JAVA SWING BASED –
THE DIGITAL IMAGINARY
-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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Under the Guidance of

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2021-2022

BONAFIDE CERTIFICATE

This to Certify that the project report titled **"THE DIGITAL IMAGINARY"** project work of Mr.Lithin Sai Ram bearing Roll.no:1602-20-737-040 who carried out this project under my supervision in the IV semester for the academic year 2020-2021.

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

THE DIGITAL IMAGINARY

ASSIGNMENT 1

1602-20-737-022

J. Lithin sai ram

ABSTRACT:

This study aimed to develop a model to examine how digital technology integration contributes to the enhancement of students' academic performance through project-based learning (PBL) amongst undergraduates in higher education. In this study, the technology acceptance model (TAM) was used as the basic model to explore the digital technology environment in terms of the perceived usefulness, perceived ease of use and attitude towards integrating digital technology and the influence of these factors on undergraduates' learning engagement and academic performance within PBL.

REQUIREMENT ANALYSIS:

LIST OF TABLES:

1. Digital_devices
2. Students
3. Faculity

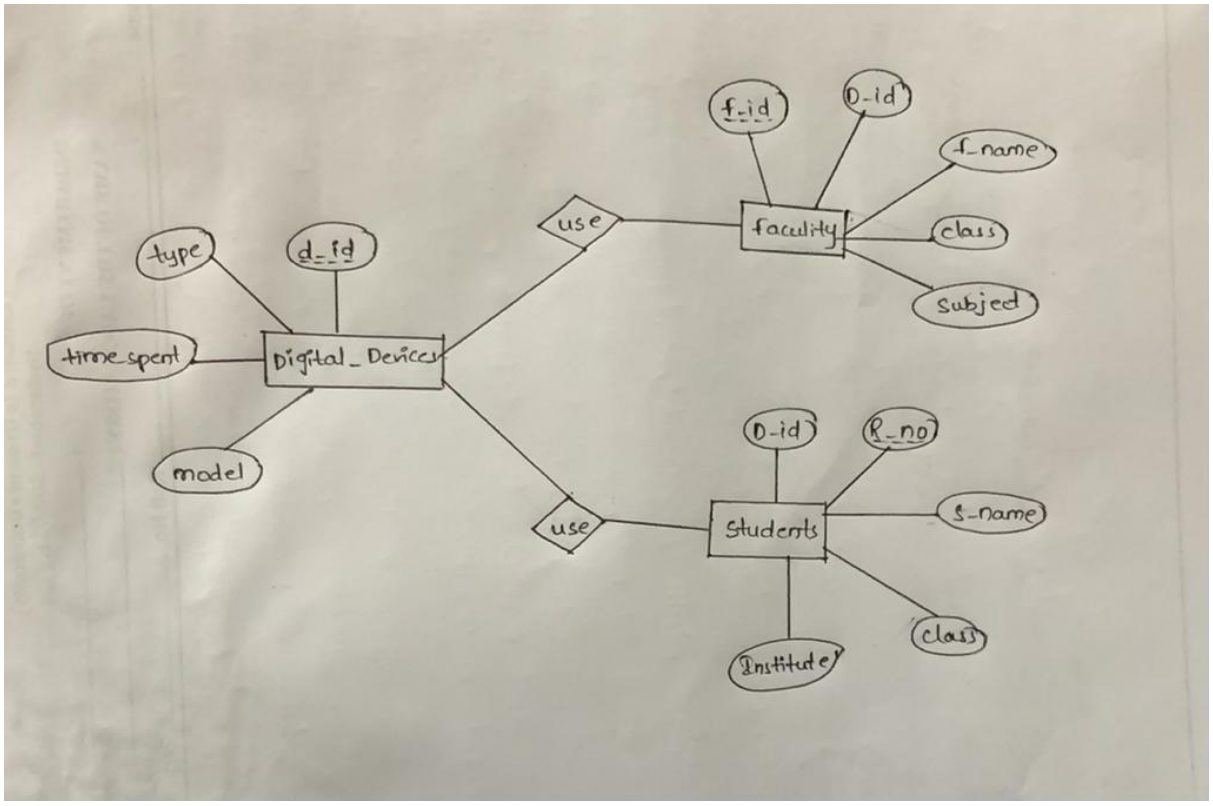
LIST OF ATTRIBUTES WITH THEIR DOMAIN TYPE:

- Digital_devices:
  - D_ID Number(3)
  - Type varchar2(20)
  - Time_spent number(3)
  - Model varchar2(20)
- Students:
  - D_ID Number(3)
  - R_no number(3)
  - S_name varchar2(20)
  - Class varchar2(20)
  - Institute varchar2(20)
- Faculity:
  - F_ID Number(20)

- D_ID number(20)
- F_name varchar2(20)
- Class number(3)
- Subject varchar2(20)

DESIGN:

ENTITY RELATIONSHIP DIAGRAM:



DDL COMMANDS :

1. Creating table for Digital_devices:

   Create table digital_devices(
   D_id number(20),
   Type varchar2(20),
   Time_spent number(3),
   Model varchar2(3));

   Outputs :

```
SQL> create table Digital_devices(
  2  D_ID NUMBER(3),
  3  TYPE VARCHAR2(20),
  4  TIME_SPENT NUMBER(3),
  5  MODEL VARCHAR2(20));

Table created.

SQL> desc Digital_devices;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 D_ID                                               NUMBER(3)
 TYPE                                               VARCHAR2(20)
 TIME_SPENT                                         NUMBER(3)
 MODEL                                              VARCHAR2(20)

SQL>
```

2. Making D_ID as primary key :

   Alter table Digital_devices add primary key(D_ID);

   Outputs :

```
SQL> ALTER TABLE Digital_devices ADD PRIMARY KEY(D_ID);

Table altered.

SQL> DESC DIGITAL_DEVICES;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 D_ID                                      NOT NULL NUMBER(3)
 TYPE                                               VARCHAR2(20)
 TIME_SPENT                                         NUMBER(3)
 MODEL                                              VARCHAR2(20)

SQL>
```

3. Creating table for Students :

   Create table Students(
   D_id number(3),
   R_no number(3),
   S_name varchar2(20),
   Class varchar2(20),
   Institute varchar2(20));

   Outputs :

```
SQL> create table STUDENTS(
  2  D_ID NUMBER(3),
  3  S_NAME VARCHAR2(20),
  4  CLASS VARCHAR2(20),
  5  INSTITUTE VARCHAR2(20),
  6  R_NO NUMBER(3));

Table created.

SQL> DESC STUDENTS;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 D_ID                                               NUMBER(3)
 S_NAME                                             VARCHAR2(20)
 CLASS                                              VARCHAR2(20)
 INSTITUTE                                          VARCHAR2(20)
 R_NO                                               NUMBER(3)
```

4. Making R_NO as primary key:

   Alter table Students add primary key(r_no);
   Outputs :

```
SQL> ALTER TABLE STUDENTS ADD PRIMARY KEY(D_ID);

Table altered.

SQL> DESC STUDENTS;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 D_ID                                      NOT NULL NUMBER(3)
 S_NAME                                             VARCHAR2(20)
 CLASS                                              VARCHAR2(20)
 INSTITUTE                                          VARCHAR2(20)
 R_NO                                               NUMBER(3)
```

5. Making D_ID as foreign key:

   Alter table Students add foreign key(d_id) references digital_devices;

   Outputs :

```
SQL> ALTER TABLE STUDENTS ADD FOREIGN KEY(D_ID) REFERENCES DIGITAL_DEVICES;

Table altered.

SQL> DESC STUDENTS;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 D_ID                                      NOT NULL NUMBER(3)
 S_NAME                                             VARCHAR2(20)
 CLASS                                              VARCHAR2(20)
 INSTITUTE                                          VARCHAR2(20)
 R_NO                                               NUMBER(3)
```

6. Creating table for faculity :

Create table faculity(
F_id number(3),
D_id number(3),
F_name varchar2(20),
Class number(3),
Subject varchar2(20));

Outputs :

```
SQL> CREATE TABLE FACULITY(
  2  F_ID NUMBER(3),
  3  D_ID NUMBER(3),
  4  F_NAME VARCHAR2(20),
  5  CLASS NUMBER(3),
  6  SUBJECT VARCHAR2(20));

Table created.

SQL> DESC FACULITY;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 F_ID                                               NUMBER(3)
 D_ID                                               NUMBER(3)
 F_NAME                                             VARCHAR2(20)
 CLASS                                              NUMBER(3)
 SUBJECT                                            VARCHAR2(20)
```

7. Making F_ID as primary key:

   Alter table faculity add primary key(f_id);

   Outputs :

```
SQL> ALTER TABLE FACULITY ADD PRIMARY KEY(F_ID);

Table altered.

SQL> DESC FACULITY;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 F_ID                                      NOT NULL NUMBER(3)
 D_ID                                               NUMBER(3)
 F_NAME                                             VARCHAR2(20)
 CLASS                                              NUMBER(3)
 SUBJECT                                            VARCHAR2(20)
```

8. Making D_ID as foreign key :

   Alter table faculity add foreign key(d_id) references digital_devices;

   Outputs :

```
SQL> ALTER TABLE FACULITY ADD FOREIGN KEY(D_ID) REFERENCES DIGITAL_DEVICES;

Table altered.

SQL> DESC FACULITY;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 F_ID                                      NOT NULL NUMBER(3)
 D_ID                                               NUMBER(3)
 F_NAME                                             VARCHAR2(20)
 CLASS                                              NUMBER(3)
 SUBJECT                                            VARCHAR2(20)
```

DML COMMANDS:

Inserting values into Digital_devices:

Insert into digital_devices values(&d_id,'&type',&time_spent,'&model');

Out put:

```
SQL> INSERT INTO DIGITAL_DEVICES VALUES(&D_ID,'&TYPE',&TIME_SPENT,'&MODEL');
Enter value for d_id: 101
Enter value for type: phone
Enter value for time_spent: 2
Enter value for model: samsung
old   1: INSERT INTO DIGITAL_DEVICES VALUES(&D_ID,'&TYPE',&TIME_SPENT,'&MODEL')
new   1: INSERT INTO DIGITAL_DEVICES VALUES(101,'phone',2,'samsung')

1 row created.

SQL> /
Enter value for d_id: 102
Enter value for type: laptop
Enter value for time_spent: 1
Enter value for model: dell
old   1: INSERT INTO DIGITAL_DEVICES VALUES(&D_ID,'&TYPE',&TIME_SPENT,'&MODEL')
new   1: INSERT INTO DIGITAL_DEVICES VALUES(102,'laptop',1,'dell')

1 row created.

SQL> /
Enter value for d_id: 103
Enter value for type: pc
Enter value for time_spent: 4
Enter value for model: acer
old   1: INSERT INTO DIGITAL_DEVICES VALUES(&D_ID,'&TYPE',&TIME_SPENT,'&MODEL')
new   1: INSERT INTO DIGITAL_DEVICES VALUES(103,'pc',4,'acer')

1 row created.

SQL> select * from digital_devices;

      D_ID TYPE                TIME_SPENT MODEL
---------- ------------------- ---------- --------------------
       101 phone                        2 samsung
       102 laptop                       1 dell
       103 pc                           4 acer
```

Inserting values into Students:

Insert into students values(&d_id,&r_no,'&s_name','&class','&institute');

Outputs:

```
SQL> insert into students values(&d_id,'&s_name','&class','&institute',&r_no);
Enter value for d_id: 101
Enter value for s_name: raghu
Enter value for class: seventh
Enter value for institute: jk institute
Enter value for r_no: 12
old   1: insert into students values(&d_id,'&s_name','&class','&institute',&r_no)
new   1: insert into students values(101,'raghu','seventh','jk institute',12)

1 row created.

SQL> /
Enter value for d_id: 102
Enter value for s_name: bharat
Enter value for class: ninth
Enter value for institute: raghuram institute
Enter value for r_no: 17
old   1: insert into students values(&d_id,'&s_name','&class','&institute',&r_no)
new   1: insert into students values(102,'bharat','ninth','raghuram institute',17)

1 row created.

SQL> /
Enter value for d_id: 103
Enter value for s_name: sandhya
Enter value for class: third
Enter value for institute: bhashyam
Enter value for r_no: 28
old   1: insert into students values(&d_id,'&s_name','&class','&institute',&r_no)
new   1: insert into students values(103,'sandhya','third','bhashyam',28)

1 row created.
```

```
SQL> select * from students;

      D_ID S_NAME               CLASS               INSTITUTE
---------- -------------------- -------------------- --------------------
      R_NO
----------
       101 raghu                seventh             jk institute
        12

       102 bharat               ninth               raghuram institute
        17

       103 sandhya              third               bhashyam
        28
```

Inserting values into Faculity:

Insert into faculity values(&f_id,&d_id,'&f_name','&class','&subject');

Outputs:

```
SQL> insert into faculity values(&f_id,&d_id,'&f_name',&class,'&subject');
Enter value for f_id: 201
Enter value for d_id: 101
Enter value for f_name: sreevani
Enter value for class: 3
Enter value for subject: social
old   1: insert into faculity values(&f_id,&d_id,'&f_name',&class,'&subject')
new   1: insert into faculity values(201,101,'sreevani',3,'social')

1 row created.

SQL> /
Enter value for f_id: 202
Enter value for d_id: 102
Enter value for f_name: rakesh
Enter value for class: 9
Enter value for subject: optics
old   1: insert into faculity values(&f_id,&d_id,'&f_name',&class,'&subject')
new   1: insert into faculity values(202,102,'rakesh',9,'optics')

1 row created.

SQL> /
Enter value for f_id: 203
Enter value for d_id: 103
Enter value for f_name: raju
Enter value for class: 7
Enter value for subject: english
old   1: insert into faculity values(&f_id,&d_id,'&f_name',&class,'&subject')
new   1: insert into faculity values(203,103,'raju',7,'english')
```

```
SQL> select * from faculity;

      F_ID       D_ID F_NAME                    CLASS SUBJECT
---------- ---------- -------------------- ---------- --------------------
       201        101 sreevani                      3 social
       202        102 rakesh                        9 optics
       203        103 raju                          7 english

SQL>
```

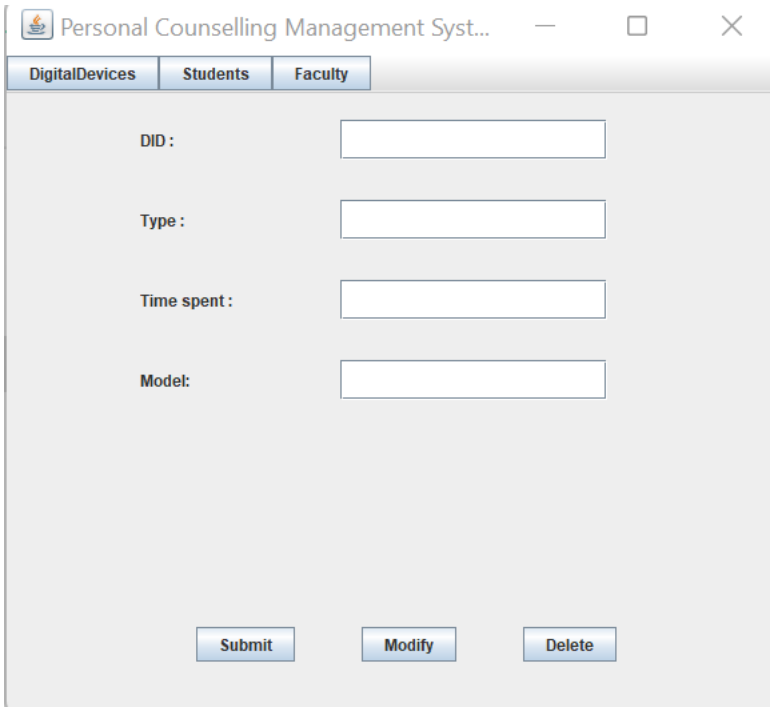
THE DIGITAL IMAGINARY

ASSIGNMENT-2

J. LITHIN SAIRAM

1602-20-737-022

1)Digital Devices table:



Code:

```
import java.awt.*;
import java.awt.event.*;
import javax.swing.*;
class HomePageUI extends JFrame implements ActionListener
{
        DigitalDevicesUI ob1;
        Student1UI ob2;
        FacultyUI ob3;
        JButton submit,modify,delete,m1,m2,m3;
        JPanel p1,p2,p3,pb;
        JMenuBar mb;
```

```
public HomePageUI()
{
        setSize(600,550);
        setLayout(null);
        setVisible(true);
        setTitle("Personal Counselling Management System");

        ob1 = new DigitalDevicesUI();
        ob2 = new Student1UI();
        ob3 = new FacultyUI();

        createPanels();
        createMenu();
        createButtons();
        addComponents();
        setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
}

void createPanels()
{
        p1 = ob1.p;
        p2 = ob2.p;
        p3 = ob3.p;
        pb = new JPanel(new FlowLayout(FlowLayout.CENTER,50,0));
        pb.setBounds(0,400,600,150);
}

void createMenu()
```

```
{
        mb = new JMenuBar();

        m1 = new JButton("DigitalDevices");
        m1.setFocusable(false);

        m2 = new JButton("Students");
        m2.setFocusable(false);


        m3 = new JButton("Faculty");
        m3.setFocusable(false);

        m1.addActionListener(this);
        m2.addActionListener(this);
        m3.addActionListener(this);

        mb.add(m1);
        mb.add(m2);
        mb.add(m3);

}

public void actionPerformed(ActionEvent e)
{
        remove(p1);
        remove(p2);
        remove(p3);
```

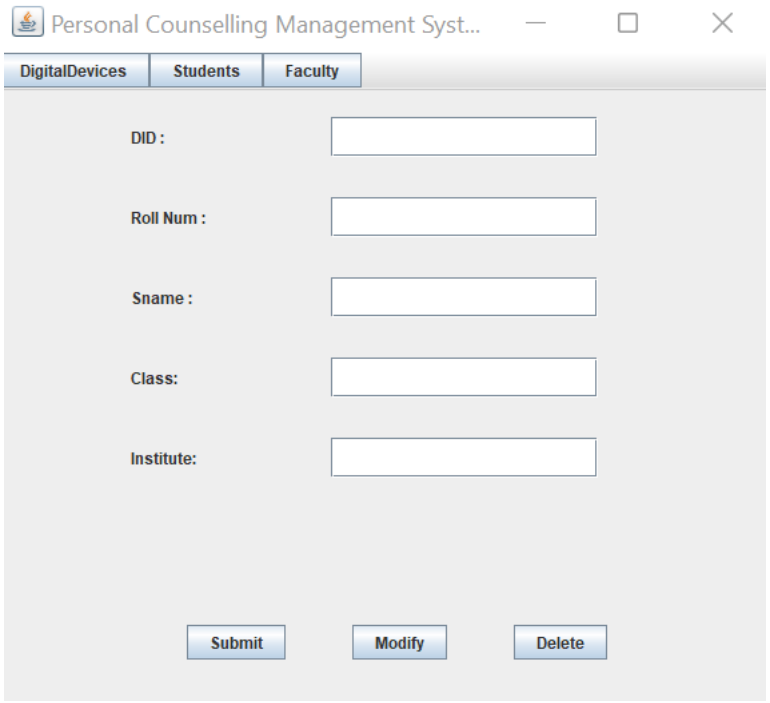
```
		if(e.getSource()==m1)
			add(p1);

		else if(e.getSource()==m2)
			add(p2);

		else
			add(p3);
	}

	void createButtons()
	{
		submit = new JButton("Submit");
		submit.addActionListener(new ActionListener()
		{
			public void actionPerformed(ActionEvent e)
			{
				JOptionPane.showMessageDialog(new JFrame(),"Successfully Inserted!","NOTICE",JOptionPane.INFORMATION_MESSAGE);
			}
		});


		modify = new JButton("Modify");
		modify.addActionListener(new ActionListener()
		{
			public void actionPerformed(ActionEvent e)
			{
				JOptionPane.showMessageDialog(new JFrame(),"Successfully Modified!","NOTICE",JOptionPane.INFORMATION_MESSAGE);
```

```
                }
        });


        delete = new JButton("Delete");
        delete.addActionListener(new ActionListener()
        {
                public void actionPerformed(ActionEvent e)
                {
                        JOptionPane.showMessageDialog(new JFrame(),"Successfully
Deleted!","NOTICE",JOptionPane.INFORMATION_MESSAGE);
                }
        });

        pb.add(submit);
        pb.add(modify);
        pb.add(delete);
    }

    void addComponents()
    {
        add(p1);
        add(pb);
        setJMenuBar(mb);
    }

    public static void main(String a[])
    {
        new HomePageUI();
    }
```

```
}

import javax.swing.*;

class DigitalDevicesUI
{
	JTextField t1,t2,t3,t4;
	JLabel l1,l2,l3,l4;
	JPanel p;

	public DigitalDevicesUI()
	{
		createComponents();
		addComponents();
	}

	void createComponents()
	{
		t1 = new JTextField();
		t1.setBounds(250,20,200,30);

		t2 = new JTextField();
		t2.setBounds(250,80,200,30);

		t3 = new JTextField();
		t3.setBounds(250,140,200,30);

		t4 = new JTextField();
		t4.setBounds(250,200,200,30);
```

```
        l1 = new JLabel("DID :  ");
        l1.setBounds(100,20,100,30);

        l2 = new JLabel("Type :  ");
        l2.setBounds(100,80,100,30);

        l3 = new JLabel("Time spent :  ");
        l3.setBounds(100,140,100,30);

        l4 = new JLabel("Model:  ");
        l4.setBounds(100,200,100,30);

        p = new JPanel(null);
        p.setBounds(0,0,600,400);
    }

    void addComponents()
    {
        p.add(l1);
        p.add(t1);
        p.add(l2);
        p.add(t2);
        p.add(l3);
        p.add(t3);
        p.add(l4);
        p.add(t4);
    }
}
```

Students table:



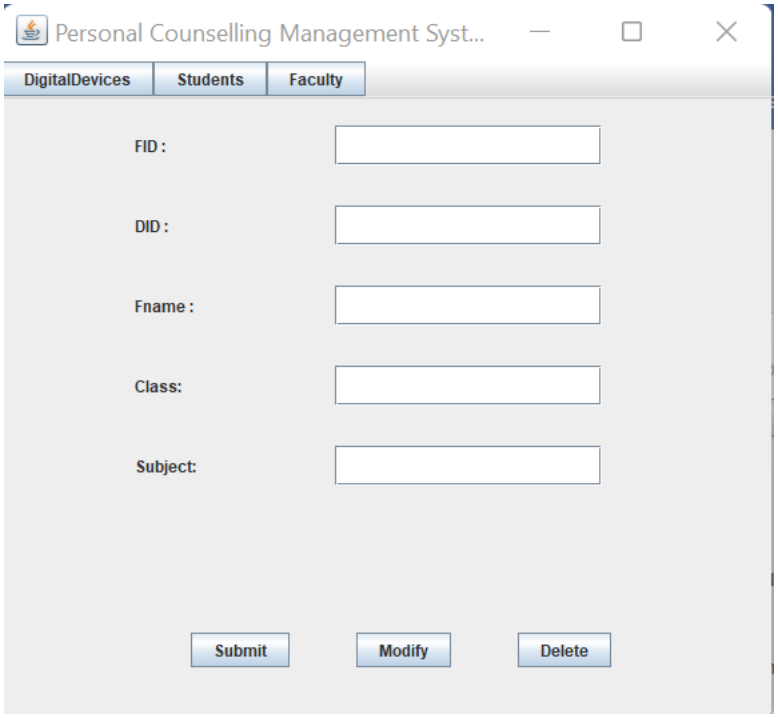
Code:

```
import javax.swing.*;
class Student1UI
{
	JTextField t1,t2,t3,t4,t5;
	JLabel l1,l2,l3,l4,l5;
	JPanel p;

	public Student1UI()
	{
		createComponents();
		addComponents();
	}

	void createComponents()
	{
		t1 = new JTextField();
```

```
t1.setBounds(250,20,200,30);

t2 = new JTextField();
t2.setBounds(250,80,200,30);

t3 = new JTextField();
t3.setBounds(250,140,200,30);


t4 = new JTextField();
t4.setBounds(250,200,200,30);

t5 = new JTextField();
t5.setBounds(250,260,200,30);


l1 = new JLabel("DID :  ");
l1.setBounds(100,20,100,30);

l2 = new JLabel("Roll Num :  ");
l2.setBounds(100,80,100,30);

l3 = new JLabel("Sname :  ");
l3.setBounds(100,140,100,30);

l4 = new JLabel("Class:  ");
l4.setBounds(100,200,100,30);

l5 = new JLabel("Institute:  ");
```

```
            l5.setBounds(100,260,100,30);


            p = new JPanel(null);
            p.setBounds(0,0,600,400);
        }


        void addComponents()
        {
            p.add(l1);
            p.add(t1);
            p.add(l2);
            p.add(t2);
            p.add(l3);
            p.add(t3);
            p.add(l4);
            p.add(t4);
            p.add(l5);
            p.add(t5);
        }
}
```

Faculty table:



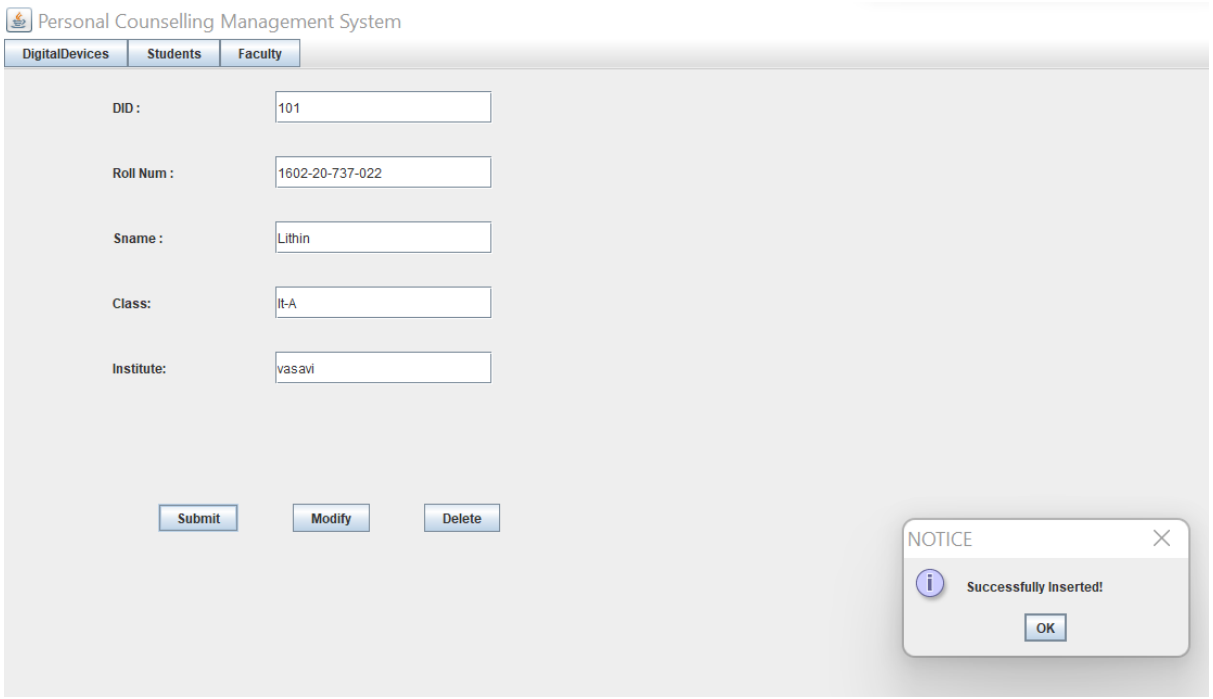
Code:

```
import javax.swing.*;

class FacultyUI

{

        JTextField t1,t2,t3,t4,t5;

        JLabel l1,l2,l3,l4,l5;

        JPanel p;


        public FacultyUI()

        {

                createComponents();

                addComponents();

        }


        void createComponents()

        {

                t1 = new JTextField();

                t1.setBounds(250,20,200,30);
```

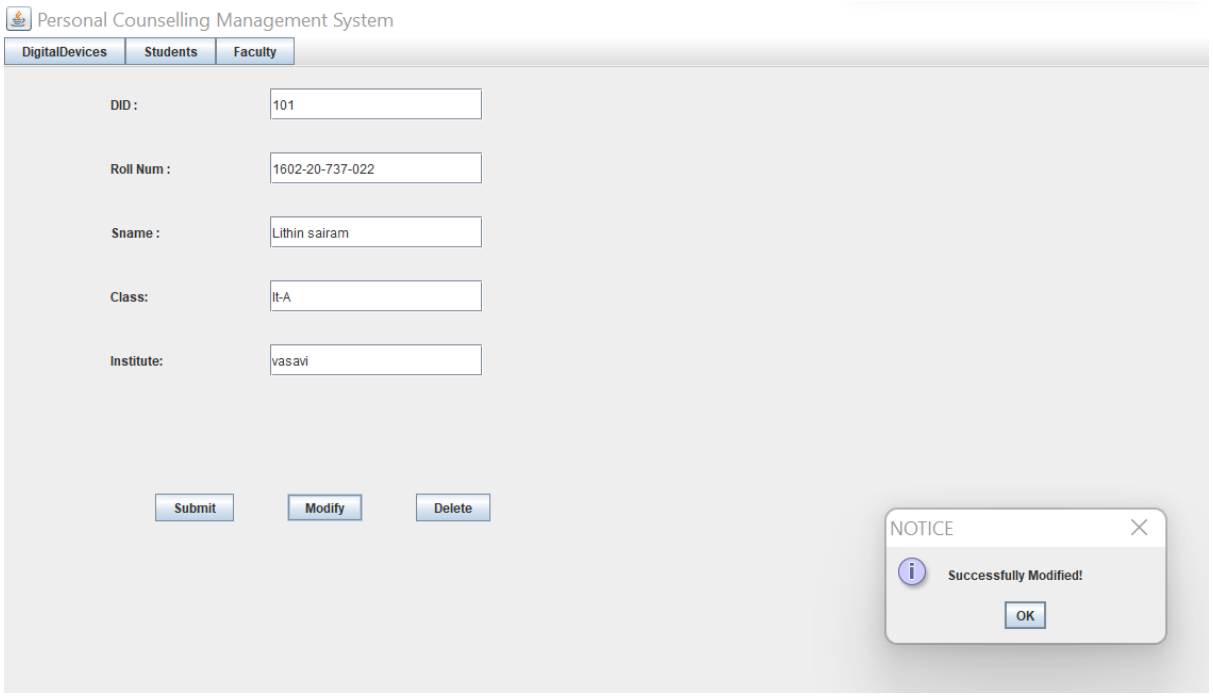
```
t2 = new JTextField();
t2.setBounds(250,80,200,30);

t3 = new JTextField();
t3.setBounds(250,140,200,30);


t4 = new JTextField();
t4.setBounds(250,200,200,30);

t5 = new JTextField();
t5.setBounds(250,260,200,30);


l1 = new JLabel("FID :  ");
l1.setBounds(100,20,100,30);

l2 = new JLabel("DID :  ");
l2.setBounds(100,80,100,30);

l3 = new JLabel("Fname :  ");
l3.setBounds(100,140,100,30);

l4 = new JLabel("Class:  ");
l4.setBounds(100,200,100,30);

l5 = new JLabel("Subject:  ");
l5.setBounds(100,260,100,30);
```

```
            p = new JPanel(null);
            p.setBounds(0,0,600,400);
        }

        void addComponents()
        {
            p.add(l1);
            p.add(t1);
            p.add(l2);
            p.add(t2);
            p.add(l3);
            p.add(t3);
            p.add(l4);
            p.add(t4);
            p.add(l5);
            p.add(t5);
        }
}
```

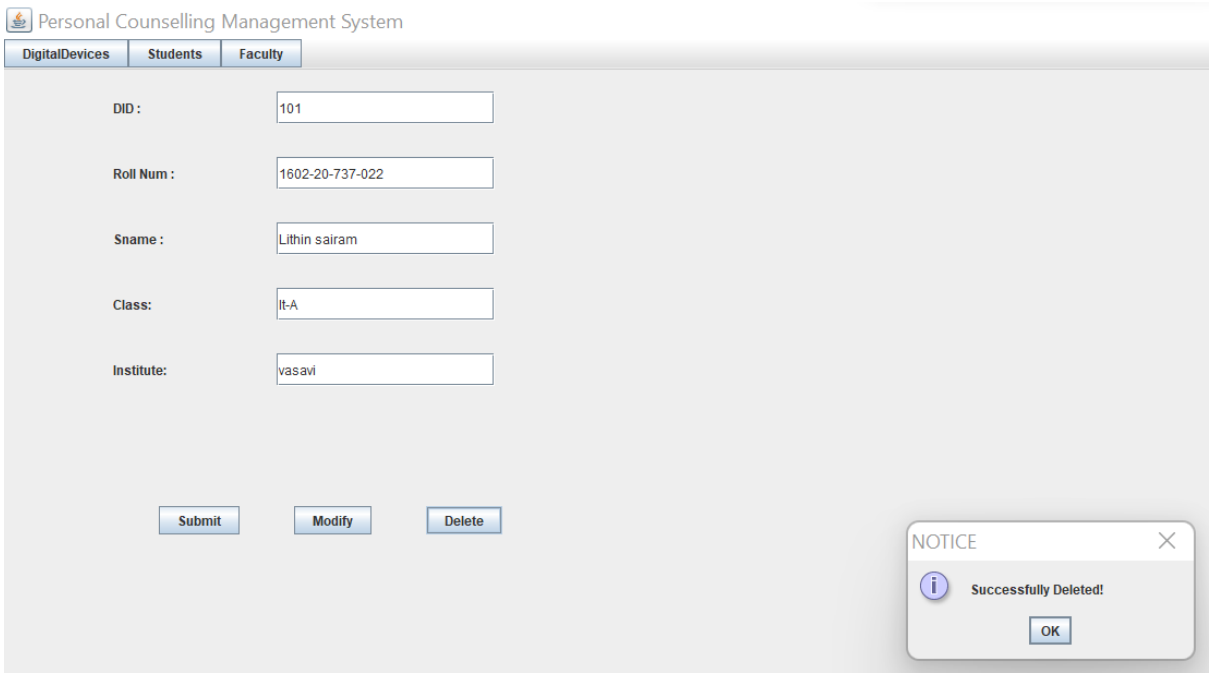
Inserting:



Modifying:



Deleting:


Personal Counselling Management System
DigitalDevices
Students
Faculty
DID :
101
Roll Num :
1602-20-737-022
Sname :
Lithin sairam
Class:
It-A
Institute:
vasavi
Submit
Modify
Delete
NOTICE
Successfully Deleted!
OK

Results: I had successfully completed PROJECT on “THE DIGITAL IMAGINARY”

Discussion and future Work:

This application provides how digital technology integration contributes

to the enhancement of students’ academic performance through project-based learning (PBL)

amongst undergraduates in higher education. In this study, the technology acceptance model

(TAM) was used as the basic model to explore the digital technology environment in terms of the

perceived usefulness, perceived ease of use and attitude towards integrating digital technology

and the influence of these factors on undergraduates' learning engagement and academic performance within PB.

CONCLUSION:

Thus, a Java SWING based ***THE DIGITAL IMAGINARY*** is created which is connected to the Oracle 11g database. Therefore, all the entries and details are directly updated on their respective tables created in the database