JAVA AWT BASED-

STRICT POLICIES FOR RECOVERY OF DELAY PAYMENT

- SQL CONNECTIVITY USING JDBC

A

Report

Submitted in partial fulfilment of the

Requirements for the award of the Degree of

BACHELOR OF ENGINEERING

IN

INFORMATION TECHNOLOGY

By

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2019-2020

BONAFIDE

This is certify that this project report titled '**STRICT POLICIES FOR RECOVERY OF DELAY PAYMENT**' is a bonafide mini project work of **VINUTHNA TATIKONDA** bearing H.T.No.**1602-18-737-118** under the guidance of **B.Leelavathy** during the 4th Sem B.E for the Academic Year 2019-2020.

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ABSTRACT

Taking and giving money is happening in every sector.In manufacturing, if the buyer fails to make payment of the amount to the supplier, he shall be liable to pay compound interest with monthly rests to the supplier on the amount from the appointed day or, on the date agreed on, at three times of the Bank Rate notified by Reserve Bank. This may not be applicable in all the sectors. Following the policy of legally seizing the property, both the lender and borrower will get advantage. Borrower can buy his lost property again and the lender can get his money recovered. The lender sets the deadline for the borrower to return the money along with interest. If the borrower does not make payment on a timely basis, he will receive notice in the form of letter or mail or a text message. If the borrower does not return the money the lender owe, even after eceiving reminders, the lender has the right to legally take his/her property.

Aim and Priority of the project :

To create a **Java GUI based "Strict policies for recovery of Delay Payment"** which has the entities like: Lender, Borrower, Notices and Property whose values are taken from the user. These values are to be inserted, updated and deleted in the database using **JDBC connectivity.**

INTRODUCTION

Requirements:

Tables required - 7

- Lender
- Borrower
- Lender_Borrower
- Borrower_notices
- Notices
- Property
- Lender_Property

ENTITY	ATTRIBUTES	DOMAIN

Lender	i.Name
	ii.Lender _id
	iii.Contact_no
	iv.Money _lent
	v.Deadline
		Varchar2(10)
		Number(10)
		Number(20)
		Number(30)
		Date

Borrower	i.Name
	ii.Payment _id
	iii.Contact_no
	iv. Address
	v. Payment_status
	vi. Profession
		Varchar2(10)
		Number(10)
		Number(10)
		Varchar2(20)
		Varchar2(10)
		Varchar2(15)

Lender_Borrower	i. Lender _id ii.Payment_id iii.Day	Number(10) Number(10) Date

Borrower_notices	i. Payment_id
	ii.Mail_id
	iii.Conformation
	iv.Date_received
		Number(10)
		Varchar2(30)
		Varchar2(20)
		Date

Property	i.Ownership
	ii.Value
	iii.Acres
	iv.Location
		Varchar2(10)
		Number(15)
		Number(10)
		Varchar2(20)

Notices	i.Mail_id
	ii. Contact_info
	iii.Days_delayed
		Varchar2(30)
		Number(15)
		Number(10)

Lender_property	i.Lender_id
	ii.Ownwership
	iii.date_siezed
		Number(10)
		Varchar2(20)
		Date

Architecture and Technology :

Software used :

i. Java Eclipse
ii. Oracle 11g Database Enterprise Edition Release 11.2.0.1.0-64 bit
SQL*Plus Release 9.0.1.3.0.
iii.

Java AWT:

Java AWT (Abstract Window Toolkit) is an API to develop GUI or window-based applications in java.

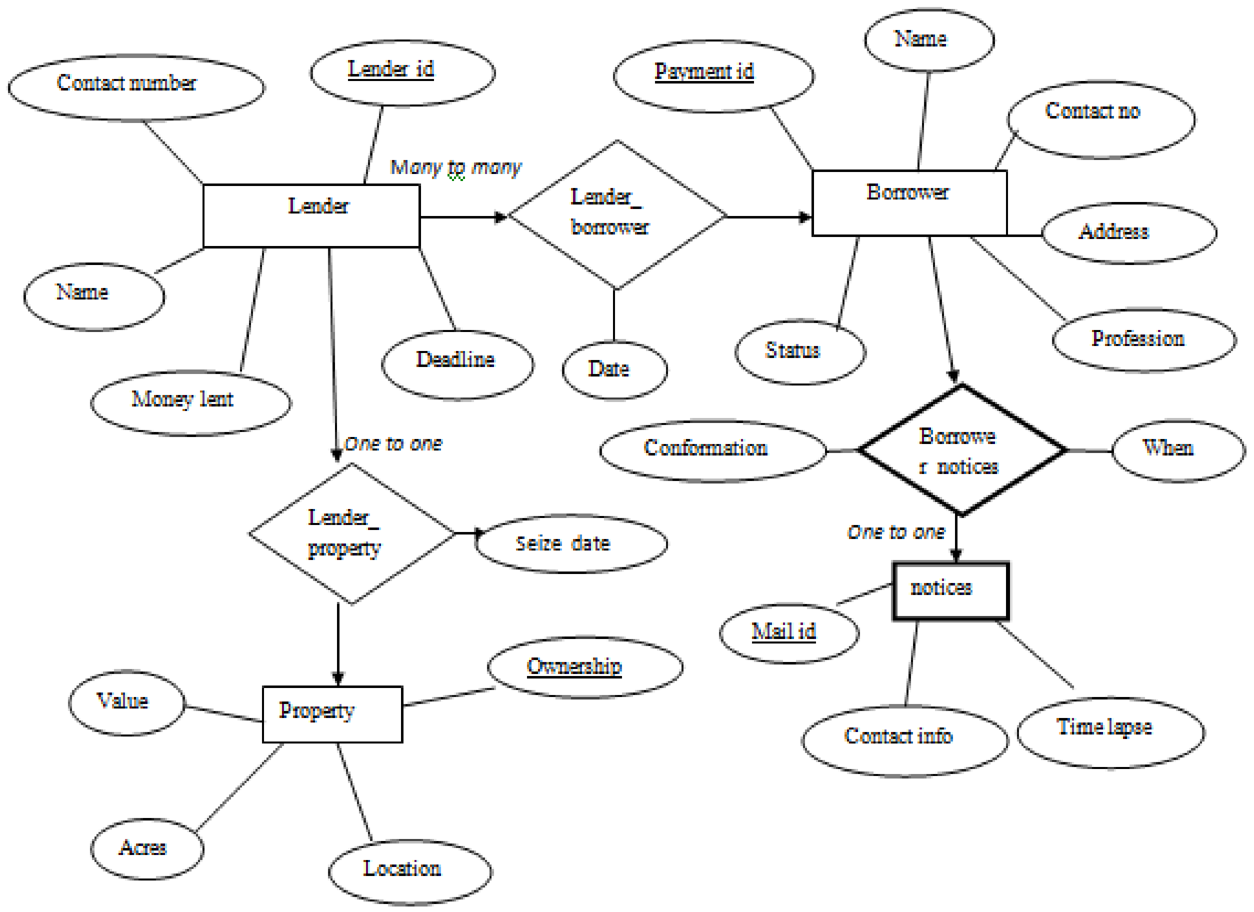
Java AWT components are platform-dependent i.e. components are displayed according to the view of operating system. AWT is heavyweight i.e. its components are using the resources of OS. The java.awt package provides classes for AWT API such as TextField, Label, TextArea, Button, Choice, List ,etc.

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.

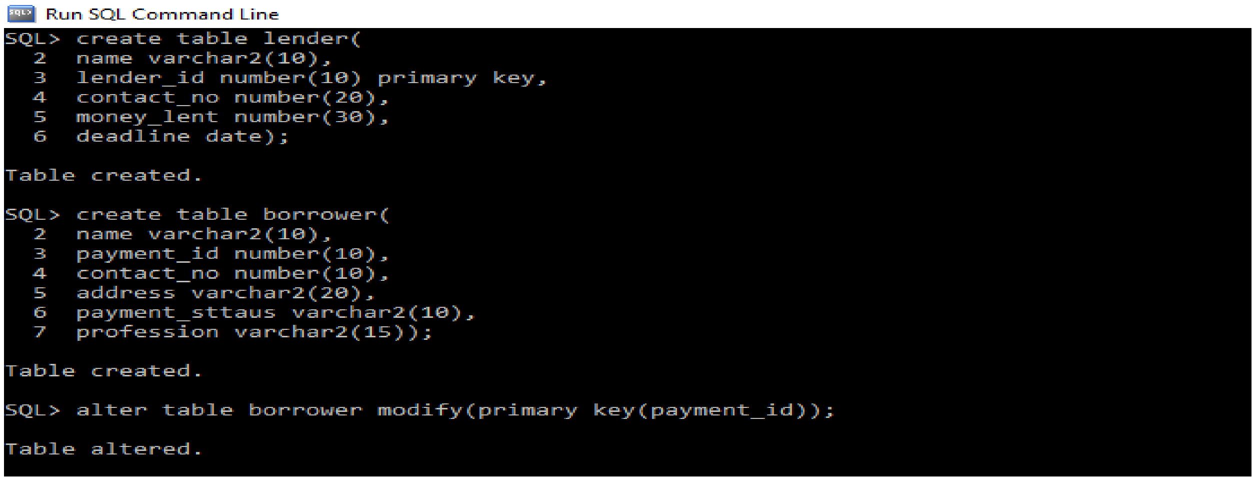
Design :

ENTITY RELATIONSHIP MODEL



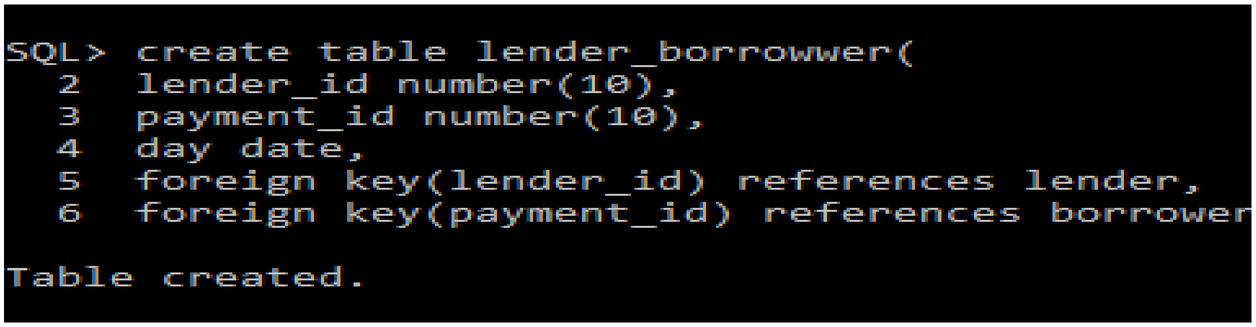
Tables:

Here are creation of tables lender,borrower and relationship lender_borrower between them :



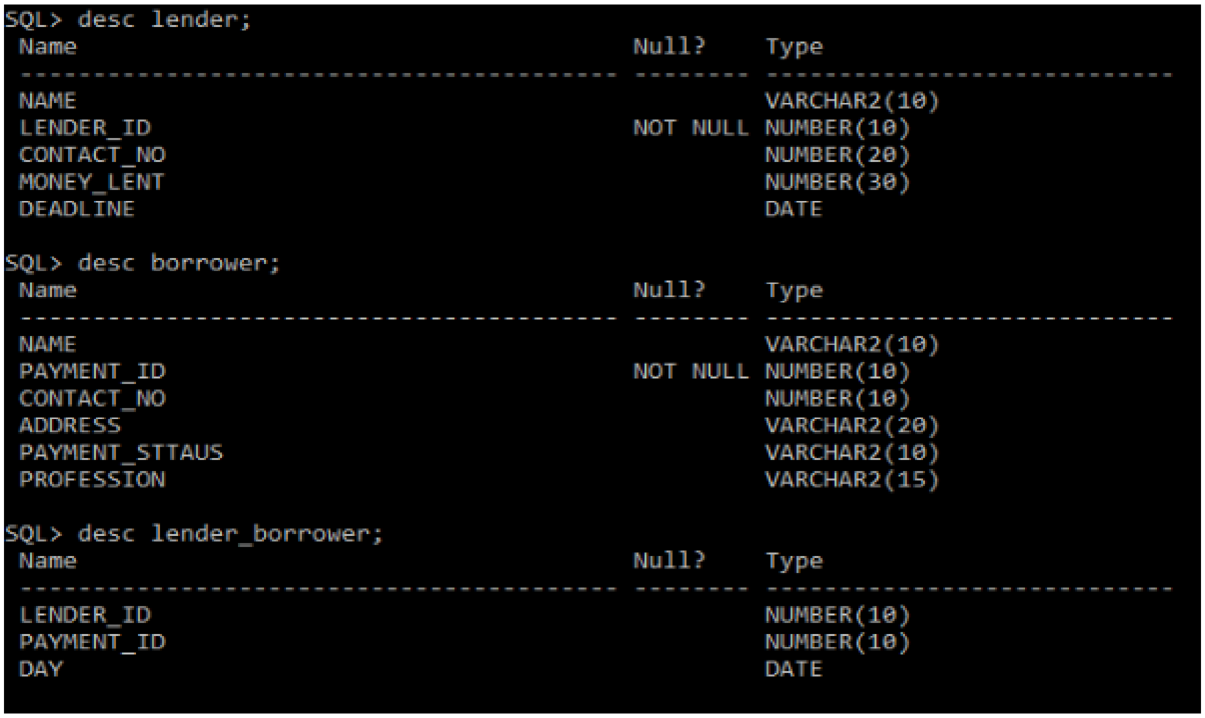
Run SQL Command Line

```
SQL> create table lender(
  2  name varchar2(10),
  3  lender_id number(10) primary key,
  4  contact_no number(20),
  5  money_lent number(30),
  6  deadline date);

Table created.

SQL> create table borrower(
  2  name varchar2(10),
  3  payment_id number(10),
  4  contact_no number(10),
  5  address varchar2(20),
  6  payment_sttaus varchar2(10),
  7  profession varchar2(15));

Table created.

SQL> alter table borrower modify(primary key(payment_id));

Table altered.
```



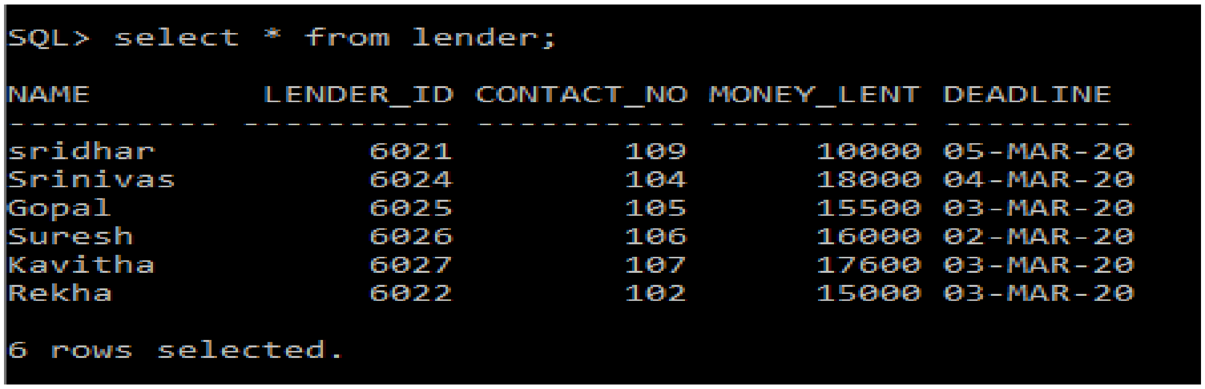
```
SQL> create table lender_borrowwer(
  2  lender_id number(10),
  3  payment_id number(10),
  4  day date,
  5  foreign key(lender_id) references lender,
  6  foreign key(payment_id) references borrower

Table created.
```

Description of the tables :

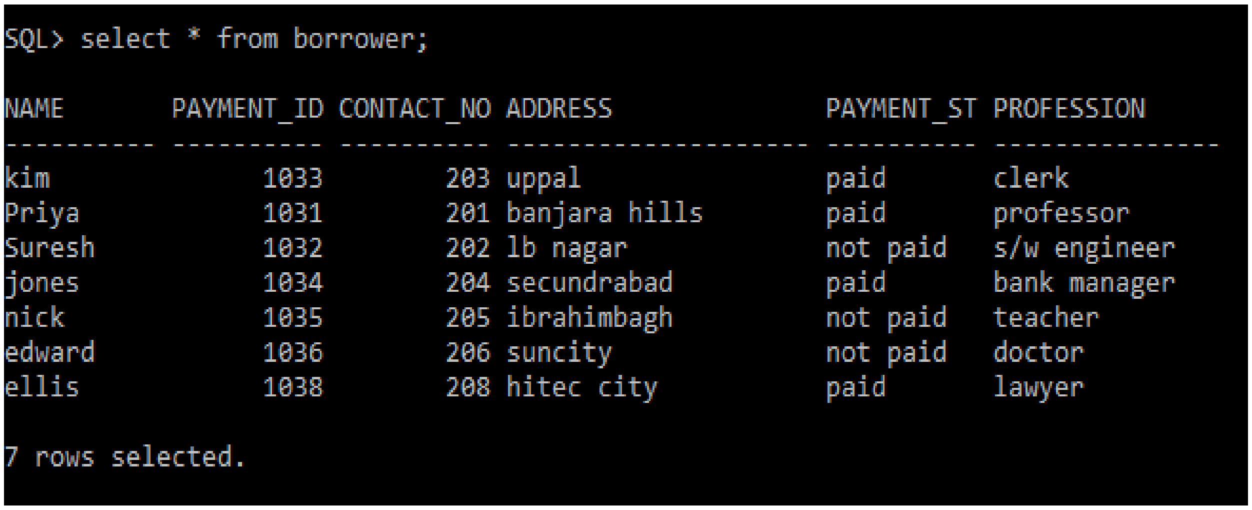


```
SQL> desc lender;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 NAME                                               VARCHAR2(10)
 LENDER_ID                                 NOT NULL NUMBER(10)
 CONTACT_NO                                         NUMBER(20)
 MONEY_LENT                                         NUMBER(30)
 DEADLINE                                           DATE

SQL> desc borrower;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 NAME                                               VARCHAR2(10)
 PAYMENT_ID                                NOT NULL NUMBER(10)
 CONTACT_NO                                         NUMBER(10)
 ADDRESS                                            VARCHAR2(20)
 PAYMENT_STTAUS                                     VARCHAR2(10)
 PROFESSION                                         VARCHAR2(15)

SQL> desc lender_borrower;
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------------------------
 LENDER_ID                                          NUMBER(10)
 PAYMENT_ID                                         NUMBER(10)
 DAY                                                DATE
```

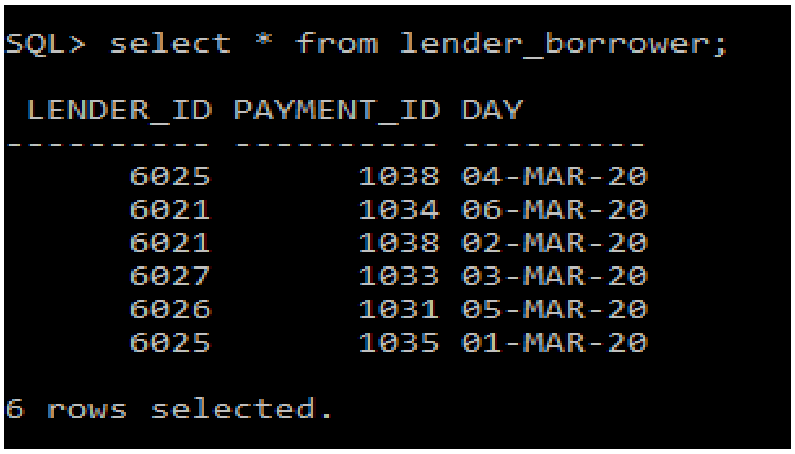
Records of the table :



```
SQL> select * from lender;

NAME         LENDER_ID CONTACT_NO MONEY_LENT DEADLINE
---------- ---------- ---------- ---------- ---------
sridhar          6021        109      10000 05-MAR-20
Srinivas         6024        104      18000 04-MAR-20
Gopal            6025        105      15500 03-MAR-20
Suresh           6026        106      16000 02-MAR-20
Kavitha          6027        107      17600 03-MAR-20
Rekha            6022        102      15000 03-MAR-20

6 rows selected.
```



```
SQL> select * from borrower;

NAME       PAYMENT_ID CONTACT_NO ADDRESS              PAYMENT_ST PROFESSION
---------- ---------- ---------- -------------------- ---------- ---------------
kim              1033        203 uppal                paid       clerk
Priya            1031        201 banjara hills        paid       professor
Suresh           1032        202 lb nagar             not paid   s/w engineer
jones            1034        204 secundrabad          paid       bank manager
nick             1035        205 ibrahimbagh          not paid   teacher
edward           1036        206 suncity              not paid   doctor
ellis            1038        208 hitec city           paid       lawyer

7 rows selected.
```

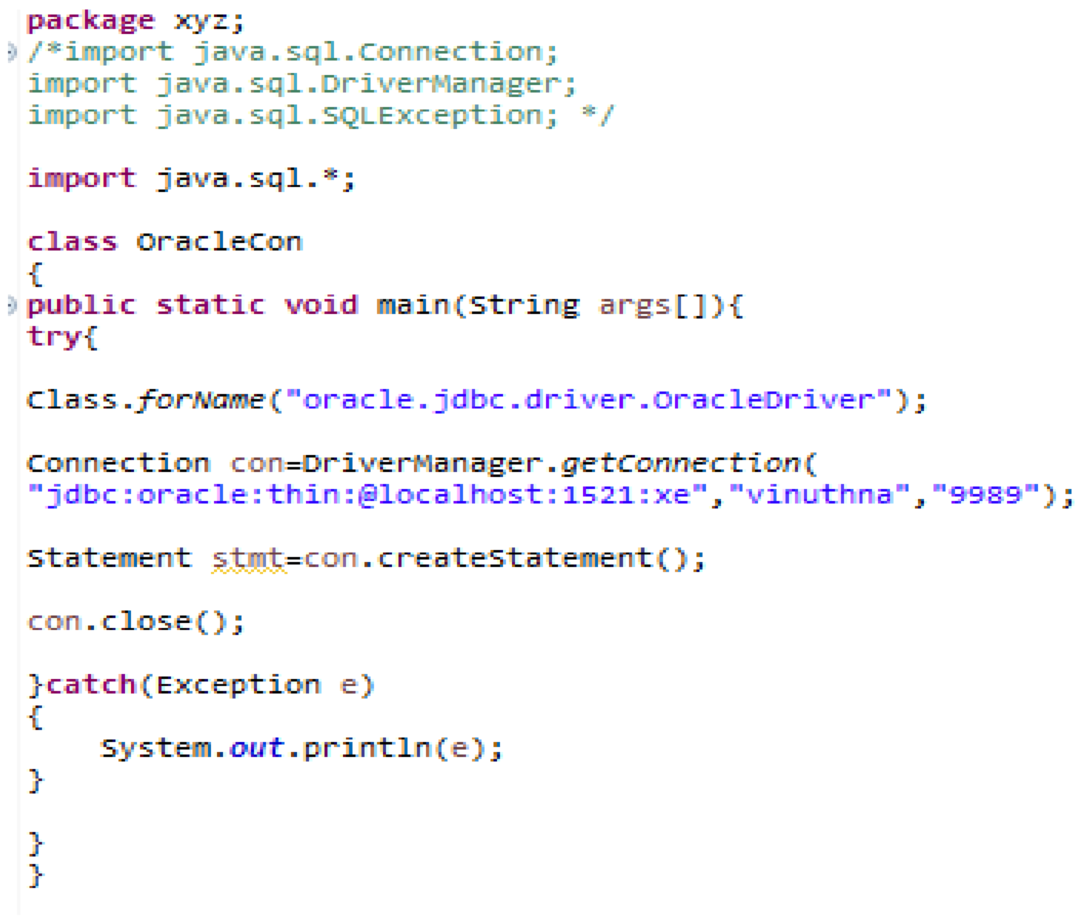


```
SQL> select * from lender_borrower;

 LENDER_ID PAYMENT_ID DAY
---------- ---------- ---------
      6025       1038 04-MAR-20
      6021       1034 06-MAR-20
      6021       1038 02-MAR-20
      6027       1033 03-MAR-20
      6026       1031 05-MAR-20
      6025       1035 01-MAR-20

6 rows selected.
```

Implementation :

i. Front end programs and connectivity

//CONNECTIVITY PROGRAM :



```
package xyz;
/*import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.SQLException; */

import java.sql.*;

class OracleCon
{
public static void main(String args[]){
try{

Class.forName("oracle.jdbc.driver.OracleDriver");

Connection con=DriverManager.getConnection(
"jdbc:oracle:thin:@localhost:1521:xe","vinuthna","9989");

Statement stmt=con.createStatement();

con.close();

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

}
}
```

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

//PROGRAM FOR INSERTING LENDER TABLE :

```
package abc;

import java.awt.*;

import java.awt.event.*;

import java.sql.*;

public class InsertLender extends Frame

{
        Button insertLenderButton;
        TextField nameText, lender_idText, contact_noText, money_lentText,deadlineText;
TextArea errorText;
        Connection connection;
        Statement statement;
        public InsertLender()
        {       try     {
                        Class.forName("oracle.jdbc.driver.OracleDriver");       }
                catch (Exception e) {
                        System.err.println("Unable to find and load driver");
                        System.exit(1);         }
                connectToDB();
        }
        public void connectToDB()
        {       try     {
                  connection = DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","vinuthna","9989");
                  statement = connection.createStatement();
                        }
                catch (SQLException connectException) {
                  System.out.println(connectException.getMessage());
                  System.out.println(connectException.getSQLState());
                  System.out.println(connectException.getErrorCode());
                  System.exit(1);
                }
        }
        public void buildGUI()
        {
                insertLenderButton = new Button("Insert Lender");
                insertLenderButton.addActionListener(new ActionListener()
                {
                        public void actionPerformed(ActionEvent e)
                        {       try
                                {
                                  String query= "INSERT INTO lender VALUES('" + nameText.getText() + "'," +  lender_idText.getText() + ","
+ contact_noText.getText() + "," + money_lentText.getText() +",'"+deadlineText.getText()+ "')";
                                  int  i = statement.executeUpdate(query);
                                  errorText.append("\nInserted " + i + " rows successfully"); }
                                catch (SQLException insertException) {
                                  displaySQLErrors(insertException);   }
                        }
                });
                nameText = new TextField(15);                   lender_idText = new TextField(15);
                contact_noText = new TextField(15);             money_lentText = new TextField(15);
                deadlineText = new TextField(15);               errorText = new TextArea(10, 40);
                errorText.setEditable(false);
                Panel first = new Panel();
                first.setLayout(new GridLayout(5, 2));
                first.add(new Label("Name:"));                  first.add(nameText);
                first.add(new Label("Lender_id:"));             first.add(lender_idText);
                first.add(new Label("Contact_no:"));            first.add(contact_noText);
                first.add(new Label("Money Lent:"));            first.add(money_lentText);
                first.add(new Label("Deadline:"));              first.add(deadlineText);
                first.setBounds(125,90,200,100);
                Panel second = new Panel(new GridLayout(4, 1));
                second.add(insertLenderButton);
                second.setBounds(125,220,150,100);
                Panel third = new Panel();
                third.add(errorText);
                third.setBounds(125,320,300,200);
                setLayout(null);
                add(first);   add(second);   add(third);
                setTitle("New Lender Creation");
                setSize(500, 600);
                setVisible(true);
        }
        private void displaySQLErrors(SQLException e)
        {
                errorText.append("\nSQLException: " + e.getMessage() + "\n");
                errorText.append("SQLState:     " + e.getSQLState() + "\n");
                errorText.append("VendorError:  " + e.getErrorCode() + "\n");
        }
        public static void main(String[] args)
```

```
        {
                InsertLender l = new InsertLender();
                 l.addWindowListener(new WindowAdapter(){
                 public void windowClosing(WindowEvent e)
                 {
                        System.exit(0); }
                });
                l.buildGUI();
        }    }
```

//PROGRAM FOR UPDATING LENDER TABLE :

```
package abc;
import java.awt.*;
import java.awt.event.*;
import java.sql.*;
public class UpdateLender extends Frame
{
        Button updateLenderButton;
        List lenderIDList;
        TextField nameText, lender_idText, contact_noText, money_lentText,deadlineText;
        TextArea errorText;
        Connection connection;
        Statement statement;
        ResultSet rs;
        public UpdateLender()
        {        try        {
                        Class.forName("oracle.jdbc.driver.OracleDriver");        }
                catch (Exception e) {
                        System.err.println("Unable to find and load driver");
                        System.exit(1);   }
                connectToDB();
        }
        public void connectToDB()
        {        try {
Connection=DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","vinuthna","9989");
                 statement = connection.createStatement();
```

```
            }
            catch (SQLException connectException) {
             System.out.println(connectException.getMessage());
             System.out.println(connectException.getSQLState());
             System.out.println(connectException.getErrorCode());
             System.exit(1);
            }
      }
      private void loadLenders()
      {   try      {
             rs = statement.executeQuery("SELECT LENDER_ID FROM lender");
             while (rs.next())
             {
                  lenderIDList.add(rs.getString("LENDER_ID"));
             }
            }
            catch (SQLException e) {
             displaySQLErrors(e);  }
      }
      public void buildGUI()
      {
        lenderIDList = new List(10);
            loadLenders();
            add(lenderIDList);
            lenderIDList.addItemListener(new ItemListener()
            {
                  public void itemStateChanged(ItemEvent e)
                  {       try       {
                                    rs = statement.executeQuery("SELECT * FROM lender where LENDER_ID
="+lenderIDList.getSelectedItem());
                                    rs.next();
                                    nameText.setText(rs.getString("NAME"));
                                    lender_idText.setText(rs.getString("LENDER_ID"));
                                    contact_noText.setText(rs.getString("CONTACT_NO"));
                                    money_lentText.setText(rs.getString("MONEY_LENT"));
                                    deadlineText.setText(rs.getString("DEADLINE"));
```

```
                    }
                    catch (SQLException selectException) {
                            displaySQLErrors(selectException); }
            }
    });
    updateLenderButton = new Button("Update Lender");
    updateLenderButton.addActionListener(new ActionListener()
    {
            public void actionPerformed(ActionEvent e)
            {       try {
                            Statement statement = connection.createStatement();
                            int i = statement.executeUpdate("UPDATE lender "
                            + "SET name='" + nameText.getText() +
                            "',contact_no="+contact_noText.getText()+
                            ",money_lent="+money_lentText.getText()+",deadline='"+deadlineText.getText()+"'     WHERE
lender_id ="
                            + lenderIDList.getSelectedItem());
                            errorText.append("\nUpdated " + i + " rows successfully");
                            lenderIDList.removeAll();
                            loadLenders();
                    }
                    catch (SQLException insertException)
                    {       displaySQLErrors(insertException);      }
            }
    });
    lender_idText = new TextField(15);
    lender_idText.setEditable(false);
    nameText = new TextField(15);      money_lentText = new TextField(15);
    contact_noText = new TextField(15);  deadlineText = new TextField(15);
    errorText = new TextArea(10, 40);     errorText.setEditable(false);
    Panel first = new Panel();
    first.setLayout(new GridLayout(5, 2));
    first.add(new Label("Lender ID:"));    first.add(lender_idText);
    first.add(new Label("Name:"));         first.add(nameText);
    first.add(new Label("Contact no:"));   first.add(contact_noText);
    first.add(new Label("Money Lent:"));  first.add(money_lentText);
```

```
                first.add(new Label("Deadline:"));      first.add(deadlineText);
                Panel second = new Panel(new GridLayout(4, 1));
                second.add(updateLenderButton);
                Panel third = new Panel();
                third.add(errorText);
                add(first);   add(second);   add(third);
                setTitle("Update Lender");
                setSize(500, 600);
                setLayout(new FlowLayout());
                setVisible(true);
        }
        private void displaySQLErrors(SQLException e)
        {
                errorText.append("\nSQLException: " + e.getMessage() + "\n");
                errorText.append("SQLState:     " + e.getSQLState() + "\n");
                errorText.append("VendorError:  " + e.getErrorCode() + "\n");
        }
        public static void main(String[] args)
        {
                UpdateLender l = new UpdateLender();
                l.addWindowListener(new WindowAdapter()    {
                  public void windowClosing(WindowEvent e)
                  {             System.exit(0);            }
                });
                l.buildGUI();
        }
}
```

//PROGRAM FOR DELETING LENDER TABLE :

```
package abc;
import java.awt.*;
import java.awt.event.*;
import java.sql.*;
public class DeleteLender extends Frame
{
        Button deleteLenderButton;
```

```
List lenderIDList;

TextField nameText, lender_idText, contact_noText, money_lentText,deadlineText;

TextArea errorText;

Connection connection;

Statement statement;

ResultSet rs;

public DeleteLender()

{            try {

                     Class.forName("oracle.jdbc.driver.OracleDriver");

             }

             catch (Exception e) {

                     System.err.println("Unable to find and load driver");

                     System.exit(1);           }

             connectToDB();

}

public void connectToDB()

{            try {

              connection = DriverManager.getConnection("jdbc:oracle:thin:@localhost:1521:xe","vinuthna","9989");

              statement = connection.createStatement();

             }

             catch (SQLException connectException) {

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

              System.out.println(connectException.getSQLState());

              System.out.println(connectException.getErrorCode());

              System.exit(1); }

}

private void loadLenders()

{             try {

              rs = statement.executeQuery("SELECT * FROM lender");

              while (rs.next())

              {

                     lenderIDList.add(rs.getString("LENDER_ID"));

              }

             }

             catch (SQLException e)

             {       displaySQLErrors(e);    }
```

```
        }
        public void buildGUI()
        {
                lenderIDList = new List(10);
                loadLenders();
                add(lenderIDList);
                lenderIDList.addItemListener(new ItemListener()
                {
                        public void itemStateChanged(ItemEvent e)
                        {               try {
                                                rs = statement.executeQuery("SELECT * FROM lender");
                                                while (rs.next())
                                                {
                                                if(rs.getString("LENDER_ID").equals(lenderIDList.getSelectedItem()))
                                                break;
                                                }
                                                if (!rs.isAfterLast())
                                                {
        lender_idText.setText(rs.getString("LENDER_ID"));
        nameText.setText(rs.getString("NAME"));
        contact_noText.setText(rs.getString("CONTACT_NO"));
        money_lentText.setText(rs.getString("MONEY_LENT"));
        deadlineText.setText(rs.getString("DEADLINE"));
                                                }
                                }
                                catch (SQLException selectException)
                                {       displaySQLErrors(selectException);      }
                        }
                });
                deleteLenderButton = new Button("Delete Lender");
                deleteLenderButton.addActionListener(new ActionListener()
                {
                        public void actionPerformed(ActionEvent e)
                        {               try  {
                                                Statement statement = connection.createStatement();
                                                int   i   =   statement.executeUpdate("DELETE   FROM   lender   WHERE   LENDER_ID   ="   +
lenderIDList.getSelectedItem());
```

```
                        errorText.append("\nDeleted " + i + " rows successfully");
                        lender_idText.setText(null);        nameText.setText(null);
                        contact_noText.setText(null);       money_lentText.setText(null);
                        deadlineText.setText(null);         lenderIDList.removeAll();
                        loadLenders();
                    }
                    catch (SQLException insertException) {
                        displaySQLErrors(insertException); }
                }
            });
            lender_idText = new TextField(15); lender_idText.setEditable(false);
            nameText = new TextField(15);       money_lentText = new TextField(15);
            contact_noText = new TextField(15); deadlineText = new TextField(15);
            errorText = new TextArea(10, 40);
            errorText.setEditable(false);
            Panel first = new Panel();          first.setLayout(new GridLayout(5, 2));
            first.add(new Label("Lender ID:")); first.add(lender_idText);
            first.add(new Label("Name:"));      first.add(nameText);
            first.add(new Label("Contact no:")); first.add(contact_noText);
            first.add(new Label("Money Lent:")); first.add(money_lentText);
            first.add(new Label("Deadline:"));   first.add(deadlineText);
            Panel second = new Panel(new GridLayout(4, 1));
            second.add(deleteLenderButton);
            Panel third = new Panel();          third.add(errorText);
            add(first);   add(second);  add(third);
            setTitle("Remove Lender");
            setSize(450, 600);      setLayout(new FlowLayout());
            setVisible(true);
        }
        private void displaySQLErrors(SQLException e)
        {
            errorText.append("\nSQLException: " + e.getMessage() + "\n");
            errorText.append("SQLState:     " + e.getSQLState() + "\n");
            errorText.append("VendorError:  " + e.getErrorCode() + "\n");
        }
        public static void main(String[] args)
```

```
            {
                        DeleteLender d = new DeleteLender();
                        d.addWindowListener(new WindowAdapter(){
                          public void windowClosing(WindowEvent e)
                          {           System.exit(0);          }
                        });
                        d.buildGUI();                          }
}
```

//MAIN PROGRAM:

```
package abc;
import java.awt.*;
import java.awt.event.*;
public class PoliciesForDelayPayment extends Frame implements ActionListener{
            String msg = "";        Label ll;
             InsertLender inl;;       UpdateLender upl;     DeleteLender dell;
             InsertBorrower inb;      UpdateBorrower upb;  DeleteBorrower delb;
             InsertProperty inp;      UpdateProperty upp;   DeleteProperty delp;
             InsertNotices inn;       UpdateNotices upn;    DeleteNotices deln;
             InsertLender_Borrower inlb;        UpdateLender_Borrower uplb;        DeleteLender_Borrower dellb;
             InsertBorrower_Notices inbn;       UpdateBorrower_Notices upbn;       DeleteBorrower_Notices delbn;
             InsertLender_Property inlp;        UpdateLender_Property;             DeleteLender_Property dellp;
            PoliciesForDelayPayment()
             {
                                    ll = new Label();           ll.setAlignment(Label.CENTER);
                                    ll.setBounds(15,150,350,150);        ll.setText("Welcome to Life Pay Policies!!!");
                                    add(ll);      MenuBar mbar = new MenuBar();
                                    setMenuBar(mbar);
                                    MenuItem item1, item2, item3,item4, item5,item6, item7, item8,item9,item10, item11,item12,item13,item14,item15,
                                    item16,item17,item18,item19,item20,item21;
                                    Menu lender = new Menu("Lenders");
                                    lender.add(item1 = new MenuItem("Insert Lender"));
                                    lender.add(item2 = new MenuItem("View Lender"));
                                    lender.add(item3 = new MenuItem("Delete Lender"));
                                    Menu borrower = new Menu("Borrowers");
                                    borrower.add(item4 = new MenuItem("Insert Borrower"));
borrower.add(item5 = new MenuItem("View Borrower"));
borrower.add(item6 = new MenuItem("Delete Borrower"));
Menu property = new Menu("Properties");
property.add(item7 = new MenuItem("Insert Property"));
property.add(item8 = new MenuItem("View Property"));
property.add(item9 = new MenuItem("Delete Property"));
Menu notices = new Menu("Notices");
notices.add(item10 = new MenuItem("Insert Notices"));
notices.add(item11 = new MenuItem("View Notices"));
notices.add(item12 = new MenuItem("Delete Notices"));
Menu l_b = new Menu("Lender_Borrower");
l_b.add(item13 = new MenuItem("Insert Lender_Borrower"));
l_b.add(item14 = new MenuItem("View Lender_Borrower"));
l_b.add(item15 = new MenuItem("Delete Lender_Borrower"));
Menu b_n = new Menu("Borrower_Notice");
b_n.add(item16 = new MenuItem("Insert Borrower_Notice"));
b_n.add(item17 = new MenuItem("View Borrower_Notice"));
b_n.add(item18 = new MenuItem("Delete Borrower_Notice"));
Menu l_p = new Menu("Lender_Property");
l_p.add(item19 = new MenuItem("Insert Lender_Property"));
l_p.add(item20 = new MenuItem("View Lender_Property"));
l_p.add(item21 = new MenuItem("Delete Lender_Property"));
mbar.add(lender);        mbar.add(borrower); mbar.add(property);
mbar.add(notices);       mbar.add(l_b);        mbar.add(b_n);        mbar.add(l_p);
item1.addActionListener(this);     item2.addActionListener(this);
item3.addActionListener(this);     item4.addActionListener(this);
item5.addActionListener(this);     item6.addActionListener(this);
item7.addActionListener(this);     item8.addActionListener(this);
item9.addActionListener(this);     item10.addActionListener(this);
item11.addActionListener(this);    item12.addActionListener(this);
item13.addActionListener(this);    item14.addActionListener(this);
item15.addActionListener(this);    item16.addActionListener(this);
item17.addActionListener(this);    item18.addActionListener(this);
item19.addActionListener(this);    item20.addActionListener(this);
item21.addActionListener(this);
addWindowListener(new WindowAdapter(){
```

```
                        public void windowClosing(WindowEvent we) {
                                System.exit(0);         }
                });
                setTitle("Strict Policies For Recovery of Delay Payment");
                setFont(new Font("Dialog", Font.ITALIC, 21));
                setLayout(null);        setSize(500, 450);      setVisible(true);
}
 public void actionPerformed(ActionEvent e)
 {
        String arg = e.getActionCommand();
         if(arg.equals("Insert Lender"))        {
                inl = new InsertLender();
                inl.addWindowListener(new WindowAdapter(){
                public void windowClosing(WindowEvent e)        {
                        inl.dispose();  }
                });
                inl.buildGUI();         }
        else if(arg.equals("View Lender"))   {
                upl = new UpdateLender();
                upl.addWindowListener(new WindowAdapter(){
                public void windowClosing(WindowEvent e)        {
                        upl.dispose(); }
                });
                upl.buildGUI();         }
        else if(arg.equals("Delete Lender")) {
                dell = new DeleteLender();
                dell.addWindowListener(new WindowAdapter(){
                public void windowClosing(WindowEvent e)        {
                        dell.dispose();         }
                });
                dell.buildGUI();        }
        else if(arg.equals("Insert Borrower"))   {
                inb = new InsertBorrower();
                inb.addWindowListener(new WindowAdapter(){
                public void windowClosing(WindowEvent e)        {
                        inb.dispose();  }
```

```
            });
            inb.buildGUI();  }
        else if(arg.equals("View Borrower"))  {
            upb = new UpdateBorrower();
            upb.addWindowListener(new WindowAdapter(){
            public void windowClosing(WindowEvent e)      {
                upb.dispose();  }
            });
            upb.buildGUI();  }
        else if(arg.equals("Delete Borrower")) {
            delb = new DeleteBorrower();
            delb.addWindowListener(new WindowAdapter(){
            public void windowClosing(WindowEvent e)      {
                delb.dispose();               }
            });
            delb.buildGUI();  }
        else if(arg.equals("Insert Property")) {
            inp = new InsertProperty();
            inp.addWindowListener(new WindowAdapter(){
            public void windowClosing(WindowEvent e)      {
                inp.dispose();  }
            });
            inp.buildGUI();  }
        else if(arg.equals("View Property")) {
            upp = new UpdateProperty();
            upp.addWindowListener(new WindowAdapter(){
            public void windowClosing(WindowEvent e)      {
                upp.dispose();                }
            });
            upp.buildGUI();  }
        else if(arg.equals("Delete Property")) {
            delp = new DeleteProperty();
            delp.addWindowListener(new WindowAdapter(){
            public void windowClosing(WindowEvent e)      {
                delp.dispose();               }
            });
```

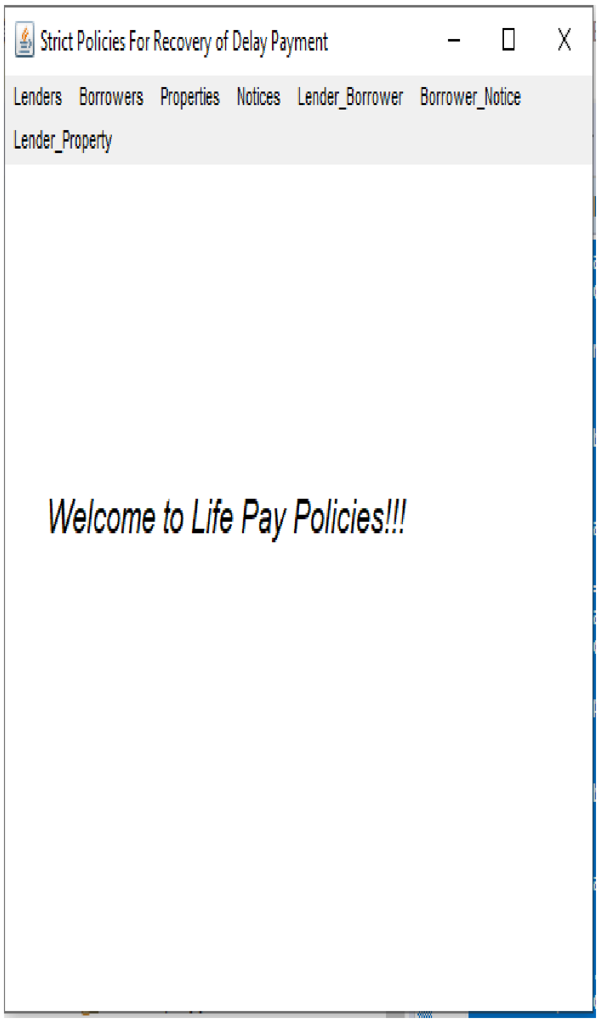
```
		delp.buildGUI();		}
	else if(arg.equals("Insert Notices")) {
		inn = new InsertNotices();
		inn.addWindowListener(new WindowAdapter(){
		public void windowClosing(WindowEvent e)	{
			inn.dispose();			}
		});
		inn.buildGUI();		}
	else if(arg.equals("View Notices")) {
		upn = new UpdateNotices();
		upn.addWindowListener(new WindowAdapter(){
		public void windowClosing(WindowEvent e)	{
			upn.dispose();			}
		});
		upn.buildGUI();		}
	else if(arg.equals("Delete Notices")) {
		deln = new DeleteNotices();
		deln.addWindowListener(new WindowAdapter(){
		public void windowClosing(WindowEvent e)
		{
			deln.dispose();  }
		});
		deln.buildGUI();		}
	else if(arg.equals("Insert Lender_Borrower"))
	{
		inlb = new InsertLender_Borrower();
		inlb.addWindowListener(new WindowAdapter(){
		public void windowClosing(WindowEvent e)	{
			inlb.dispose();			}
		});
		inlb.buildGUI();
	}
	 else if(arg.equals("View Lender_Borrower"))
	{
		uplb = new UpdateLender_Borrower();
		uplb.addWindowListener(new WindowAdapter(){
```

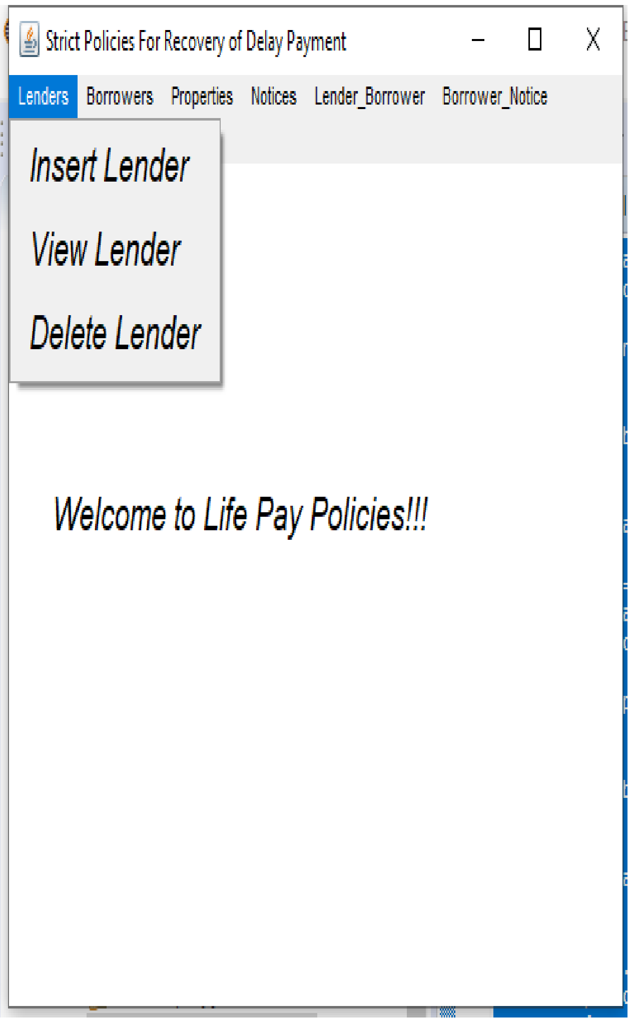
```
                public void windowClosing(WindowEvent e)        {
                        uplb.dispose();         }
                });
                uplb.buildGUI();
        }
         else if(arg.equals("Delete Lender_Borrower"))
        {
                dellb = new DeleteLender_Borrower();
                dellb.addWindowListener(new WindowAdapter(){
                public void windowClosing(WindowEvent e)        {
                        dellb.dispose();
                }
                });
          dellb.buildGUI();
        }
        else if(arg.equals("Insert Borrower_Notice"))
        {
                inbn = new InsertBorrower_Notices();
                inbn.addWindowListener(new WindowAdapter(){
                public void windowClosing(WindowEvent e)      {
                        inbn.dispose();         }
                });
                inbn.buildGUI();
        }
        else if(arg.equals("View Borrower_notice"))
        {
                upbn = new UpdateBorrower_Notices();
                upbn.addWindowListener(new WindowAdapter(){
                public void windowClosing(WindowEvent e)      {
                        upbn.dispose();         }
                });
                upbn.buildGUI();
        }
         else if(arg.equals("Delete Borrower_notice"))
        {
                delbn = new DeleteBorrower_Notices();
```

```
                        delbn.addWindowListener(new WindowAdapter(){
                        public void windowClosing(WindowEvent e)      {
                                delbn.dispose();
                        }
                        });
                  delbn.buildGUI();
                }
                else if(arg.equals("Insert Lender_Borrower"))
                {
                        inlb = new InsertLender_Borrower();
                        inlb.addWindowListener(new WindowAdapter(){
                        public void windowClosing(WindowEvent e)      {
                                inlb.dispose();               }
                        });
                        inlb.buildGUI();
                }
                else if(arg.equals("View Lender_Property"))
                {
                        uplp = new UpdateLender_Property();
                        uplp.addWindowListener(new WindowAdapter(){
                        public void windowClosing(WindowEvent e)          {
                                uplp.dispose();
                        }
                        });
                        uplp.buildGUI();
                }
               else if(arg.equals("Delete Lender_Property"))
                {
                        dellp = new DeleteLender_Property();
                        dellp.addWindowListener(new WindowAdapter(){
                        public void windowClosing(WindowEvent e)    {
                                dellp.dispose();              }
                        });
                  dellp.buildGUI();
                }
 }
```

```
        public static void main(String ... args)
        {
                    new PoliciesForDelayPayment();
        }
}
```

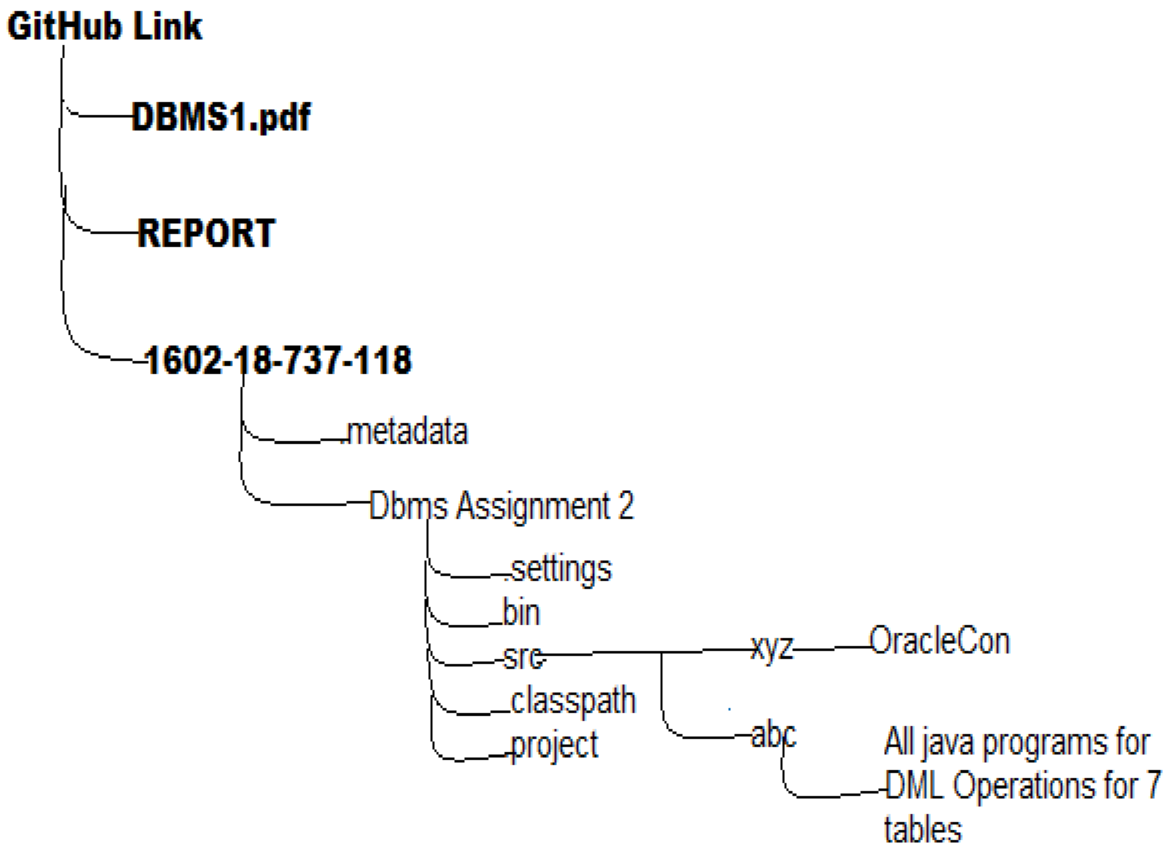
After executing main program, the following frames are displayed :

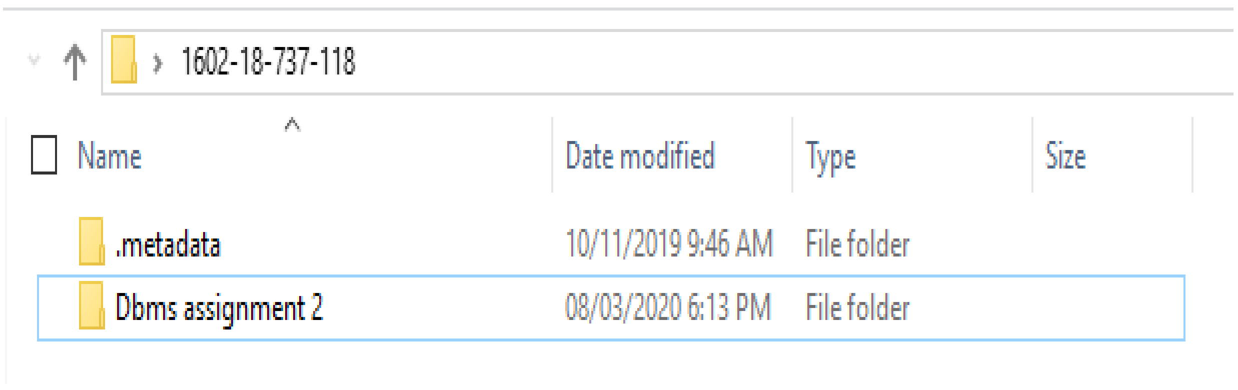




Github Link & Folder Structure :

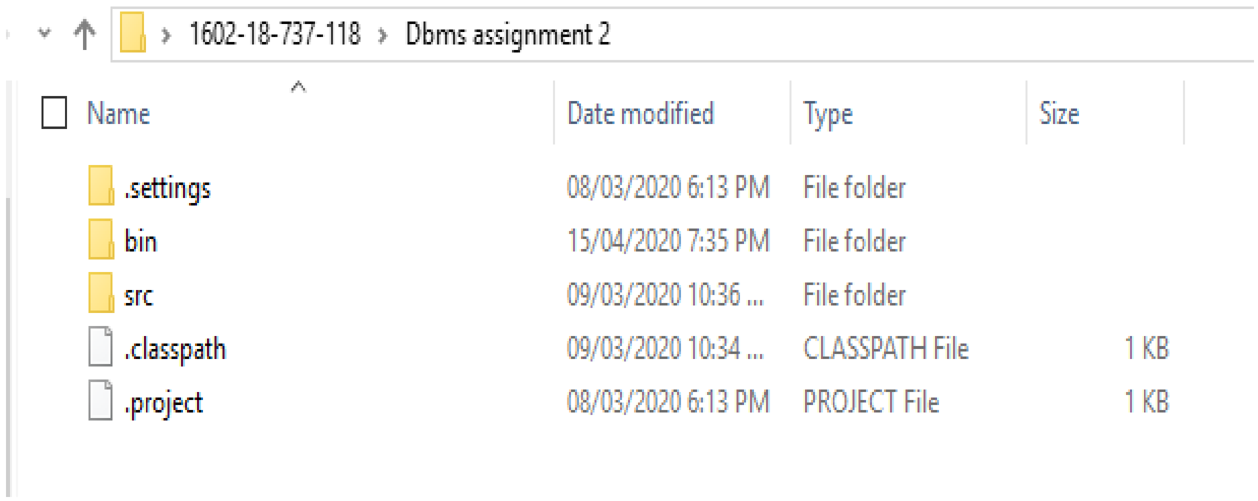
Link- https://github.com/Vinuthna123/DBMS-PROJECT.git





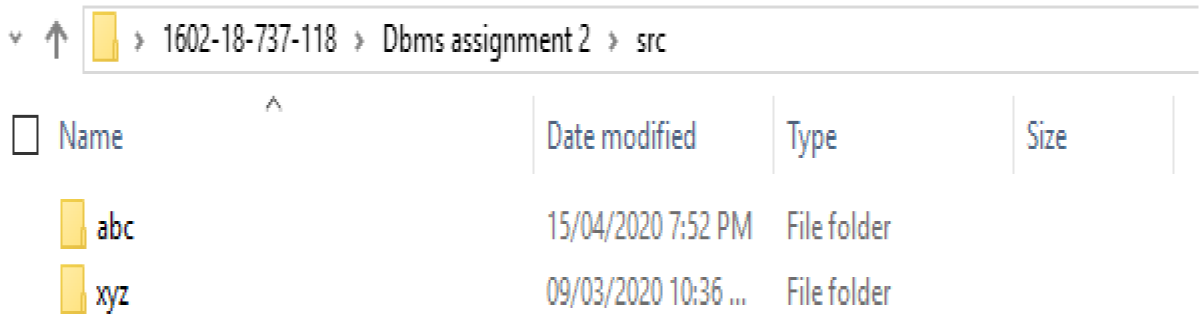
1602-18-737-118

Name	Date modified	Type	Size
.metadata	10/11/2019 9:46 AM	File folder	
Dbms assignment 2	08/03/2020 6:13 PM	File folder	



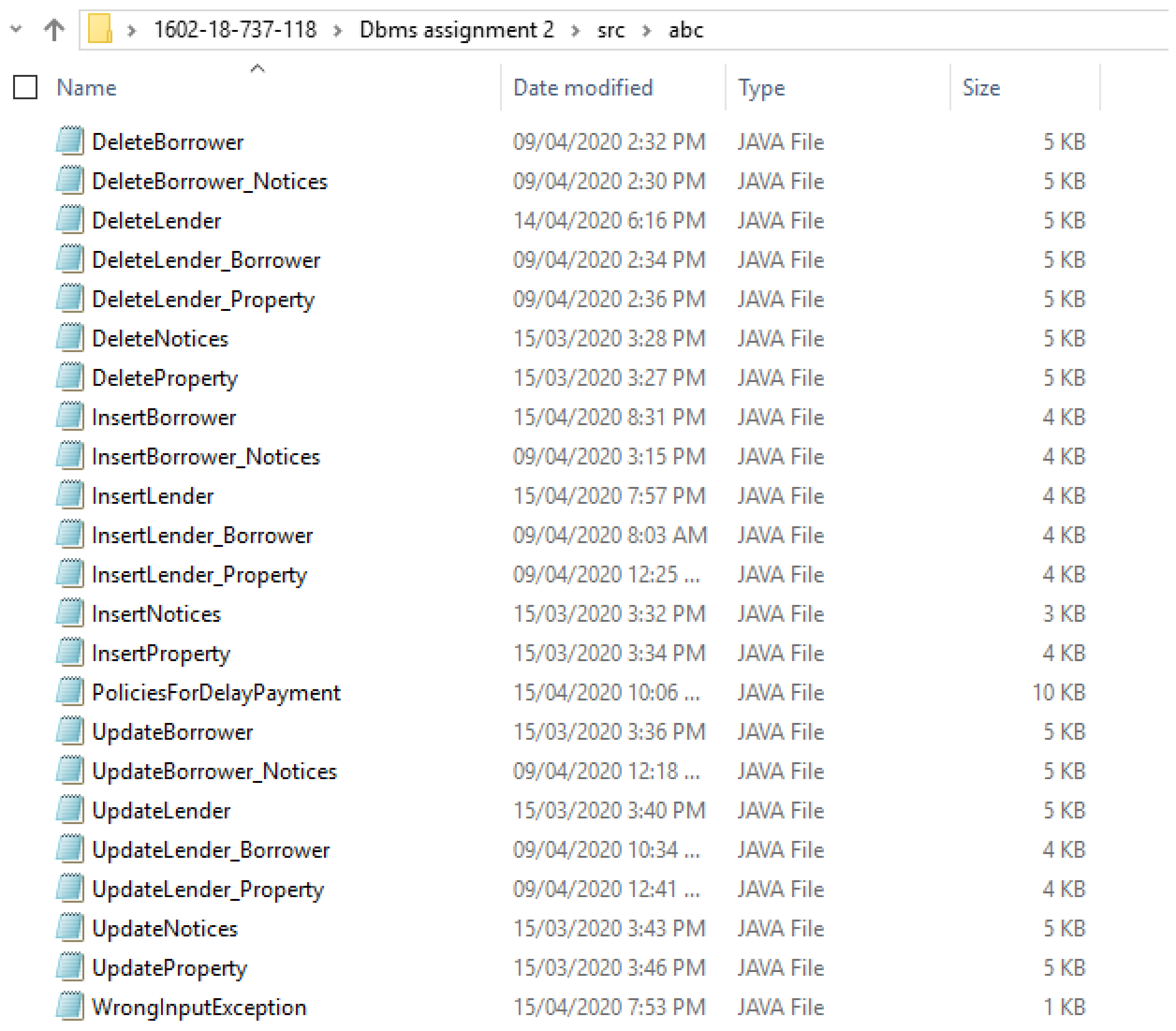
› 1602-18-737-118 › Dbms assignment 2

Name	Date modified	Type	Size
.settings	08/03/2020 6:13 PM	File folder	
bin	15/04/2020 7:35 PM	File folder	
src	09/03/2020 10:36 ...	File folder	
.classpath	09/03/2020 10:34 ...	CLASSPATH File	1 KB
.project	08/03/2020 6:13 PM	PROJECT File	1 KB



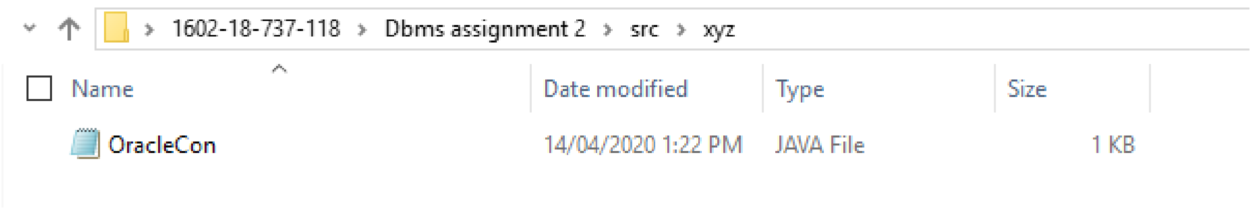
› 1602-18-737-118 › Dbms assignment 2 › src

Name	Date modified	Type	Size
abc	15/04/2020 7:52 PM	File folder	
xyz	09/03/2020 10:36 ...	File folder	



1602-18-737-118 › Dbms assignment 2 › src › abc

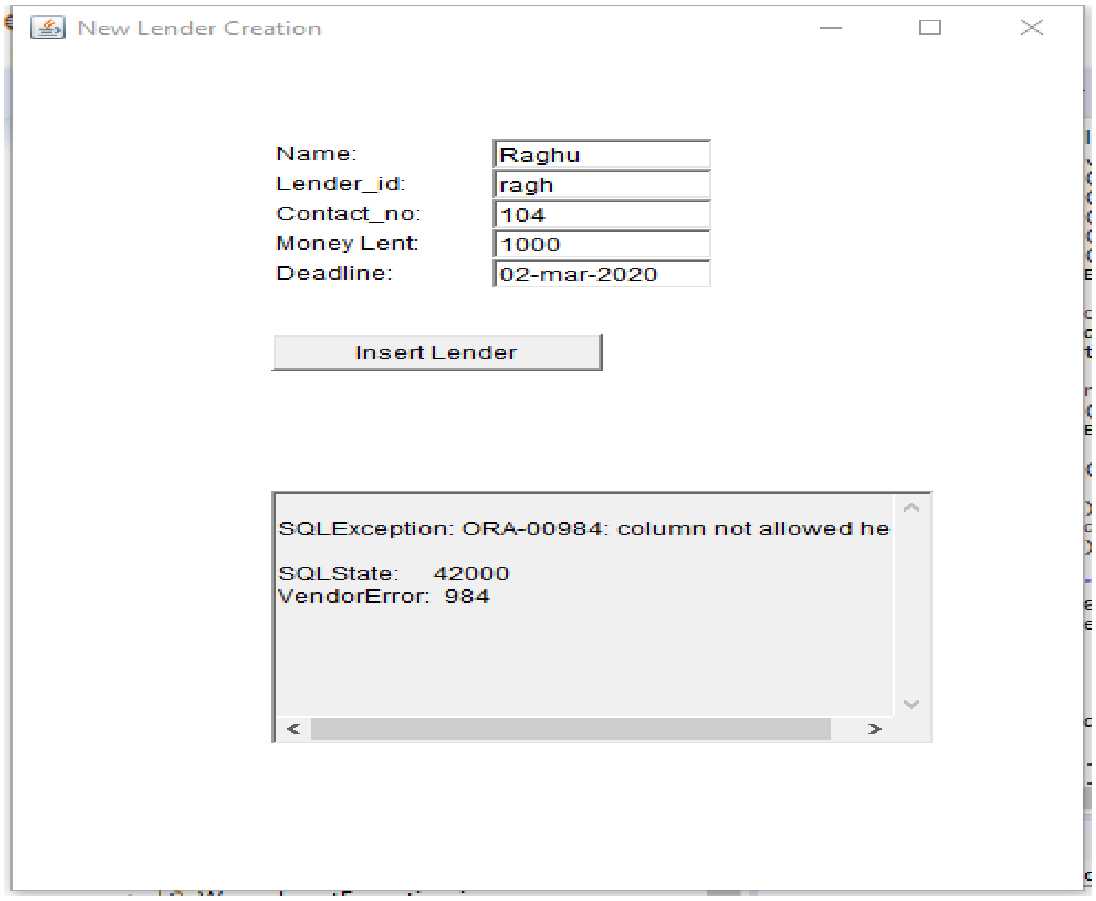
Name	Date modified	Type	Size
DeleteBorrower	09/04/2020 2:32 PM	JAVA File	5 KB
DeleteBorrower_Notices	09/04/2020 2:30 PM	JAVA File	5 KB
DeleteLender	14/04/2020 6:16 PM	JAVA File	5 KB
DeleteLender_Borrower	09/04/2020 2:34 PM	JAVA File	5 KB
DeleteLender_Property	09/04/2020 2:36 PM	JAVA File	5 KB
DeleteNotices	15/03/2020 3:28 PM	JAVA File	5 KB
DeleteProperty	15/03/2020 3:27 PM	JAVA File	5 KB
InsertBorrower	15/04/2020 8:31 PM	JAVA File	4 KB
InsertBorrower_Notices	09/04/2020 3:15 PM	JAVA File	4 KB
InsertLender	15/04/2020 7:57 PM	JAVA File	4 KB
InsertLender_Borrower	09/04/2020 8:03 AM	JAVA File	4 KB
InsertLender_Property	09/04/2020 12:25 ...	JAVA File	4 KB
InsertNotices	15/03/2020 3:32 PM	JAVA File	3 KB
InsertProperty	15/03/2020 3:34 PM	JAVA File	4 KB
PoliciesForDelayPayment	15/04/2020 10:06 ...	JAVA File	10 KB
UpdateBorrower	15/03/2020 3:36 PM	JAVA File	5 KB
UpdateBorrower_Notices	09/04/2020 12:18 ...	JAVA File	5 KB
UpdateLender	15/03/2020 3:40 PM	JAVA File	5 KB
UpdateLender_Borrower	09/04/2020 10:34 ...	JAVA File	4 KB
UpdateLender_Property	09/04/2020 12:41 ...	JAVA File	4 KB
UpdateNotices	15/03/2020 3:43 PM	JAVA File	5 KB
UpdateProperty	15/03/2020 3:46 PM	JAVA File	5 KB
WrongInputException	15/04/2020 7:53 PM	JAVA File	1 KB



1602-18-737-118 › Dbms assignment 2 › src › xyz

Name	Date modified	Type	Size
OracleCon	14/04/2020 1:22 PM	JAVA File	1 KB

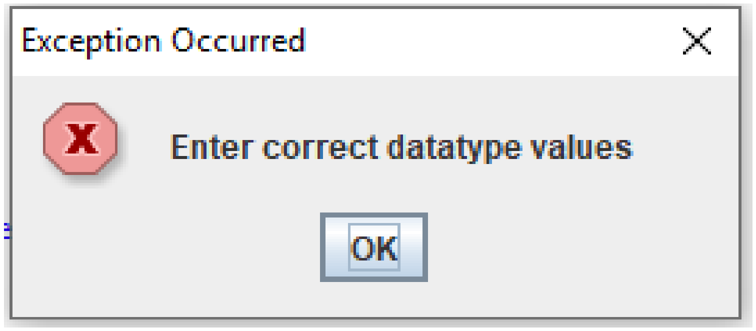
Testing :



Name:	Raghu
Lender_id:	ragh
Contact_no:	104
Money Lent:	1000
Deadline:	02-mar-2020

```
SQLException: ORA-00984: column not allowed he

SQLState:    42000
VendorError:  984
```

If incorrect values are entered which mismatch datatypes, the following pop up box is shown:

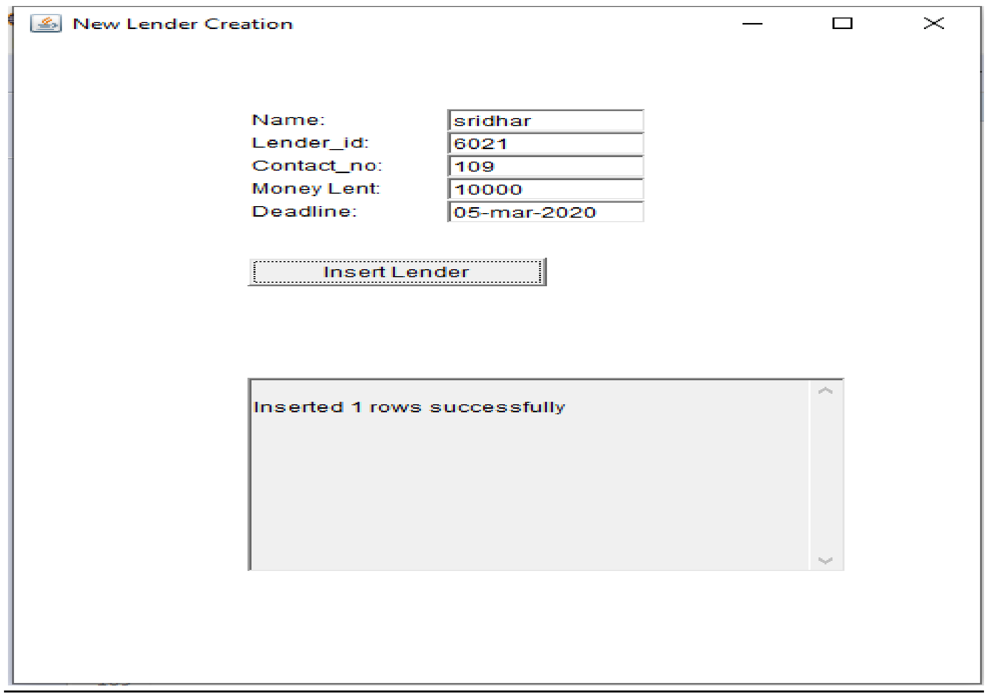


Enter correct datatype values

RESULTS :

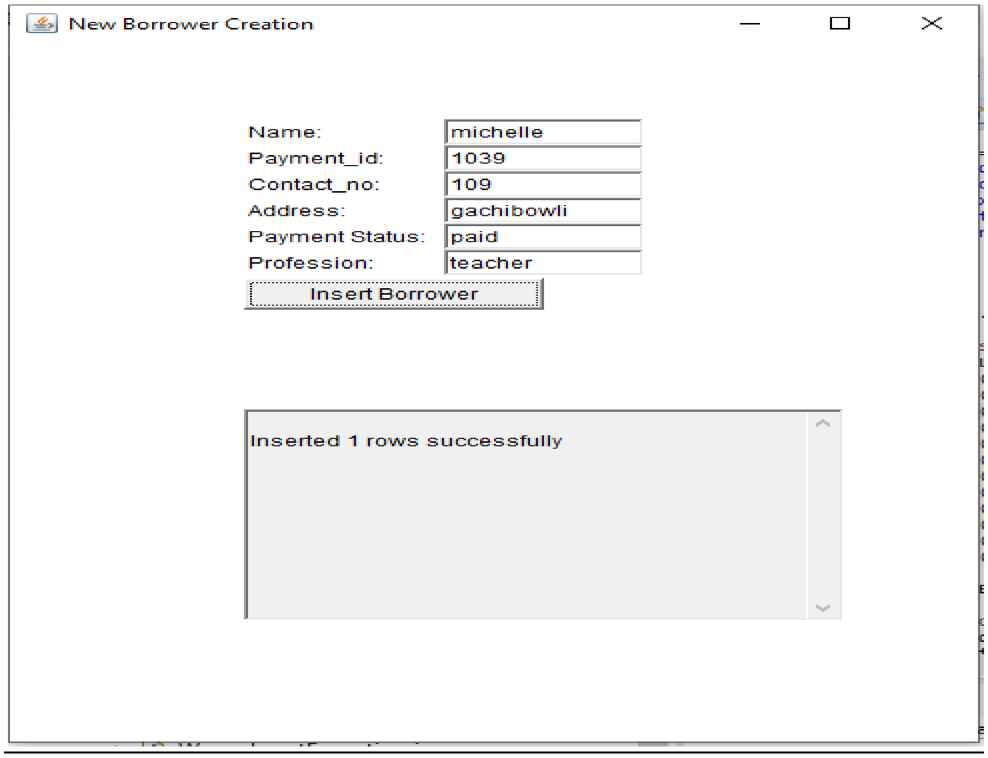
Here are DML operations for two tables Lender and Borrower

i.Insert :


New Lender Creation

Name:	sridhar
Lender_id:	6021
Contact_no:	109
Money Lent:	10000
Deadline:	05-mar-2020

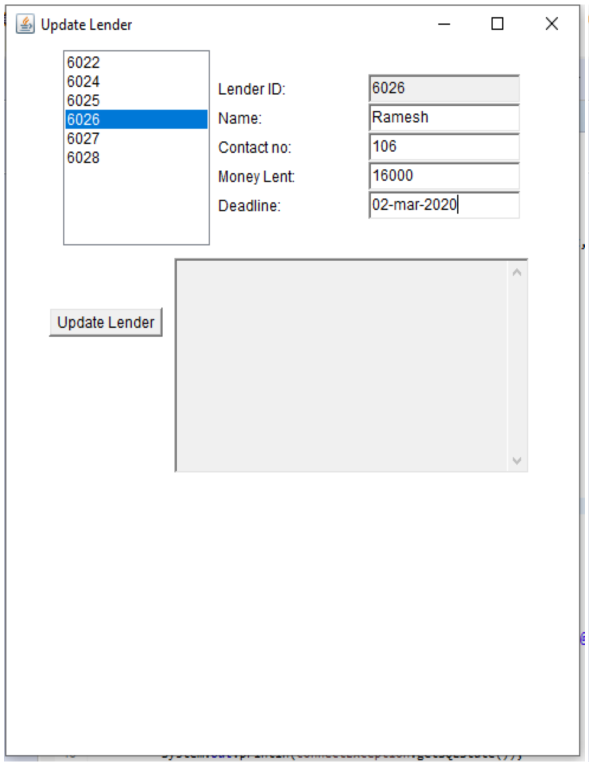
```
Inserted 1 rows successfully
```


New Borrower Creation

Name:	michelle
Payment_id:	1039
Contact_no:	109
Address:	gachibowli
Payment Status:	paid
Profession:	teacher

```
Inserted 1 rows successfully
```

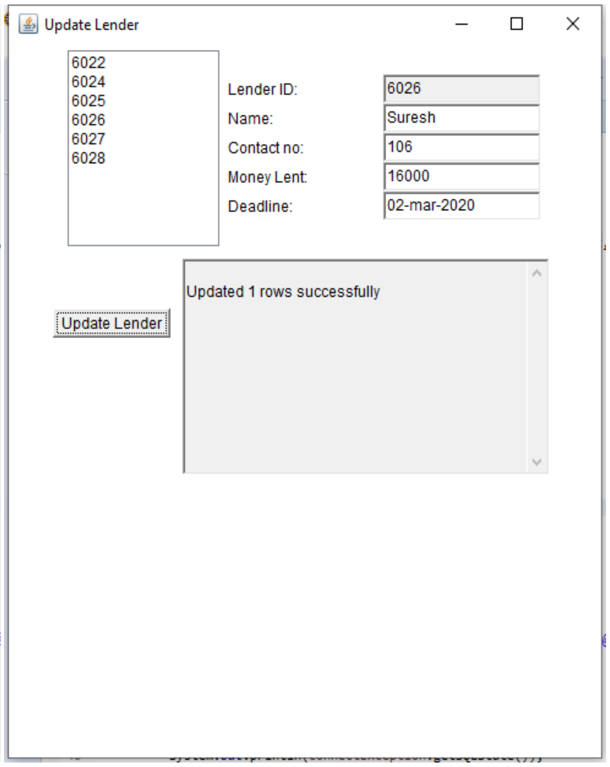
2.Update :



Update Lender

6022
6024
6025
6026
6027
6028

Lender ID:	6026
Name:	Ramesh
Contact no:	106
Money Lent:	16000
Deadline:	02-mar-2020

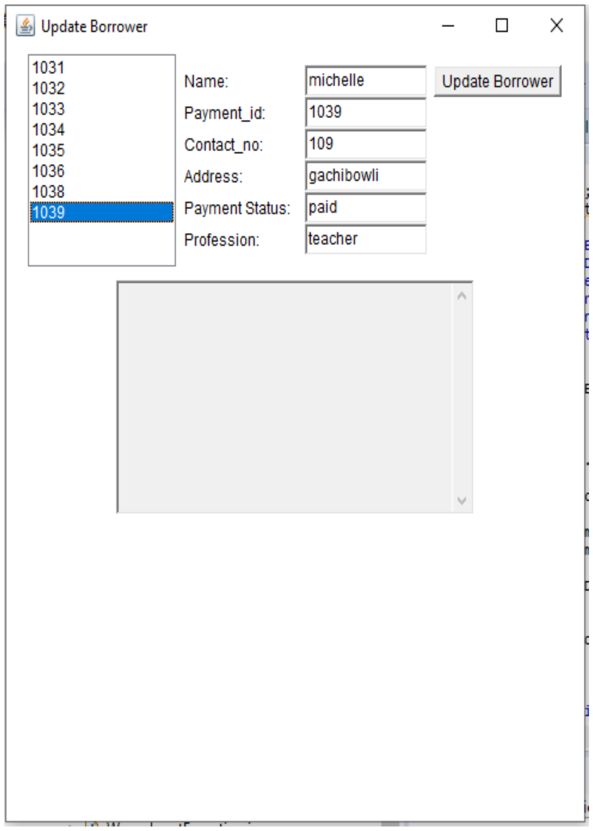


Update Lender

6022
6024
6025
6026
6027
6028

Lender ID:	6026
Name:	Suresh
Contact no:	106
Money Lent:	16000
Deadline:	02-mar-2020

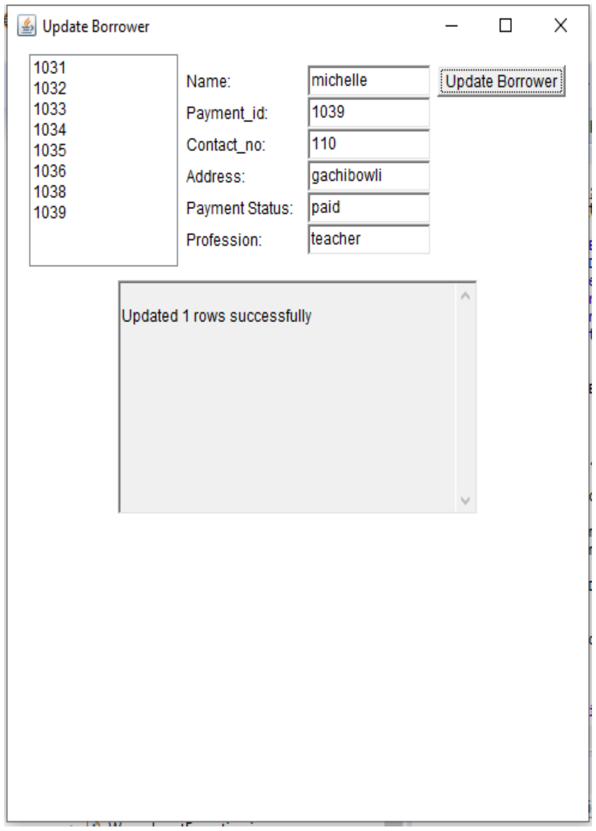
Updated 1 rows successfully



Update Borrower

1031
1032
1033
1034
1035
1036
1038
1039

Name:	michelle
Payment_id:	1039
Contact_no:	109
Address:	gachibowli
Payment Status:	paid
Profession:	teacher



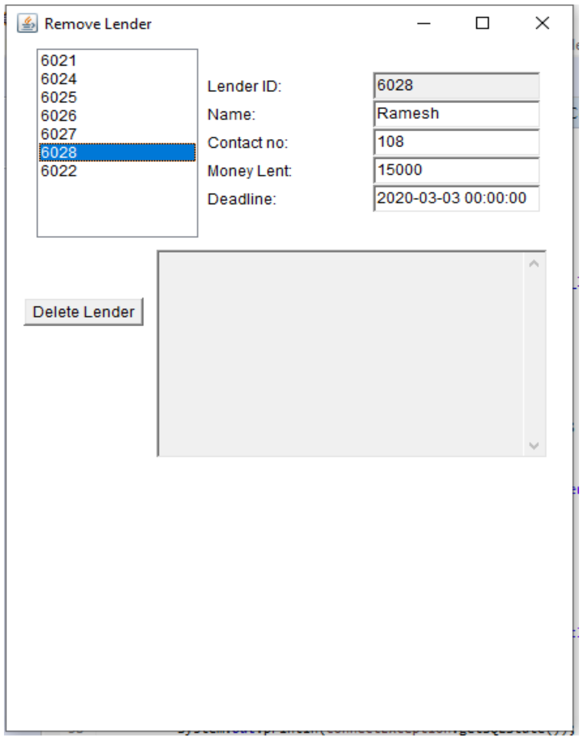
Update Borrower

1031
1032
1033
1034
1035
1036
1038
1039

Name:	michelle
Payment_id:	1039
Contact_no:	110
Address:	gachibowli
Payment Status:	paid
Profession:	teacher

Updated 1 rows successfully

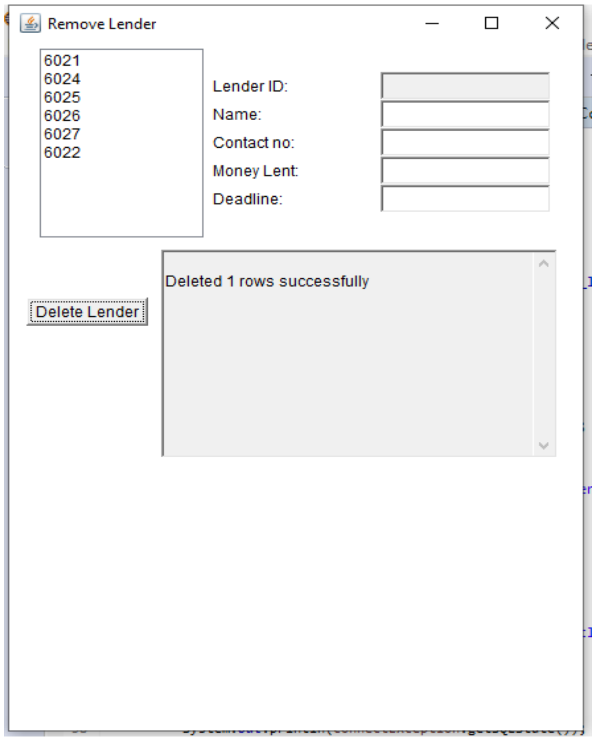
3.Delete :


Remove Lender

6021
6024
6025
6026
6027
6028
6022

Lender ID:	6028
Name:	Ramesh
Contact no:	108
Money Lent:	15000
Deadline:	2020-03-03 00:00:00

Delete Lender

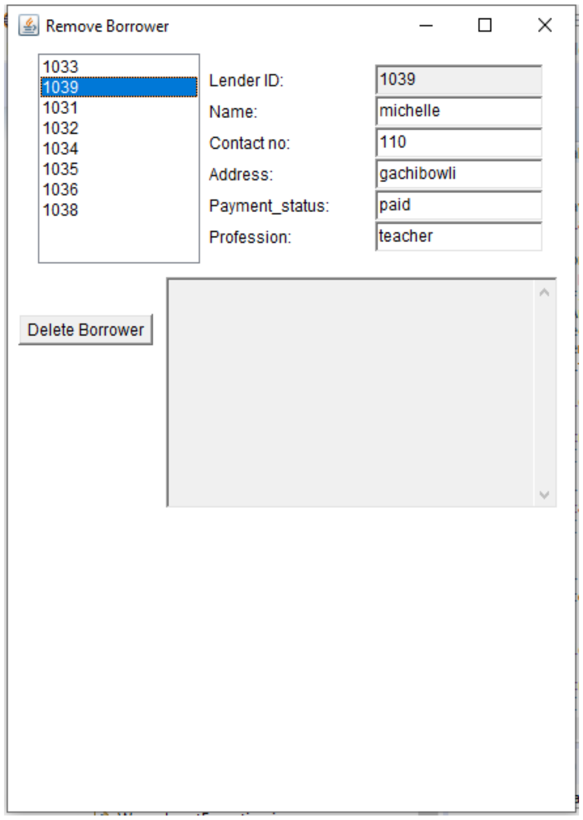

Remove Lender

6021
6024
6025
6026
6027
6022

Lender ID:	
Name:	
Contact no:	
Money Lent:	
Deadline:	

Delete Lender

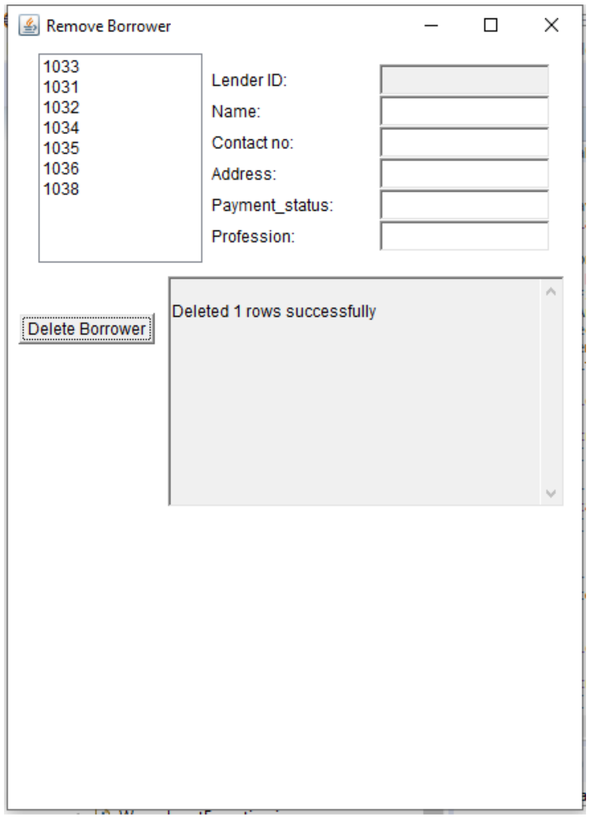
Deleted 1 rows successfully


Remove Borrower

1033
1039
1031
1032
1034
1035
1036
1038

Lender ID:	1039
Name:	michelle
Contact no:	110
Address:	gachibowli
Payment_status:	paid
Profession:	teacher

Delete Borrower


Remove Borrower

1033
1031
1032
1034
1035
1036
1038

Lender ID:	
Name:	
Contact no:	
Address:	
Payment_status:	
Profession:	

Delete Borrower

Deleted 1 rows successfully

DISCUSSION & FUTURE WORK :

The application done till now is basically how to get back money from the borrower the lender gave and here it showed that it can be recovered from by seizing the property. There are numerous other ways in which we can recover the amount lent. Furthermore, other programming languages can also be used along with database by connecting SQL with it. Other actors can be included like guaranteer and policy manager and other attributes can also be added to extend the application.

REFERENCES :

https://www.oracle.com/technetwork/java/javase/documentation/index.html

https://nptel.ac.in/courses/106105175/

https://google.github.io/styleguide/javaguide.html

https://nptel.ac.in/courses/106105191/