence, we can say that Greedy
algorithm is an algorithmic paradigm
based on heuristic that follows local
\noptimalchoice at each step with the
hope of finding global optimal
solution.\n\nComponents of Greedy
Algorithm:\nGreedy algorithms have
the following five components --
\n\nA candidate set -A solution is
created from this set.\n\nA selection
function - Used to choose the best
candidate to be added to the
solution.\n\nA feasibility function -
Used to determine whether a
candidate can be used to contribute
to the solution.\n\nAn objective
function - Used to assign a value to a
solution or a partial solution.\n\nA
```

```
solution function - Used to indicate
whether a complete solution has
been reached.\n\nAreas of
Application:\n1)Greedy approach is
used to solve many problems, such
as\n\n2)Finding the shortest path
between two vertices using Dijkstra's
algorithm.\n\n3)Finding the minimal
spanning tree in a graph using Prim's
/Kruskal's algorithm, etc.\n\nWhere
Greedy Approach Fails:\nIn many
problems, Greedy algorithm fails to
find an optimal solution, moreover it
may produce a worst solution.
Problems like Travelling\nSalesman
and Knapsack cannot be solved using
this approach.\n");
jScrollPane1.setViewportView(jTextAr
ea1);
getContentPane().add(jScrollPane1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(20, 80, 1180, 730));
      jLabel1.setIcon(new
javax.swing.ImageIcon("C:\\Users\\B
SURESH
KUMAR\\OneDrive\\Desktop\\Dbook
.jpeg")); // NOI18N
      getContentPane().add(jLabel1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(-2, 1, 1230, 820));
      setBounds(0, 0, 1184, 829);
   }// </editor-fold>
   private void
btnExit3ActionPerformed(java.awt.ev
ent.ActionEvent evt) {
      JFrame frame = new JFrame();
if(JOptionPane.showConfirmDialog(fr
ame,"Confirm if you want to
Exit","EXIT",
JOptionPane.YES_NO_OPTION)==JOpt
ionPane.YES_NO_OPTION)
   {
      System.exit(0);
      }
   }
   private void
btnBack3ActionPerformed(java.awt.e
vent.ActionEvent evt) {
      this.toBack();
```

```
        setVisible(false);
        new Topics().toFront();
        new
Topics().setState(java.awt.Frame.NOR
MAL);
    }
    public static void main(String args[])
{
defaultstate="collapsed" desc=" Look
and feel setting code (optional) ">
{
          for
(javax.swing.UIManager.LookAndFeel
Info info :
javax.swing.UIManager.getInstalledLo
okAndFeels()) {
              if
("Nimbus".equals(info.getName())) {
javax.swing.UIManager.setLookAndFe
el(info.getClassName());
                  break;
              }
          }
      } catch (ClassNotFoundException
ex) {
java.util.logging.Logger.getLogger(gre
edy.class.getName()).log(java.util.logg
ing.Level.SEVERE, null, ex);
      } catch (InstantiationException
ex) {
java.util.logging.Logger.getLogger(gre
edy.class.getName()).log(java.util.logg
ing.Level.SEVERE, null, ex);
      } catch (IllegalAccessException
ex) {
java.util.logging.Logger.getLogger(gre
edy.class.getName()).log(java.util.logg
ing.Level.SEVERE, null, ex);
      } catch
(javax.swing.UnsupportedLookAndFe
elException ex) {
java.util.logging.Logger.getLogger(gre
edy.class.getName()).log(java.util.logg
ing.Level.SEVERE, null, ex); }
java.awt.EventQueue.invokeLater(ne
w Runnable() {
          public void run() {
              new
greedy().setVisible(true);
          }
      });
```

```
    }
}
public class Knapsack extends
javax.swing.JFrame {
Knapsack() {
        initComponents();
    }
defaultstate="collapsed"
desc="Generated Code">
    private void initComponents() {

        jLabel3 = new
javax.swing.JLabel();
        jLabel2 = new
javax.swing.JLabel();
        btnExit4 = new
javax.swing.JButton();
        btnBack4 = new
javax.swing.JButton();
        jScrollPane1 = new
javax.swing.JScrollPane();
        jTextArea1 = new
javax.swing.JTextArea();
        jLabel1 = new
javax.swing.JLabel();
setDefaultCloseOperation(javax.swing
.WindowConstants.EXIT_ON_CLOSE);
        getContentPane().setLayout(new
org.netbeans.lib.awtextra.AbsoluteLa
yout());
        jLabel3.setFont(new
java.awt.Font("Algerian", 1, 24));
        jLabel3.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel3.setText("DAA
DIGIBOOK");
        getContentPane().add(jLabel3,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(10, 10, -1, 40));
        jLabel2.setFont(new
java.awt.Font("LCDMono2", 1, 36));
        jLabel2.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel2.setText("FRACTIONAL
KNAPSACK");
        getContentPane().add(jLabel2,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(390, 20, 420, -1));
```

```
        btnExit4.setBackground(new
java.awt.Color(255, 0, 0));
        btnExit4.setFont(new
java.awt.Font("Algerian", 0, 18)); //
NOI18N
        btnExit4.setForeground(new
java.awt.Color(255, 255, 255));
        btnExit4.setText("EXIT");
        btnExit4.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {

btnExit4ActionPerformed(evt);
            }
        });
        getContentPane().add(btnExit4,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(1090, 30, -1, -1));
        btnBack4.setBackground(new
java.awt.Color(51, 0, 255));
        btnBack4.setFont(new
java.awt.Font("Algerian", 0, 18)); //
NOI18N
        btnBack4.setForeground(new
java.awt.Color(255, 255, 255));
        btnBack4.setText("BACK");
        btnBack4.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {
btnBack4ActionPerformed(evt);
            }
        });
        getContentPane().add(btnBack4,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(970, 30, -1, -1));
        jTextArea1.setColumns(20);
        jTextArea1.setFont(new
java.awt.Font("Harrington", 2, 18)); //
NOI18N
        jTextArea1.setRows(5);
        jTextArea1.setText("Knapsack
Problem\nGiven a set of items, each
with a weight and a value, determine
a subset of items to include in a
collection so that the total weight is
```

```
less than or\nequal to a given limit and the total value is as large as possible.\n\nThe knapsack problem is in combinatorial optimization problem. It appears as a subproblem in many, more complex mathematical models of real-\nworld problems. One general approach to difficult problems is to identify the most restrictive constraint, ignore the others, solve a knapsack \nproblem, and somehow adjust the solution to satisfy the ignored constraints.\n\nApplications:\nIn many cases of resource allocation along with some constraint, the problem can be derived in a similar way of Knapsack problem. Following is\n a set of example.\n1.Finding the least wasteful way to cut raw materials\n2.portfolio optimization\n3/Cutting stock problems\nProblem Scenario:\nA thief is robbing a store and can carry a maximal weight of W into his knapsack. There are n items available in the store and weight of ith item \nis wi and its profit is pi. What items should the thief take?\n\nFractional Knapsack\nIn this case, items can be broken into smaller pieces, hence the thief can select fractions of items.\nAccording to the problem statement, There are n items in the store\n\nWeight of ith item wi>0\nProfit for ith item pi>0 and\n\nCapacity of the Knapsack is W\n\nIn this version of Knapsack problem, items can be broken into smaller pieces. So, the thief may take only a fraction xi of ith item.\n");
jScrollPane1.setViewportView(jTextArea1);
getContentPane().add(jScrollPane1, new org.netbeans.lib.awtextra.AbsoluteConstraints(20, 80, 1180, 730));
        jLabel1.setIcon(new javax.swing.ImageIcon("C:\\Users\\BSURESH
```

```
KUMAR\\OneDrive\\Desktop\\Dbook
.jpeg")); // NOI18N
      getContentPane().add(jLabel1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(-2, 1, 1230, 820));
      setBounds(0, 0, 1184, 829);
   }// </editor-fold>
   private void
btnExit4ActionPerformed(java.awt.ev
ent.ActionEvent evt) {
      JFrame frame = new JFrame();
if(JOptionPane.showConfirmDialog(fr
ame,"Confirm if you want to
Exit","EXIT",
JOptionPane.YES_NO_OPTION)==JOpt
ionPane.YES_NO_OPTION)
   {
      System.exit(0);
      }
here:
   }
   private void
btnBack4ActionPerformed(java.awt.e
vent.ActionEvent evt) {
      this.toBack();
      setVisible(false);
      new Topics().toFront();
      new
Topics().setState(java.awt.Frame.NOR
MAL);
here:
   }
   public static void main(String args[])
{
defaultstate="collapsed" desc=" Look
and feel setting code (optional) ">
      try {
         for
(javax.swing.UIManager.LookAndFeel
Info info :
javax.swing.UIManager.getInstalledLo
okAndFeels()) {
            if
("Nimbus".equals(info.getName())) {

javax.swing.UIManager.setLookAndFe
el(info.getClassName());
               break;
            }
         }
```

```
        } catch (ClassNotFoundException
ex) {
java.util.logging.Logger.getLogger(Kna
psack.class.getName()).log(java.util.lo
gging.Level.SEVERE, null, ex);
        } catch (InstantiationException
ex) {
java.util.logging.Logger.getLogger(Kna
psack.class.getName()).log(java.util.lo
gging.Level.SEVERE, null, ex);
        } catch (IllegalAccessException
ex) {
java.util.logging.Logger.getLogger(Kna
psack.class.getName()).log(java.util.lo
gging.Level.SEVERE, null, ex);
        } catch
(javax.swing.UnsupportedLookAndFe
elException ex) {
java.util.logging.Logger.getLogger(Kna
psack.class.getName()).log(java.util.lo
gging.Level.SEVERE, null, ex);
        }
java.awt.EventQueue.invokeLater(ne
w Runnable() {
            public void run() {
                new
Knapsack().setVisible(true);
            }
        });
    }
}
public class Jsd extends
javax.swing.JFrame {
    public Jsd() {
        initComponents();
    }
defaultstate="collapsed"
desc="Generated Code">
    private void initComponents() {

        jLabel3 = new
javax.swing.JLabel();
        jLabel2 = new
javax.swing.JLabel();
        btnExit5 = new
javax.swing.JButton();
        btnBack5 = new
javax.swing.JButton();
        jScrollPane1 = new
javax.swing.JScrollPane();
```

```
        jTextArea1 = new
javax.swing.JTextArea();
        jLabel1 = new
javax.swing.JLabel();
setDefaultCloseOperation(javax.swing
.WindowConstants.EXIT_ON_CLOSE);
        getContentPane().setLayout(new
org.netbeans.lib.awtextra.AbsoluteLa
yout());
        jLabel3.setFont(new
java.awt.Font("Algerian", 1, 24));
        jLabel3.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel3.setText("DAA
DIGIBOOK");
        getContentPane().add(jLabel3,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(10, 10, -1, 40));
        jLabel2.setFont(new
java.awt.Font("LCDMono2", 1, 24));
        jLabel2.setForeground(new
java.awt.Color(255, 255, 255));
        jLabel2.setText("JOB
SEQUENCING DEADLINE");
        getContentPane().add(jLabel2,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(450, 20, 310, -1));
        btnExit5.setBackground(new
java.awt.Color(255, 0, 0));
        btnExit5.setFont(new
java.awt.Font("Algerian", 0, 18));
        btnExit5.setForeground(new
java.awt.Color(255, 255, 255));
        btnExit5.setText("EXIT");
        btnExit5.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {

btnExit5ActionPerformed(evt);
            }
        });
        getContentPane().add(btnExit5,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(1080, 20, -1, -1));
```

```
        btnBack5.setBackground(new
java.awt.Color(51, 0, 255));
        btnBack5.setFont(new
java.awt.Font("Algerian", 0, 18)); //
NOI18N
        btnBack5.setForeground(new
java.awt.Color(255, 255, 255));
        btnBack5.setText("BACK");
        btnBack5.addActionListener(new
java.awt.event.ActionListener() {
            public void
actionPerformed(java.awt.event.Acti
onEvent evt) {

btnBack5ActionPerformed(evt);
            }
        });
        getContentPane().add(btnBack5,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(970, 20, -1, -1));
        jTextArea1.setColumns(20);
        jTextArea1.setFont(new
java.awt.Font("Harrington", 2, 18));
        jTextArea1.setRows(5);
jTextArea1.setText("Problem
Statement:\nIn job sequencing
problem, the objective is to find a
sequence of jobs, which is completed
within their deadlines and gives
maximum profit.\n\nSolution:\nLet
us consider, a set of n given jobs
which are associated with deadlines
and profit is earned, if a job is
completed by its deadline. These jobs
\nneed to be ordered in such a way
that there is maximum profit.\nIt
may happen that all of the given jobs
may not be completed within their
deadlines.\nAssume, deadline of ith
job Ji is di and the profit received
from this job is pi. Hence, the optimal
solution of this algorithm is a feasible
solution with\nmaximum
profit.\n\nThus, D(i)>0 for 1<=i<=n
.\nInitially, these jobs are ordered
according to profit, i.e.
p1>=p2>=p3>=...>=pn.\n\nAlgorithm:
Job-Sequencing-With-Deadline (D, J,
n, k)\nD(0) := J(0) := 0\nk := 1\nJ(1) :=
1 // means first job is selected\nfor i
```

```
= 2 … n do\nr := k\nwhile D(J(r)) > D(i)
and D(J(r)) ≠ r do\nr := r – 1\nif D(J(r))
≤ D(i) and D(i) > r then\nfor l = k … r +
1 by -1 do\nJ(l + 1) := J(l)\nJ(r + 1) :=
i\nk := k + 1\n\nAnalysis:\n\nIn this
algorithm, we are using two loops,
one is within another. Hence, the
complexity of this algorithm is
O(n2).");
jScrollPane1.setViewportView(jTextAr
ea1);
getContentPane().add(jScrollPane1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(20, 70, 1180, 730));
      jLabel1.setIcon(new
javax.swing.ImageIcon("C:\\Users\\B
SURESH
KUMAR\\OneDrive\\Desktop\\Dbook
.jpeg")); // NOI18N
      getContentPane().add(jLabel1,
new
org.netbeans.lib.awtextra.AbsoluteCo
nstraints(-2, 1, 1240, 810));
      setBounds(0, 0, 1184, 829);
   }// </editor-fold>
   private void
btnExit5ActionPerformed(java.awt.ev
ent.ActionEvent evt) {
      JFrame frame = new JFrame();
if(JOptionPane.showConfirmDialog(fr
ame,"Confirm if you want to
Exit","EXIT",
JOptionPane.YES_NO_OPTION)==JOpt
ionPane.YES_NO_OPTION)
   {
      System.exit(0);
      }
   }
   private void
btnBack5ActionPerformed(java.awt.e
vent.ActionEvent evt) {
      this.toBack();
      setVisible(false);
      new Topics().toFront();
      new
Topics().setState(java.awt.Frame.NOR
MAL);
here:
   }
```

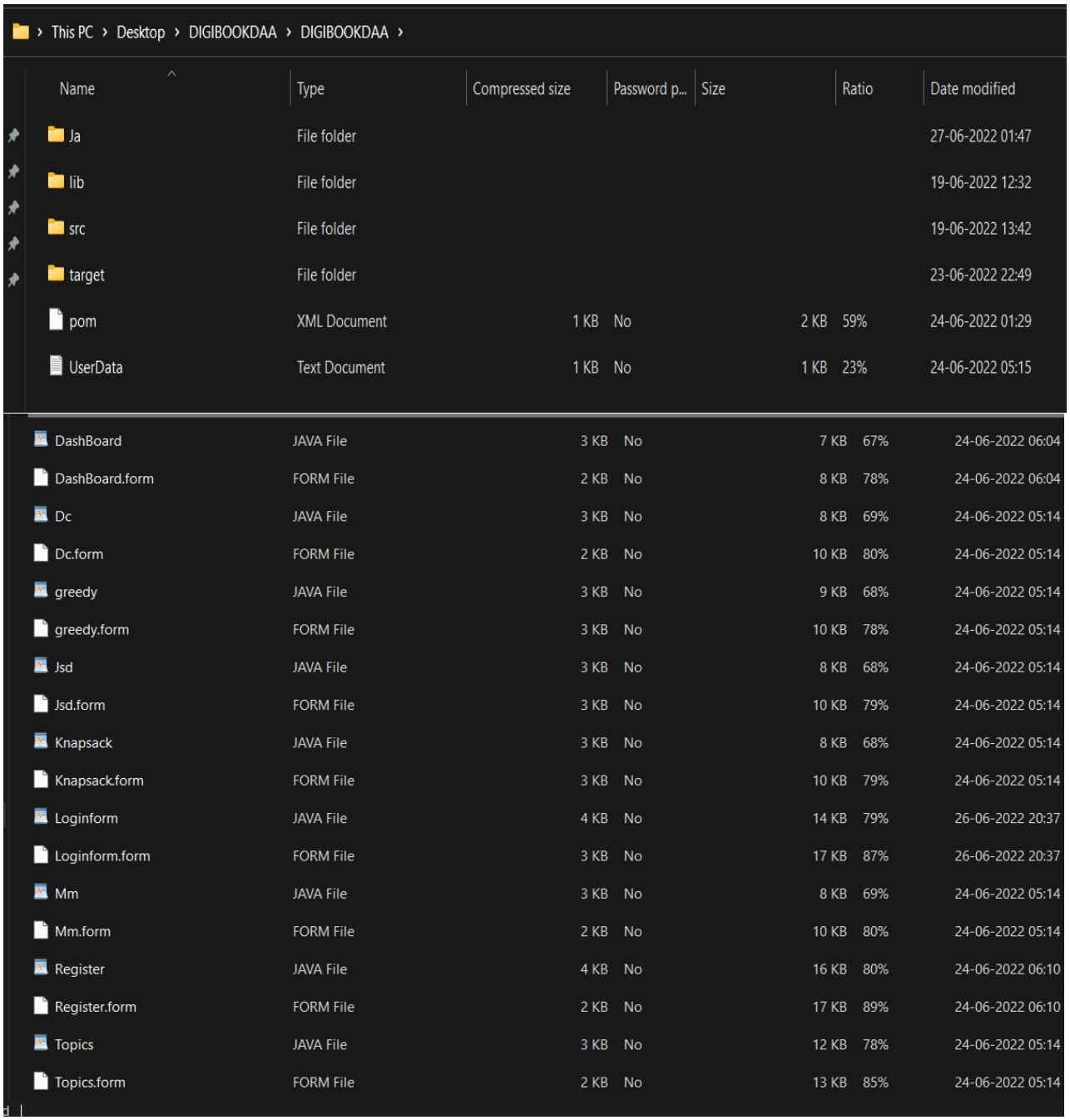
```
   public static void main(String args[])
{
defaultstate="collapsed" desc=" Look
and feel setting code (optional) ">
      try {
         for
(javax.swing.UIManager.LookAndFeel
Info info :
javax.swing.UIManager.getInstalledLo
okAndFeels()) {
            if
("Nimbus".equals(info.getName())) {

javax.swing.UIManager.setLookAndFe
el(info.getClassName());
               break;
            }
         }
      } catch (ClassNotFoundException
ex) {

java.util.logging.Logger.getLogger(Jsd.
class.getName()).log(java.util.logging.
Level.SEVERE, null, ex);
      } catch (InstantiationException
ex) {
java.util.logging.Logger.getLogger(Jsd.
class.getName()).log(java.util.logging.
Level.SEVERE, null, ex);
      } catch (IllegalAccessException
ex) {
java.util.logging.Logger.getLogger(Jsd.
class.getName()).log(java.util.logging.
Level.SEVERE, null, ex);
      } catch
(javax.swing.UnsupportedLookAndFe
elException ex) {
java.util.logging.Logger.getLogger(Jsd.
class.getName()).log(java.util.logging.
Level.SEVERE, null, ex);
      }
java.awt.EventQueue.invokeLater(ne
w Runnable() {
         public void run() {
            new Jsd().setVisible(true);
         }
      });
   }
}
```

Main:

```
public class Main {

	public static void main(String[] args) {
		new Loginform();

	}

}
```

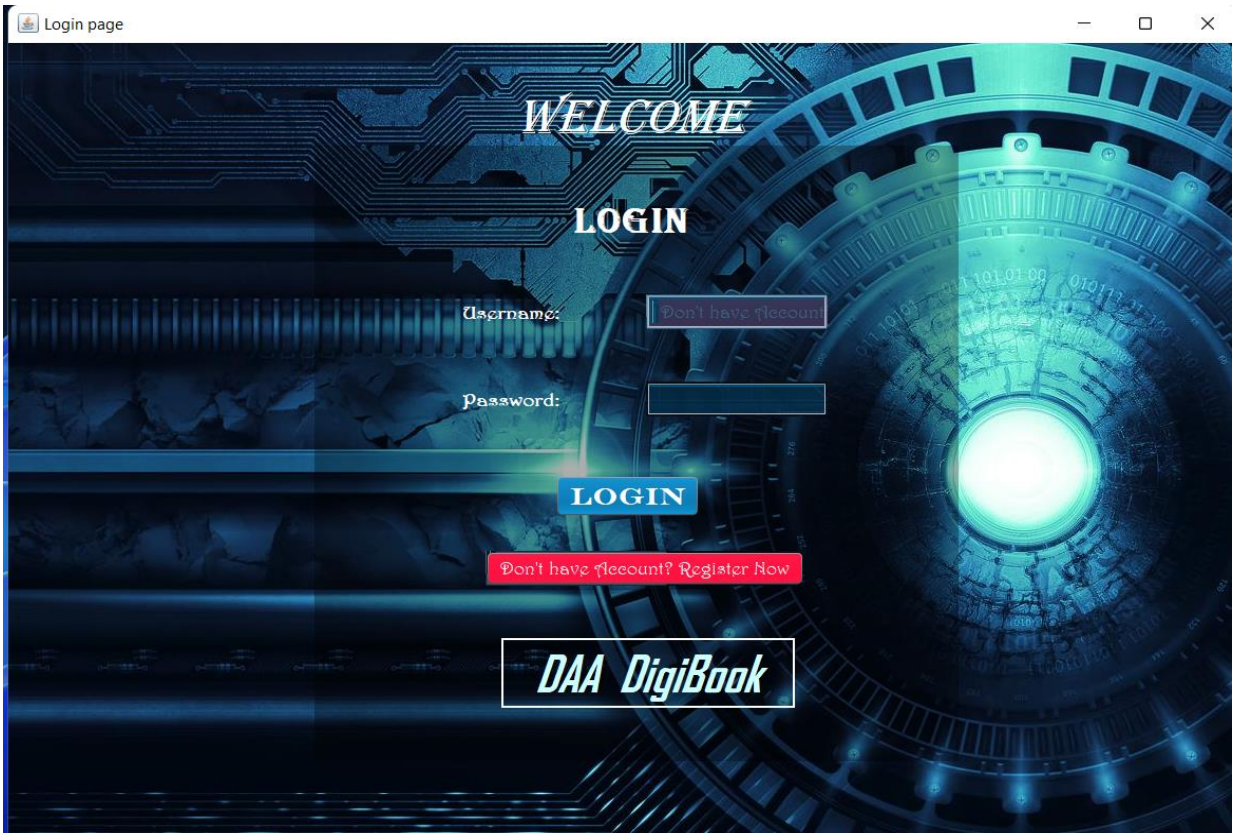
GitHub links and folder structure:

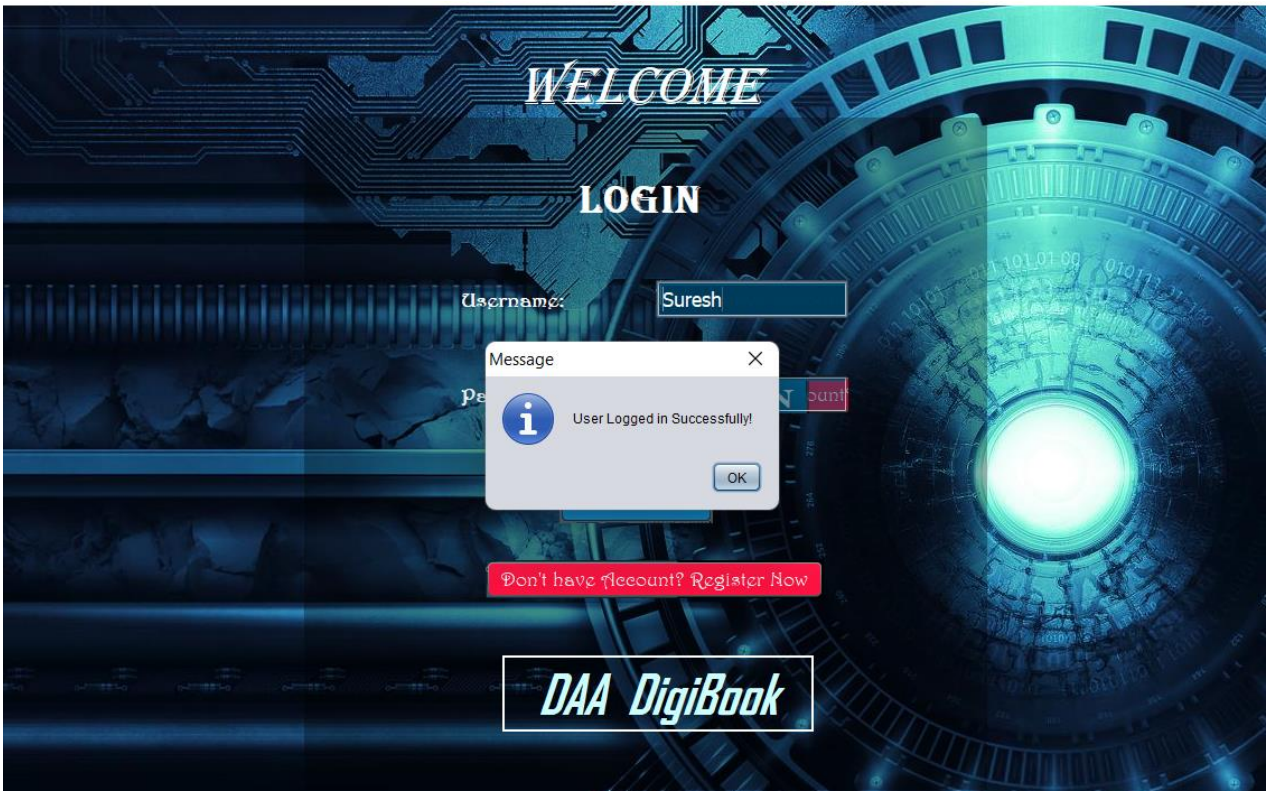
https://1602-20-737-051suresh.github.io/DBMS-PROJECT/

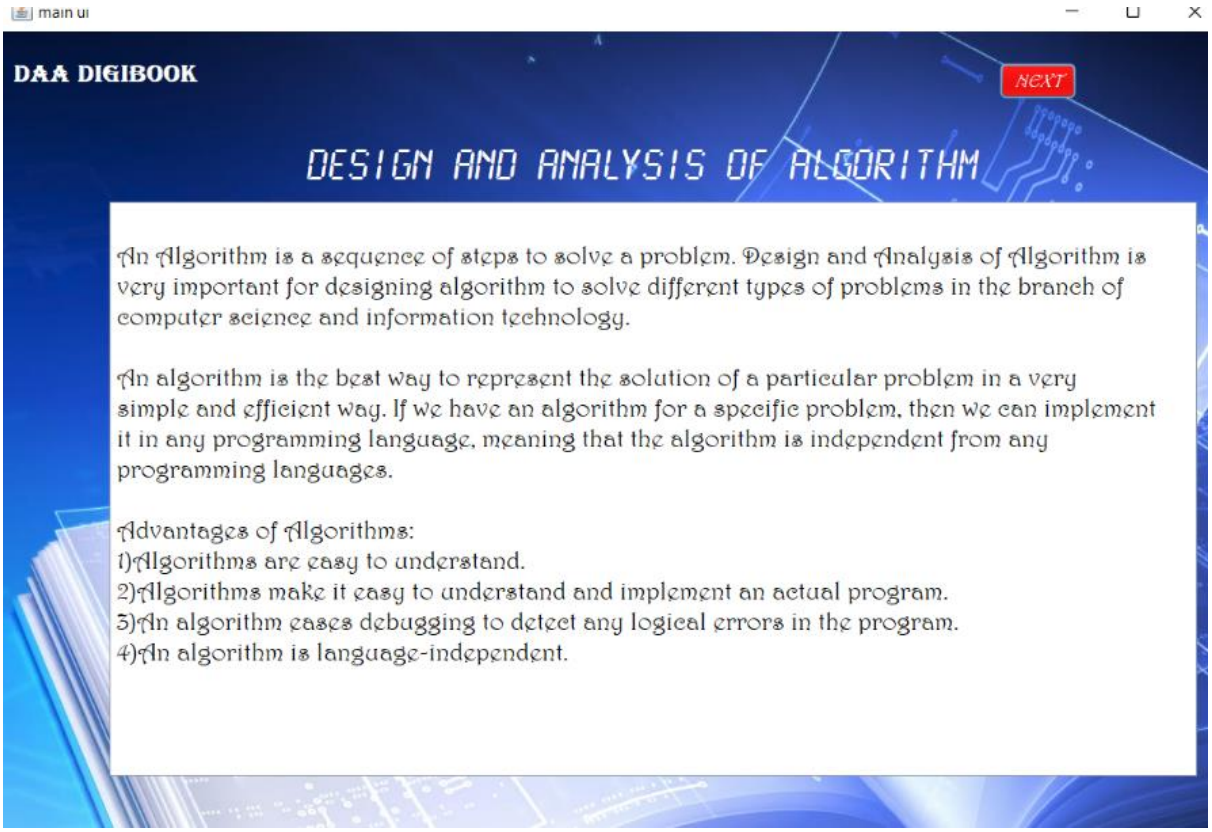


Testing:

Java GUI Testing:

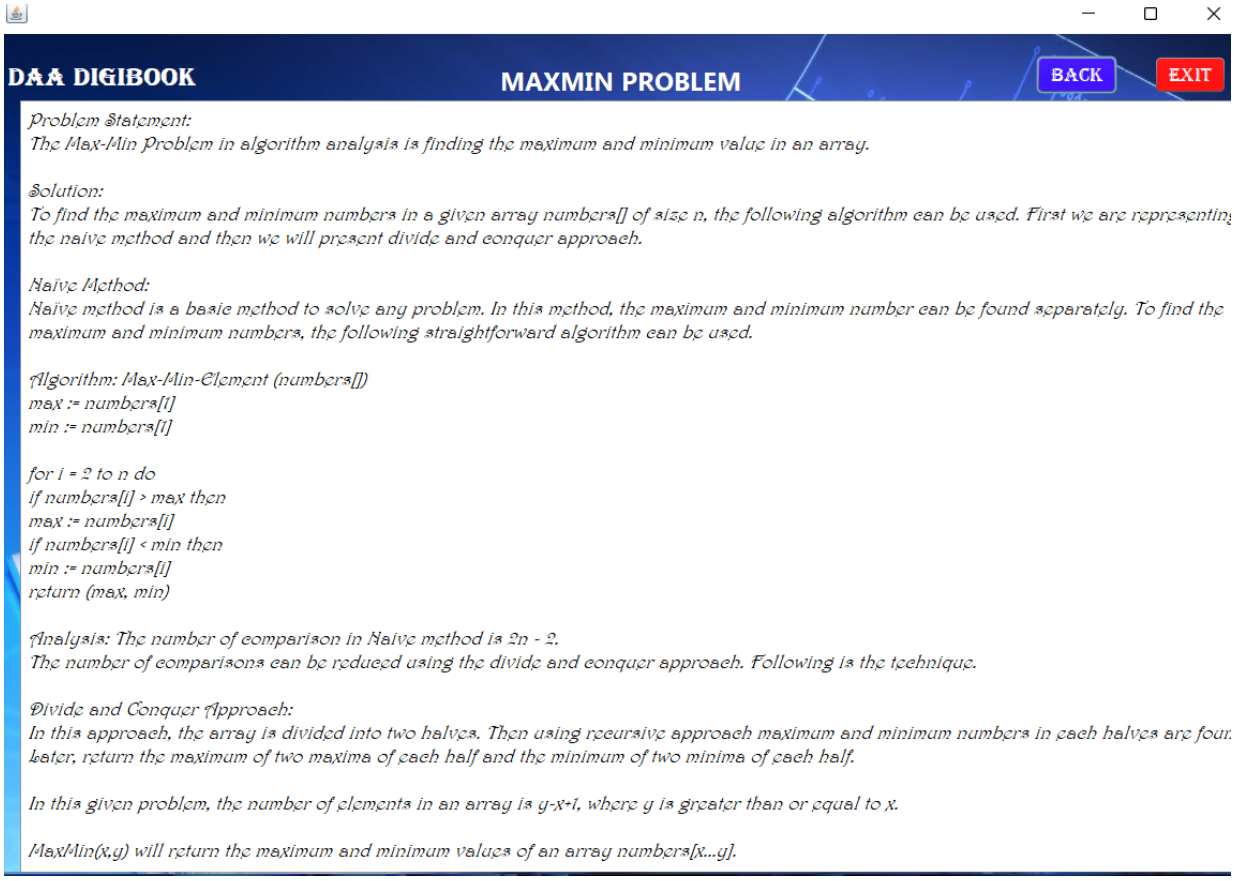


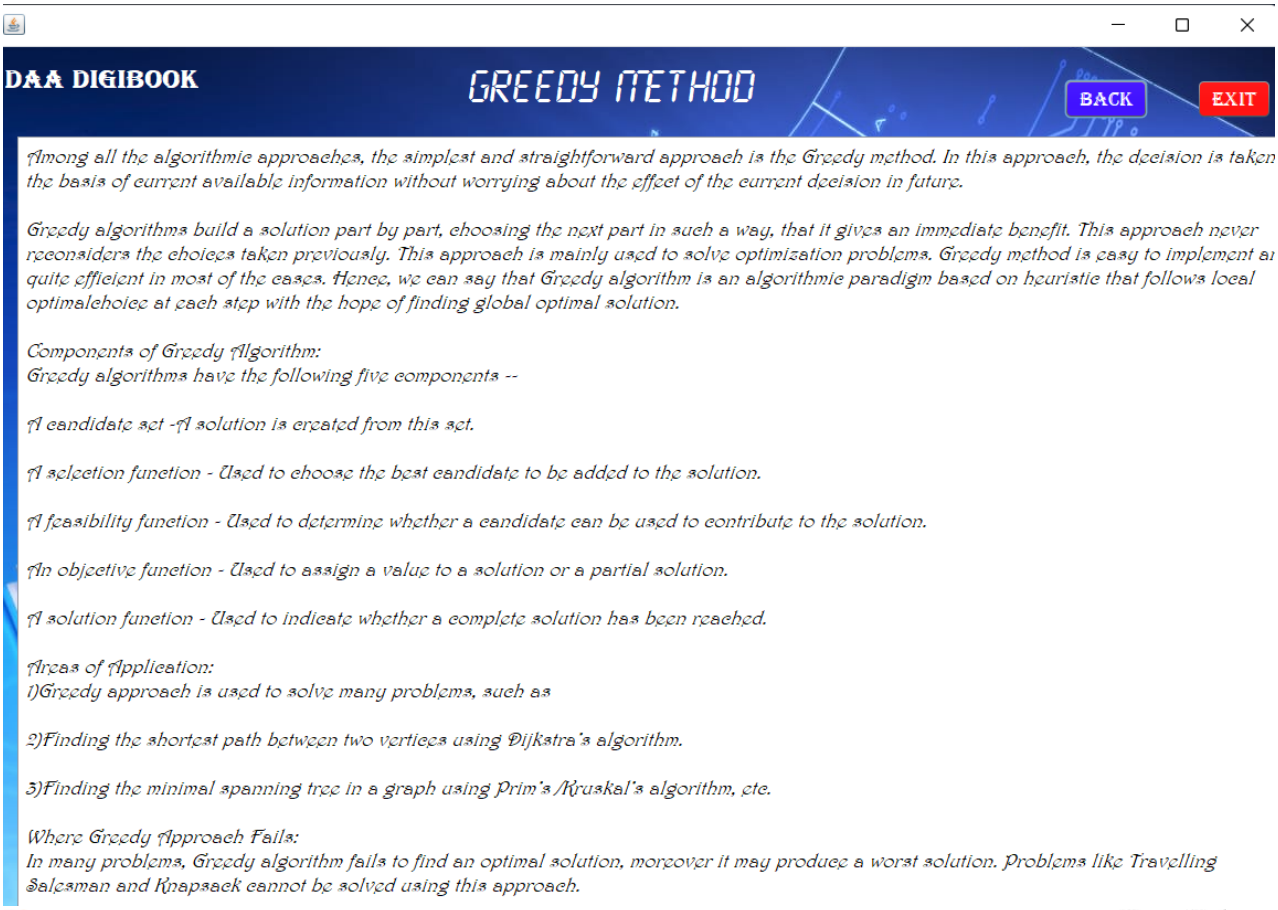


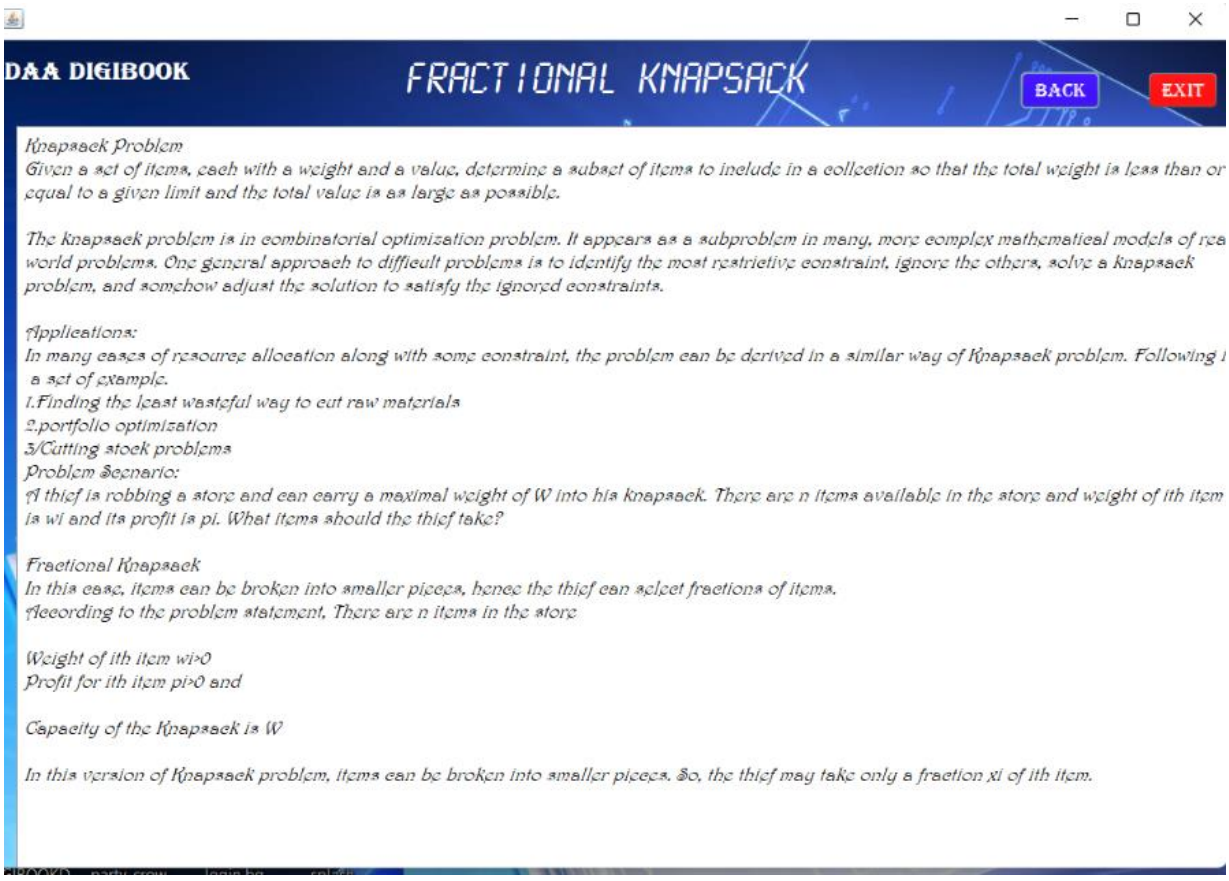

main ui
DAA DIGIBOOK
NEXT
DESIGN AND ANALYSIS OF ALGORITHM
An Algorithm is a sequence of steps to solve a problem. Design and Analysis of Algorithm is very important for designing algorithm to solve different types of problems in the branch of computer science and information technology.
An algorithm is the best way to represent the solution of a particular problem in a very simple and efficient way. If we have an algorithm for a specific problem, then we can implement it in any programming language, meaning that the algorithm is independent from any programming languages.
Advantages of Algorithms:
1)Algorithms are easy to understand.
2)Algorithms make it easy to understand and implement an actual program.
3)An algorithm eases debugging to detect any logical errors in the program.
4)An algorithm is language-independent.

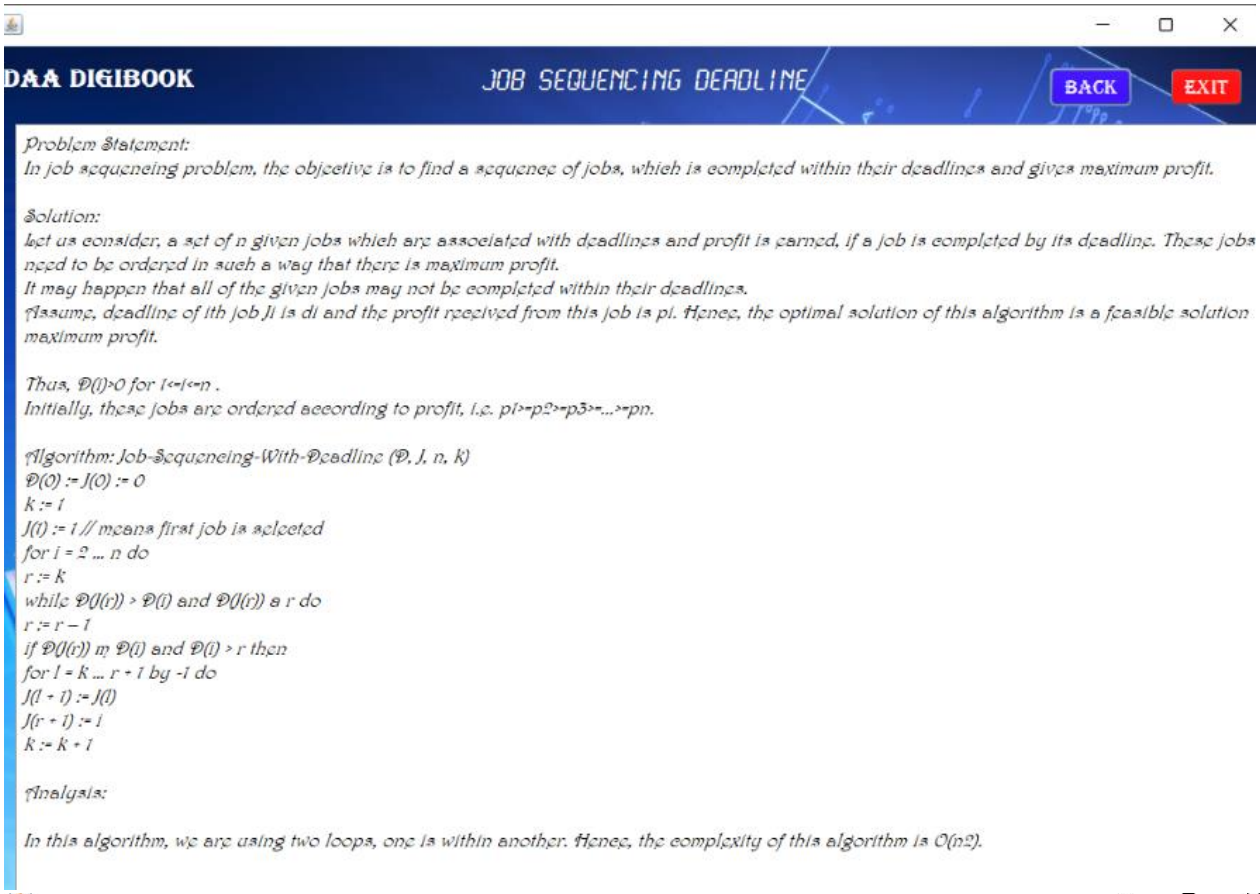

DAA DIGIBOOK
EXIT
DAA ALGORITHMS
DIVIDE&CONQUER
MAXIMIN PROBLEM
GREEDY METHOD
FRACTIONAL KNAPSACK
JOB SEQUENCING DEADLINE

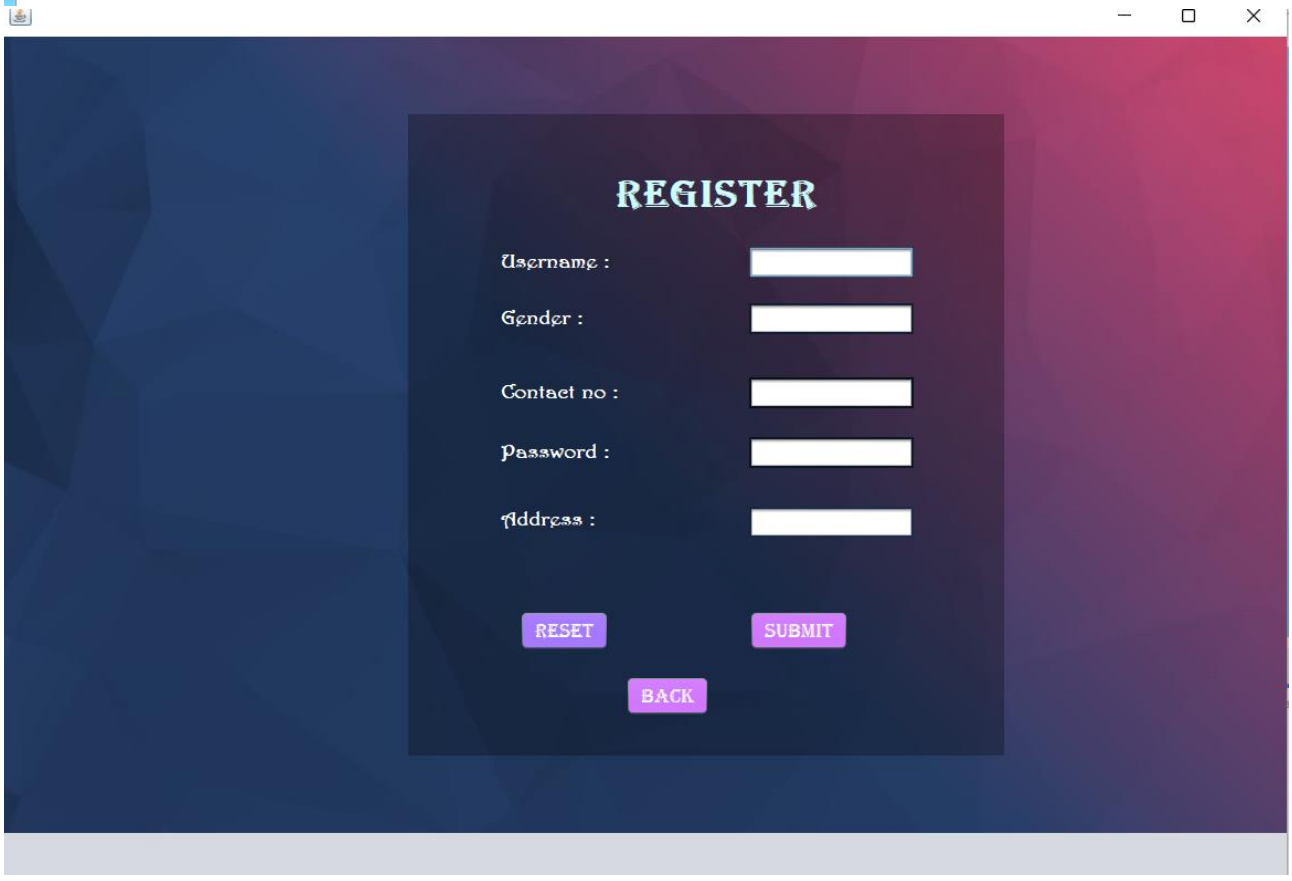

DAA DIGIBOOK
DIVIDE AND CONQUER
BACK
EXIT
In divide and conquer approach, a problem is divided into smaller problems, then the smaller problems are solved independently, and finally the solutions of smaller problems are combined into a solution for the large problem.
Generally, divide-and-conquer algorithms have three parts -
1)Divide the problem into a number of sub-problems that are smaller instances of the same problem.
2)Conquer the sub-problems by solving them recursively. If they are small enough, solve the sub-problems as base cases.
3)Combine the solutions to the sub-problems into the solution for the original problem.
Pros and cons of Divide and Conquer Approach:
Divide and conquer approach supports parallelism as sub-problems are independent. Hence, an algorithm, which is designed using this techn
can run on the multiprocessor system or in different machines simultaneously.
In this approach, most of the algorithms are designed using recursion, hence memory management is very high. For recursive function stack is
where function state needs to be stored.
Application of Divide and Conquer Approach:
Following are some problems, which are solved using divide and conquer approach.
1)Finding the maximum and minimum of a sequence of numbers
2)Strassen's matrix multiplication
3)Merge sort
4)Binary search

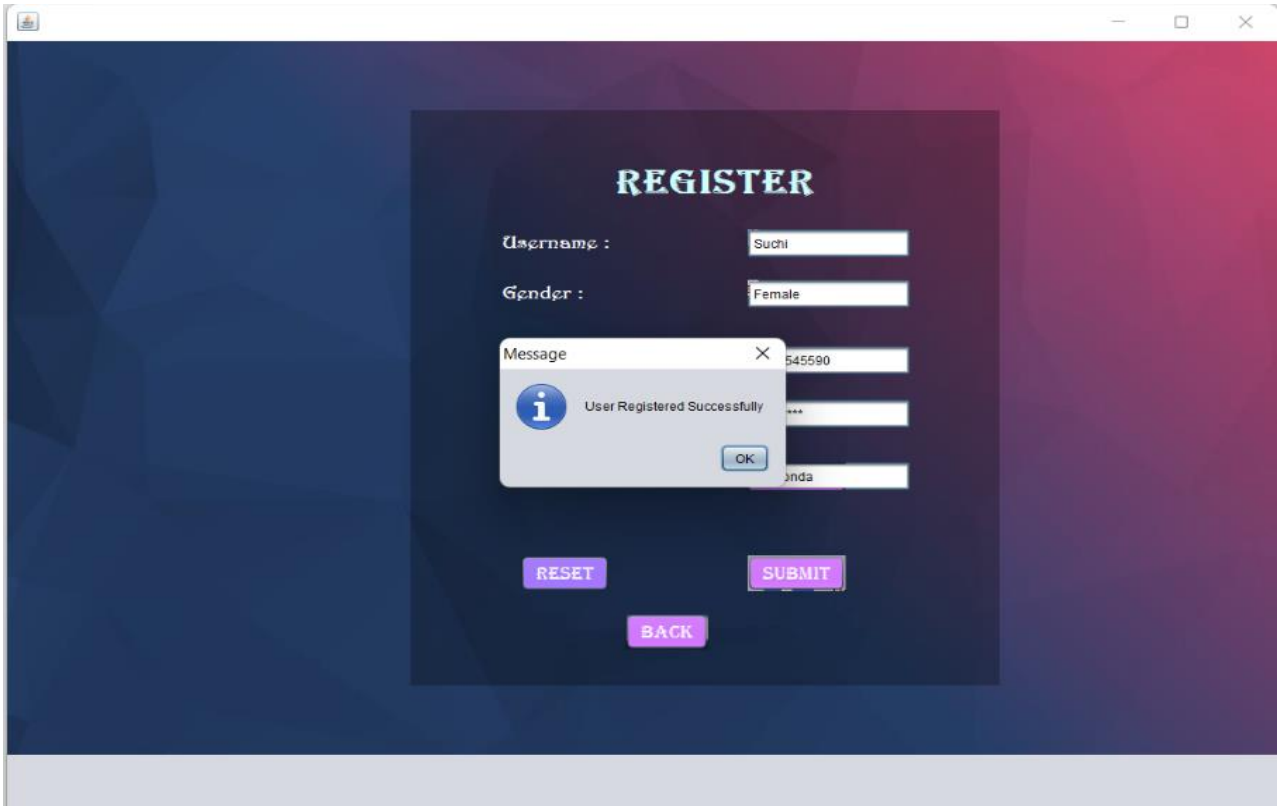

DAA DIGIBOOK
MAXMIN PROBLEM
BACK
EXIT
Problem Statement:
The Max-Min Problem in algorithm analysis is finding the maximum and minimum value in an array.
Solution:
To find the maximum and minimum numbers in a given array numbers[] of size n, the following algorithm can be used. First we are representing
the naive method and then we will present divide and conquer approach.
Naive Method:
Naive method is a basic method to solve any problem. In this method, the maximum and minimum number can be found separately. To find the
maximum and minimum numbers, the following straightforward algorithm can be used.
Algorithm: Max-Min-Element (numbers[])
max := numbers[1]
min := numbers[1]
for i = 2 to n do
if numbers[i] > max then
max := numbers[i]
if numbers[i] < min then
min := numbers[i]
return (max, min)
Analysis: The number of comparison in Naive method is 2n - 2.
The number of comparisons can be reduced using the divide and conquer approach. Following is the technique.
Divide and Conquer Approach:
In this approach, the array is divided into two halves. Then using recursive approach maximum and minimum numbers in each halves are foun
Later, return the maximum of two maxima of each half and the minimum of two minima of each half.
In this given problem, the number of elements in an array is y-x+1, where y is greater than or equal to x.
MaxMin(x,y) will return the maximum and minimum values of an array numbers[x...y].


DAA DIGIBOOK
GREEDY METHOD
BACK
EXIT
Among all the algorithmic approaches, the simplest and straightforward approach is the Greedy method. In this approach, the decision is taken the basis of current available information without worrying about the effect of the current decision in future.
Greedy algorithms build a solution part by part, choosing the next part in such a way, that it gives an immediate benefit. This approach never reconsiders the choices taken previously. This approach is mainly used to solve optimization problems. Greedy method is easy to implement a quite efficient in most of the cases. Hence, we can say that Greedy algorithm is an algorithmic paradigm based on heuristic that follows local optimalchoice at each step with the hope of finding global optimal solution.
Components of Greedy Algorithm:
Greedy algorithms have the following five components --
A candidate set -A solution is created from this set.
A selection function - Used to choose the best candidate to be added to the solution.
A feasibility function - Used to determine whether a candidate can be used to contribute to the solution.
An objective function - Used to assign a value to a solution or a partial solution.
A solution function - Used to indicate whether a complete solution has been reached.
Areas of Application:
1)Greedy approach is used to solve many problems, such as
2)Finding the shortest path between two vertices using Dijkstra's algorithm.
3)Finding the minimal spanning tree in a graph using Prim's /Kruskal's algorithm, etc.
Where Greedy Approach Fails:
In many problems, Greedy algorithm fails to find an optimal solution, moreover it may produce a worst solution. Problems like Travelling Salesman and Knapsack cannot be solved using this approach.


DAA DIGIBOOK
FRACTIONAL KNAPSACK
BACK
EXIT
Knapsack Problem
Given a set of items, each with a weight and a value, determine a subset of items to include in a collection so that the total weight is less than or equal to a given limit and the total value is as large as possible.
The knapsack problem is in combinatorial optimization problem. It appears as a subproblem in many, more complex mathematical models of rea world problems. One general approach to difficult problems is to identify the most restrictive constraint, ignore the others, solve a knapsack problem, and somehow adjust the solution to satisfy the ignored constraints.
Applications:
In many cases of resource allocation along with some constraint, the problem can be derived in a similar way of Knapsack problem. Following i a set of example.
1.Finding the least wasteful way to cut raw materials
2.portfolio optimization
3/Cutting stock problems
Problem Scenario:
A thief is robbing a store and can carry a maximal weight of W into his knapsack. There are n items available in the store and weight of ith item is wi and its profit is pi. What items should the thief take?
Fractional Knapsack
In this case, items can be broken into smaller pieces, hence the thief can select fractions of items.
According to the problem statement, There are n items in the store
Weight of ith item wi>0
Profit for ith item pi>0 and
Capacity of the Knapsack is W
In this version of Knapsack problem, items can be broken into smaller pieces. So, the thief may take only a fraction xi of ith item.


DAA DIGIBOOK
JOB SEQUENCING DEADLINE
BACK
EXIT
Problem Statement:
In job sequencing problem, the objective is to find a sequence of jobs, which is completed within their deadlines and gives maximum profit.
Solution:
Let us consider, a set of n given jobs which are associated with deadlines and profit is earned, if a job is completed by its deadline. These jobs need to be ordered in such a way that there is maximum profit.
It may happen that all of the given jobs may not be completed within their deadlines.
Assume, deadline of ith job Ji is di and the profit received from this job is pi. Hence, the optimal solution of this algorithm is a feasible solution maximum profit.
Thus, D(i)>0 for 1<=i<=n .
Initially, these jobs are ordered according to profit, i.e. p1>=p2>=p3>=...>=pn.
Algorithm: Job-Sequencing-With-Deadline (D, J, n, k)
D(0) := J(0) := 0
k := 1
J(1) := 1 // means first job is selected
for i = 2 ... n do
r := k
while D(J(r)) > D(i) and D(J(r)) ≠ r do
r := r – 1
if D(J(r)) = D(i) and D(i) > r then
for l = k ... r + 1 by -1 do
J(l + 1) := J(l)
J(r + 1) := i
k := k + 1
Analysis:
In this algorithm, we are using two loops, one is within another. Hence, the complexity of this algorithm is O(n2).


REGISTER
Username :
Gender :
Contact no :
Password :
Address :
RESET
SUBMIT
BACK



The data entered in the above form is updated in the "Login and Register" table of the Oracle database 11g as:

```
SQL> select * from Loginform
  2  ;

USERNAME              PASSWORD
--------------------- --------------------
Suresh                Skipper
Rakesh                raki
Srujan                Sruj
Anjan                 Editor

SQL> select * from Register;

USERNAME              GENDER    CONTACT_NO PASSWORD
--------------------- -------- ---------- --------------------
ADDRESS
---------------------
Anjan                 Male      9876543210 Editor
Hyd

Srujan                Male       123456789 Sruj
Hyd

Rakesh                Male      9052545590 Raki
Hyd


USERNAME              GENDER    CONTACT_NO PASSWORD
--------------------- -------- ---------- --------------------
ADDRESS
---------------------
Srujan                Male      8765432109 Skipper
Nalgonda


SQL>
```

Results:

I successfully completed this DBMS PROJECT “DAA DIGIBOOK”.

Discussion and Future work

While doing this project I got new ideas I understood how to work on projects. Now to further extend this project I want to create a android app by which I can control my project on my hand and connect to it.

References:

- https://www.academia.edu/36893248/Ramakrishnan_-_Database_Management_Systems_3rd_Edition
- https://docs.oracle.com/javase/7/docs/index.html
- https://www.javatpoint.com/dbms-tutorial
- http://www.sqlines.com/articles/java/sql_server_jdbc_connection
- https://netbeans.apache.org/