

## **BANK MANAGEMENT SYSTEM PROJECT**

**Title:** Bank Management System

### **Abstract:**

Designing the database which enables the Bank to Login to the system to store customer information. It lets bank admin to keep the records of customers account details, transaction details and loan details. The system also allows deposit and withdrawal of money and check account balance.

### **Modules:**

Login Module

Customer Details Module

Transactions Module

Balance Enquiry Module

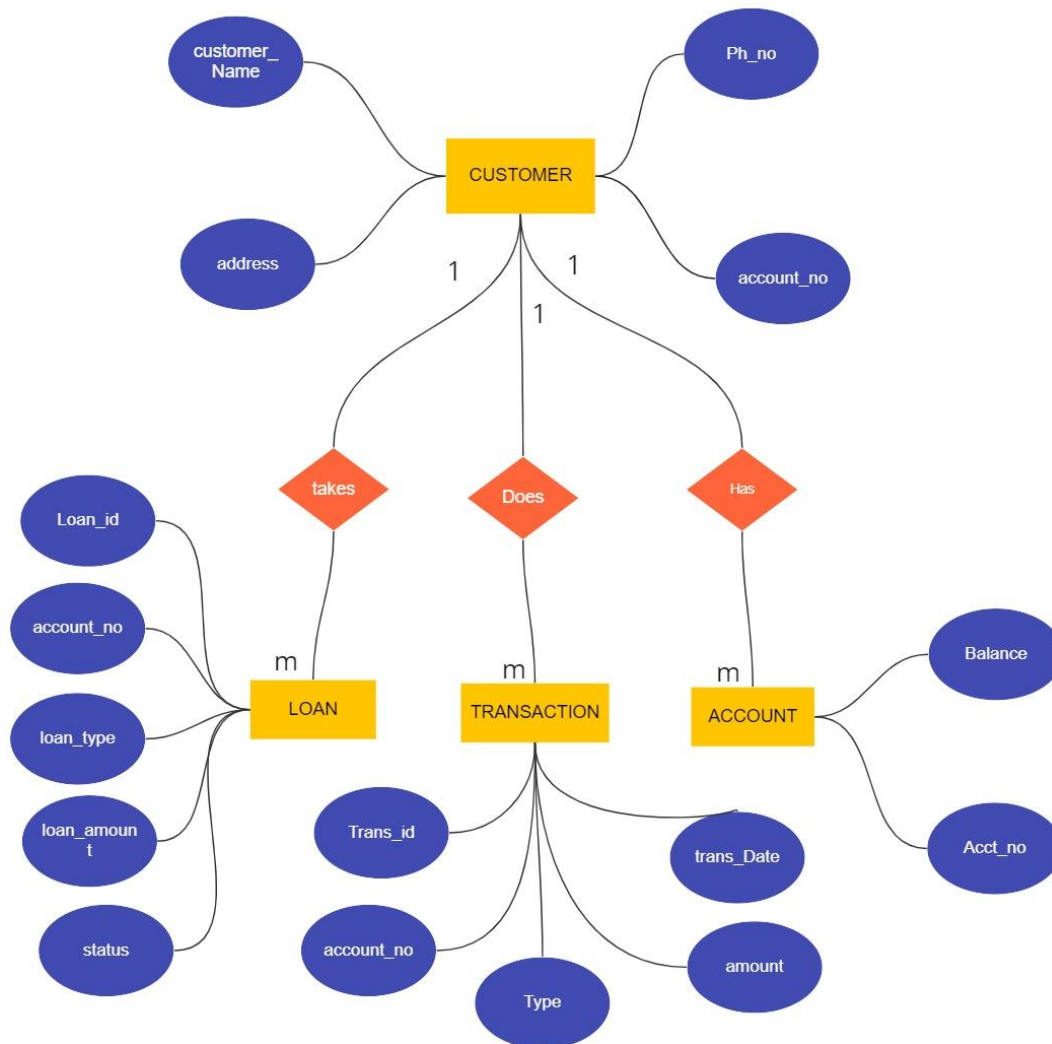
Loan Details Module

### **Tools to be used**

Front End tool: C#

Back End tool: Oracle

## ER Diagram:



## Relational Diagram:

### CUSTOMER

CUSTOMER_NAME	ACCOUNT_NO	PH_NO	ADDRESS
---------------	------------	-------	---------

### ACCOUNT

ACCOUNT_NO	BALANCE
------------	---------

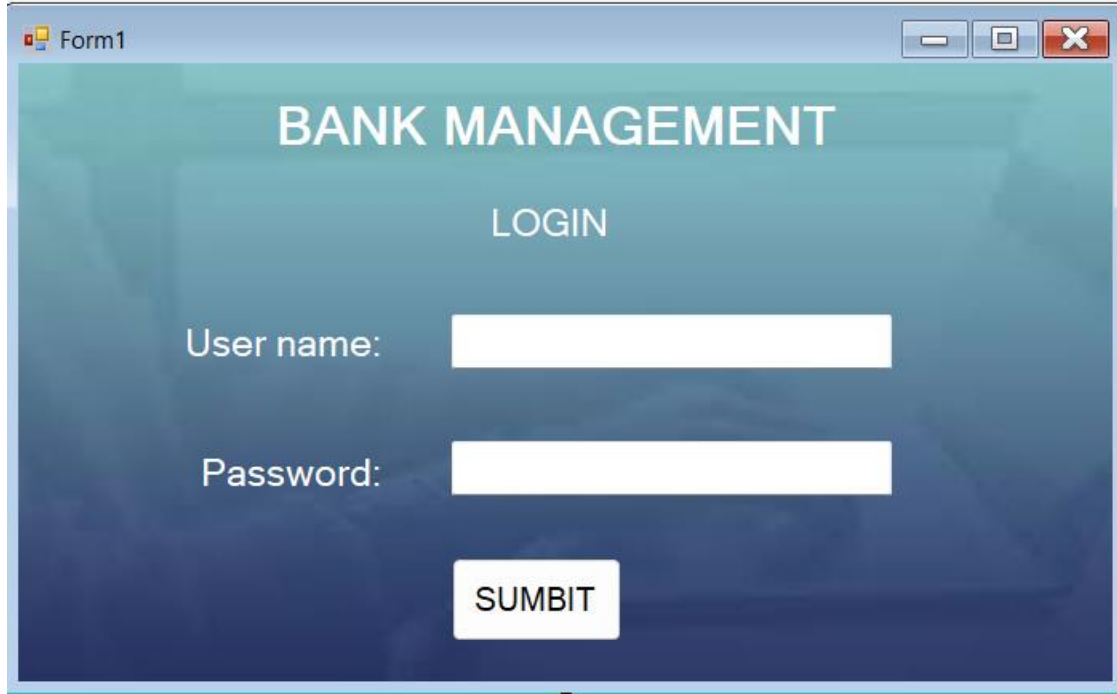
### TRANSACTION

TRANS_ID	TRANS_DATE	ACCOUNT_NO	ACCOUNT	TYPE
----------	------------	------------	---------	------

### LOAN

LOAN_ID	ACCOUNT_NO	LOAN_TYPE	LOAN_AMOUNT	STATUS
---------	------------	-----------	-------------	--------

## Login Page: Design



The image shows a Windows application window titled "Form1". The window contains a login form with a blue gradient background. The text "BANK MANAGEMENT" is displayed at the top in white. Below it, the word "LOGIN" is centered. There are two input fields: "User name:" and "Password:". At the bottom, there is a button labeled "SUMBIT".

## Code

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using Oracle.DataAccess.Client; // ODP.NET Oracle managed provider
using Oracle.DataAccess.Types;
```

```
namespace DBMS
{
    public partial class login : Form
    {
        public login()
        {
            InitializeComponent();
        }

        private void Form1_Load(object sender, EventArgs e)
        {
        }
    }
}
```

```

private void label1_Click(object sender, EventArgs e)
{

}

private void textBox1_TextChanged(object sender, EventArgs e)
{

}
private void label4_Click(object sender, EventArgs e)
{
}
private void password_TextChanged(object sender, EventArgs e)
{
}
private void button1_Click(object sender, EventArgs e)
{
    if (userID.Text == "")
    {
        MessageBox.Show("Enter User name");
    }
    else if (password.Text == "")
    {
        MessageBox.Show("Enter Password!!!");
    }
    else if (userID.Text == "Abhishek" && password.Text == "123456")
    {
        this.Hide();
        Form frm6 = new home();
        frm6.ShowDialog();
    }
    else
    {
        MessageBox.Show("Invalid Credential");
    }
}

private void label3_Click(object sender, EventArgs e)
{
}
}
}

```

## Home Page: Design



## Code:

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using Oracle.DataAccess.Client; // ODP.NET Oracle managed provider
using Oracle.DataAccess.Types;
```

```
namespace DBMS
{
    public partial class home : Form
    {
        public home()
        {
            InitializeComponent();
        }
    }
}
```

```

private void Form2_Load(object sender, EventArgs e)
{

}

private void button2_Click(object sender, EventArgs e)
{
    this.Hide();
    Form frm6 = new customer();
    frm6.ShowDialog();
}

private void button1_Click(object sender, EventArgs e)
{
    this.Hide();
    Form frm6 = new account();
    frm6.ShowDialog();
}

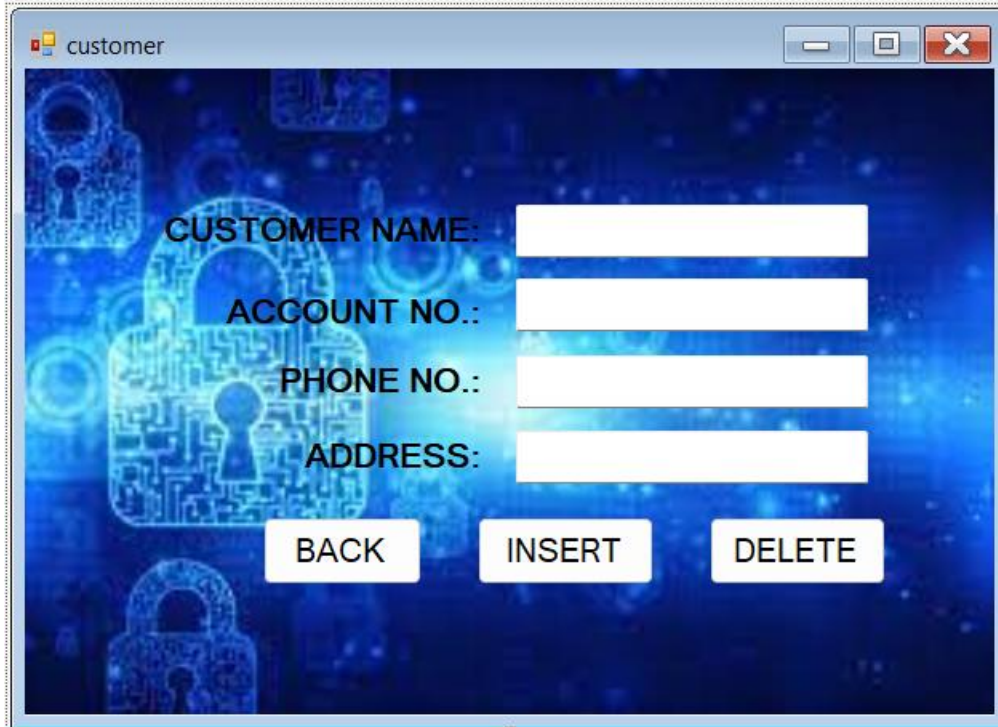
private void button3_Click(object sender, EventArgs e)
{
    this.Hide();
    Form frm6 = new loan();
    frm6.ShowDialog();
}

private void button4_Click(object sender, EventArgs e)
{
    this.Hide();
    Form frm6 = new transaction();
    frm6.ShowDialog();
}

private void button5_Click(object sender, EventArgs e)
{
    Application.Exit();
}
}
}

```

## Customer Details: Design



The screenshot shows a Windows application window titled "customer". The window has a blue background with a large, glowing padlock icon and circuit patterns. It contains four text input fields labeled "CUSTOMER NAME:", "ACCOUNT NO.:", "PHONE NO.:", and "ADDRESS:". Below the fields are three buttons: "BACK", "INSERT", and "DELETE".

## Code:

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using Oracle.DataAccess.Client; // ODP.NET Oracle managed provider
using Oracle.DataAccess.Types;
```

```
namespace DBMS
{
    public partial class customer : Form
    {
        int temp,temp1;
        public customer()
        {
            InitializeComponent();
        }

        private void Form3_Load(object sender, EventArgs e)
        {
        }
    }
}
```



```

private void textBox1_TextChanged(object sender, EventArgs e)
{

}

private void button1_Click(object sender, EventArgs e)
{
    if (textBox1.Text == "")
    {
        MessageBox.Show("Enter account_no.");
    }
    else
    {
        temp=temp1 = 0;
        string oradb = "Data Source=localhost;User Id=bank;Password=bank";
        string query = "delete from customer where account_no=" + textBox1.Text.Trim() ;
        string query2 = "delete from account where account_no=" + textBox1.Text.Trim();

        OracleConnection conn = new OracleConnection(oradb); // C#
        conn.Open();
        OracleCommand cmd = new OracleCommand(query, conn);
        temp = cmd.ExecuteNonQuery();

        OracleCommand cmd2 = new OracleCommand(query2, conn);
        temp1 = cmd2.ExecuteNonQuery();

        if (temp > 0 && temp1>0)
            MessageBox.Show("DELETE SUCCESSFULL");
        else
            MessageBox.Show("OPERATION FAILED");
        conn.Dispose();
    }
}

private void button2_Click(object sender, EventArgs e)
{
    this.Hide();
    Form frm6 = new home();
    frm6.ShowDialog();
}

private void textBox2_TextChanged(object sender, EventArgs e)
{

}

private void button3_Click(object sender, EventArgs e)
{

```

```

    if (textBox2.Text == "" || textBox1.Text == "" || textBox3.Text == "" || textBox4.Text ==
    "")
    {
        MessageBox.Show("Enter all credentials");
    }
    else
    {
        temp = 0;
        temp1 = 0;
        string oradb = "Data Source=localhost;User Id=bank;Password=bank";
        string query = "insert into customer values(" +
textBox2.Text.Trim() + "," + textBox1.Text.Trim() + "," + textBox3.Text.Trim() + "," +
textBox4.Text.Trim() + ") " ;
        string query1 = "insert into account values(" + textBox1.Text.Trim() + "," + 500 + ") ";
        OracleConnection conn = new OracleConnection(oradb); // C#
        conn.Open();
        OracleCommand cmd = new OracleCommand(query, conn);
        OracleCommand cmd1 = new OracleCommand(query1, conn);
        temp = cmd.ExecuteNonQuery();
        temp1 = cmd1.ExecuteNonQuery();

        if (temp > 0 && temp1 > 0)
            MessageBox.Show("RECORD ADDED SUCCESSFULLY");
        else
            MessageBox.Show("INSERT OPERATION FAILED");
        conn.Dispose();
    }

}

private void label3_Click(object sender, EventArgs e)
{
}

private void textBox4_TextChanged(object sender, EventArgs e)
{
}

}
}

```

## Transaction: Design

transaction

ACCOUNT NO.:

AMOUNT:

DEPOSIT

WITHDRAWAL

BACK

VIEW TRANSACTIONS

## Code

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using Oracle.DataAccess.Client; // ODP.NET Oracle managed provider
using Oracle.DataAccess.Types;
```

```
namespace DBMS
{
    public partial class transaction : Form
    {
        int temp;
        public transaction()
        {
            InitializeComponent();
        }
    }
}
```

```

private void transaction_Load(object sender, EventArgs e)
{

}

private void button2_Click(object sender, EventArgs e)
{
    if (textBox1.Text == "" || textBox2.Text=="")
    {
        MessageBox.Show("Enter all credentials");
    }
    else
    {
        temp = 0;
        string oradb = "Data Source=localhost;User Id=bank;Password=bank";
        string query = "update account set balance=balance -" + textBox1.Text.Trim() + "
where account_no=" + textBox2.Text.Trim();

        OracleConnection conn = new OracleConnection(oradb); // C#
        conn.Open();

        string query7 = "select balance from account where account_no=" +
textBox2.Text.Trim();
        OracleCommand cmd7 = new OracleCommand(query7, conn);
        OracleDataReader rr = cmd7.ExecuteReader();
        rr.Read();
        int value;
        int.TryParse(textBox1.Text, out value);
        if (rr.GetInt32(0)<value )
        {
            MessageBox.Show("BALANCE IS INSUFFICIENT");
        }

        else{

            OracleCommand cmd = new OracleCommand(query, conn);
            temp = cmd.ExecuteNonQuery();

            if (temp > 0 )
            {
                string query1 = "insert into transaction
values(trunc(DBMS_RANDOM.VALUE(100, 1000)), sysdate," + textBox2.Text.Trim() + "," +
textBox1.Text.Trim() + "','withdraw')";
                OracleCommand cmd1 = new OracleCommand(query1, conn);
                cmd1.ExecuteNonQuery();
                string query3 = "select balance from account where account_no=" +
textBox2.Text.Trim();
                OracleCommand cmd3 = new OracleCommand(query3, conn);
                OracleDataReader dr = cmd3.ExecuteReader();

```

```

        dr.Read();
        MessageBox.Show("Balance= " + dr.GetInt32(0));
    }
    else
        MessageBox.Show("OPERATION FAILED");
    }
    conn.Dispose();
}
}

private void label1_Click(object sender, EventArgs e)
{

}

private void button3_Click(object sender, EventArgs e)
{
    if (textBox2.Text == "")
    {
        MessageBox.Show("Enter account_no.");
    }
    else
    {
        string oradb = "Data Source=localhost;User Id=bank;Password=bank";
        string query = "select * from transaction where account_no=" + textBox2.Text.Trim();
        OracleConnection conn = new OracleConnection(oradb); // C#
        conn.Open();

        OracleDataAdapter sda = new OracleDataAdapter(query, conn);
        DataTable ds = new DataTable();
        sda.Fill(ds);
        dataGridView1.DataSource = ds;
    }
}

private void button4_Click(object sender, EventArgs e)
{
    this.Hide();
    Form frm6 = new home();
    frm6.ShowDialog();
}

private void label2_Click(object sender, EventArgs e)
{

}

private void button1_Click(object sender, EventArgs e)
{

```

```

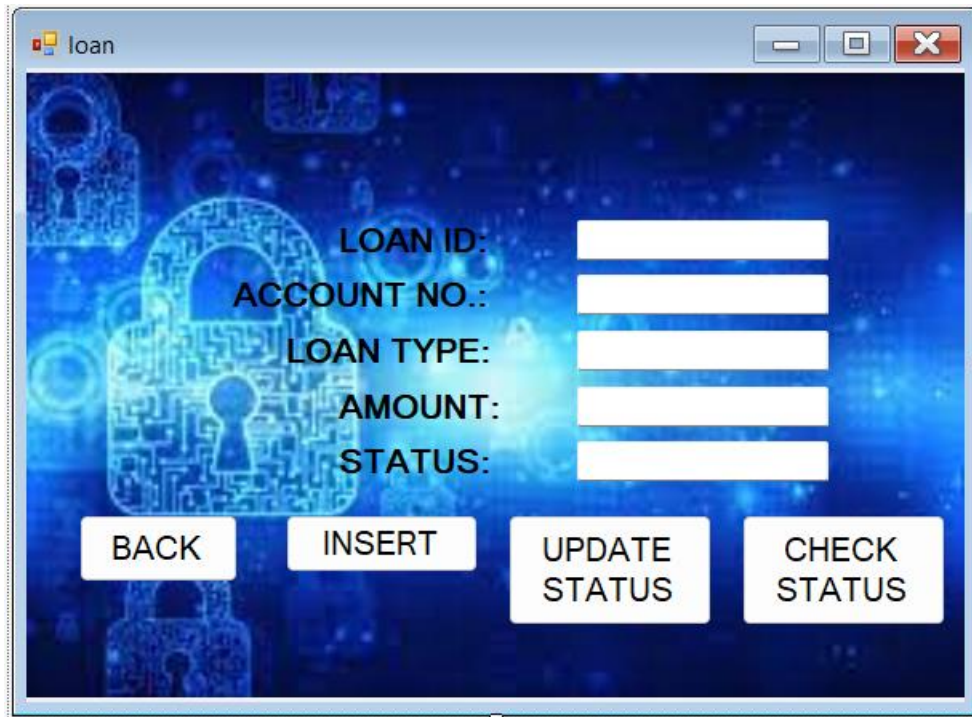
        if (textBox2.Text == "" || textBox1.Text == "")
        {
            MessageBox.Show("Enter all credentials");
        }
        else
        {
            temp= 0;
            string oradb = "Data Source=localhost;User Id=bank;Password=bank";
            string query = "update account set balance=balance + " + textBox1.Text.Trim()+ "
where account_no=" + textBox2.Text.Trim();

            OracleConnection conn = new OracleConnection(oradb); // C#
            conn.Open();
            OracleCommand cmd = new OracleCommand(query, conn);
            temp = cmd.ExecuteNonQuery();
            if (temp > 0 )
            {
                string query1 = "insert into transaction
values(trunc(DBMS_RANDOM.VALUE(100, 1000)), sysdate," + textBox2.Text.Trim() + "," +
textBox1.Text.Trim() + "','deposit')";
                OracleCommand cmd1 = new OracleCommand(query1, conn);
                cmd1.ExecuteNonQuery();
                string query3 = "select balance from account where account_no= " +
textBox2.Text.Trim();
                OracleCommand cmd3 = new OracleCommand(query3, conn);
                OracleDataReader dr = cmd3.ExecuteReader();
                dr.Read();
                MessageBox.Show("Balance= " + dr.GetInt32(0));
            }
            else
            {
                MessageBox.Show("OPERATION FAILED");
                conn.Dispose();
            }
        }
    }
    private void dataGridView1_CellContentClick(object sender, DataGridViewCellEventArgs
e)
    {
    }
}
}

```

## Loan:

## Design



The screenshot shows a Windows application window titled "loan". The window has a blue background with a large, glowing padlock icon. It contains five text input fields labeled "LOAN ID:", "ACCOUNT NO.:", "LOAN TYPE:", "AMOUNT:", and "STATUS:". Below these fields are four buttons: "BACK", "INSERT", "UPDATE STATUS", and "CHECK STATUS".

## Code

```
using System;
using System.Collections.Generic;
using System.ComponentModel;
using System.Data;
using System.Drawing;
using System.Linq;
using System.Text;
using System.Threading.Tasks;
using System.Windows.Forms;
using Oracle.DataAccess.Client; // ODP.NET Oracle managed provider
using Oracle.DataAccess.Types;
```

```
namespace DBMS
{
    public partial class loan : Form
    {
        int temp;
        public loan()
        {
            InitializeComponent();
        }

        private void loan_Load(object sender, EventArgs e)
        {

```

```

    }

    private void label1_Click(object sender, EventArgs e)
    {

    }

    private void label2_Click(object sender, EventArgs e)
    {

    }

    private void button2_Click(object sender, EventArgs e)
    {
        if (textBox1.Text == "" || textBox2.Text == "" || textBox3.Text == "" || textBox4.Text ==
"" || textBox5.Text == "")
        {
            MessageBox.Show("Enter all credentials");
        }
        else
        {
            temp = 0;
            string oradb = "Data Source=localhost;User Id=bank;Password=bank";
            string query = "insert into loan values(" + textBox1.Text.Trim() + "," +
textBox2.Text.Trim() + "," + textBox3.Text.Trim() + "," + textBox4.Text.Trim() + "," +
textBox5.Text.Trim() + ") ";
            OracleConnection conn = new OracleConnection(oradb); // C#
            conn.Open();
            OracleCommand cmd = new OracleCommand(query, conn);
            temp = cmd.ExecuteNonQuery();

            if (temp > 0 )
                MessageBox.Show("RECORD ADDED SUCCESSFULLY");
            else
                MessageBox.Show("INSERT OPERATION FAILED");
            conn.Dispose();
        }
    }

    private void button1_Click(object sender, EventArgs e)
    {
        if (textBox1.Text == "" || textBox2.Text == "" || textBox5.Text=="")
        {
            MessageBox.Show("Enter loan id.,account no. & status");
        }
        else
        {
            temp = 0;
            string oradb = "Data Source=localhost;User Id=bank;Password=bank";

```



```

        string query = "update loan set status='" + textBox5.Text.Trim() + "'where loan_id=" +
textBox1.Text.Trim() + " AND account_no=" + textBox2.Text.Trim() ;
        OracleConnection conn = new OracleConnection(oradb); // C#
        conn.Open();
        OracleCommand cmd = new OracleCommand(query, conn);
        temp = cmd.ExecuteNonQuery();

        if (temp > 0)
            MessageBox.Show("UPDATE SUCCESSFULL");
        else
            MessageBox.Show("OPERATION FAILED");
        conn.Dispose();
    }
}

private void label3_Click(object sender, EventArgs e)
{

}

private void button3_Click(object sender, EventArgs e)
{
    this.Hide();
    Form frm6 = new home();
    frm6.ShowDialog();
}

private void label4_Click(object sender, EventArgs e)
{

}

private void textBox5_TextChanged(object sender, EventArgs e)
{

}

private void button4_Click(object sender, EventArgs e)
{
    if (textBox1.Text == "" || textBox2.Text == "")
    {
        MessageBox.Show("Enter loan id.,account no.");
    }
    else
    {
        temp = 0;
        string oradb = "Data Source=localhost;User Id=bank;Password=bank";
        string query = "select status from loan where loan_id= " + textBox1.Text.Trim()+ "
AND account_no=" + textBox2.Text.Trim();
        OracleConnection conn = new OracleConnection(oradb); // C#

```

```
conn.Open();
OracleCommand cmd = new OracleCommand(query, conn);
OracleDataReader dr = cmd.ExecuteReader();
dr.Read();
try
{
    MessageBox.Show("status= " + dr.GetString(0));
}
catch
{
    MessageBox.Show("loan id or account no. does not exist ");
}
conn.Dispose();
}
}
}
```

## TABLES:

### CUSTOMER:

```
create table customer(customer_name varchar(30),account_no integer,ph_no integer,address
varchar(30))
```

```
insert into customer values('Riya', 54541234,1234567890,'Aquem-Goa')
```

```
insert into customer values('Dev', 60601234,9087654321,'Panaji-Goa')
```

```
insert into customer values('Sanvi', 53531234,9807654321,'Aquem-Goa')
```

```
insert into customer values('Jack', 12121234,9870654321,'Vasco-Goa')
```

```
select * from customer
```

CUSTOMER_NAME	ACCOUNT_NO	PH_NO	ADDRESS
Riya	54541234	1234567890	Aquem-Goa
Dev	60601234	9087654321	Panaji-Goa
Sanvi	53531234	9807654321	Aquem-Goa
Jack	12121234	9870654321	Vasco-Goa

### ACCOUNT:

```
create table account(account_no integer,balance integer)
```

```
insert into account values(54541234,6000)
```

```
insert into account values(60601234,12000)
```

```
insert into account values(53531234,8000)
```

```
insert into account values(12121234,2400)
```

```
select * from account
```

ACCOUNT_NO	BALANCE
54541234	6000
60601234	12000
53531234	8000
12121234	2400

## TRANSACTION:

```
create table transaction(trans_id integer,trans_date date,account_no integer,amount integer,type varchar(30))
```

```
insert into transaction values(101,'02-02-2022',53531234,1000,'deposit')
```

```
insert into transaction values(102,'05-03-2022',60601234,2000,'deposit')
```

```
insert into transaction values(103,'09-04-2022',54541234,1500,'withdraw')
```

```
insert into transaction values(104,'12-09-2022',60601234,5000,'deposit')
```

```
insert into transaction values(105,'12-11-2022',12121234,1000,'withdraw')
```

```
select * from transaction
```

TRANS_ID	TRANS_DATE	ACCOUNT_NO	AMOUNT	TYPE
101	02/02/2022	53531234	1000	deposit
102	05/03/2022	60601234	2000	deposit
103	09/04/2022	54541234	1500	withdraw
104	12/09/2022	60601234	5000	deposit
105	12/11/2022	12121234	1000	withdraw

## LOAN:

```
create table loan(loan_id integer,account_no integer,loan_type varchar(30),Loan_amount integer,status varchar(30))
```

```
insert into loan values(201,53531234,'Home Loan',2000000,'unpaid')
```

```
insert into loan values(202,54541234,'car Loan',1000000,'unpaid')
```

```
insert into loan values(203,60601234,'student Loan',1500000,'paid')
```

```
select * from loan
```

LOAN_ID	ACCOUNT_NO	LOAN_TYPE	LOAN_AMOUNT	STATUS
201	53531234	Home Loan	2000000	unpaid
202	54541234	car Loan	1000000	unpaid
203	60601234	student Loan	1500000	paid