Project Report

ON

"ATM SIMULATOR"

(using Core Java with Swing Function & Jframe)

Department of Computer Science & Application

Institute of Engineering & Technology

Under the Supervision of -

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ACKNOWLEDGMENT

It gives us great pleasure to present the synopsis of the B.Tech mini project (**ATM Simulator**) undertaken during B. Tech III Year. This project is going to be an acknowledgment of the inspiration, drive, and technical assistance that will be contributed to it by many individuals.

We owe a special debt of gratitude to **Mr. Amir Khan (Assistant Professor Department of CEA),** for providing us with an encouraging platform to develop this project, which thus helped in shaping our abilities towards a constructive goal, through his constant support and guidance to our work.

His thoroughness and perseverance have been a constant source of inspiration for us. We believe that he will supportus with all his experienced ideas and insightful comments at different stages of the project & also teach us about the latest industry-oriented technologies.

We also do not like to miss the opportunity to acknowledge the contribution of all department faculty members for their guidance and cooperation.

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ABSTRACT

The project aims to put forward a solution to solving the financial applications of a customer in a banking environment. The ATM Simulator is an application for maintaining a person's account in a bank.In this project, we tried to show the working of a banking account system and cover the basic functionality of a Bank.

The main aim of this project is to develop software for Bank Account Management System. By using Core Java and using Swing function and Jframe. This project has been developed to carry out the processeseasily and quickly, which is not possible with the manual systems, which are overcome by this software.

The algorithm is designed to provide an interactive content management system. The content management system deals with data entry, validation confirmation, and updating whiles the interactive system deals with system interaction with the administration and users. Thus, the above features of this project will save transaction time and increase the system's efficiency.

Computer Engineering and Application

GLA University, Mathura

BONAFIDE CERTIFICATE

Certified that this project report "ATM Simulator " is the bonafide work of the team:
(**Manali Sahu (201500380), Khushi Gupta (201500342), Kartikey Srivastava (201500329)**,who carried out the project work under my supervision.

Mentor: **Mr. Amir Khan**

Signature:

Submitted for the project :27-April -2023

INTERNAL EXAMINER :

EXTERNAL EXAMINER:

DECLARATION

We hereby declare that the work presented in this dissertation entitled “ATM Simulator ” has been done by me under the guidance of our mentor Mr**. Amir Khan**, and this dissertation embodies our work.

BY :

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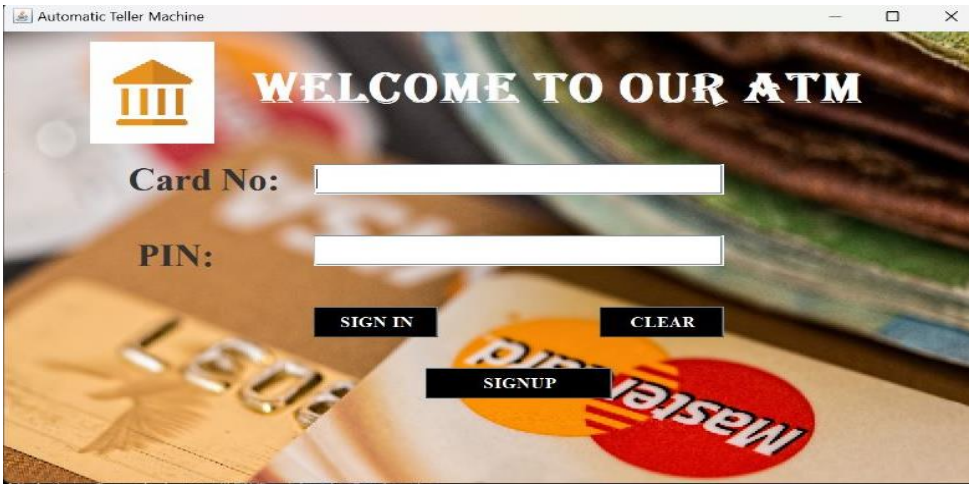
INTRODUCTION

The "**ATM Simulator**" project is a model of Internet Banking. This enables The customers to perform basic banking transactions by sitting at their office or at homethrough a PC or laptop. The system provides the access to the customer to create an
account deposit/withdraw cash from his account, and also to view reports of all accountspresent. The customers can access the bank's website for viewing their Account details and perform the transactions on the account as per their requirements.

Anybody who is an Account holder in this bank can become a member of the Bank Account Management System. He has to fill out a form with his personal details and Account Number. Bank is a place where customers feel a sense of safety for their property. In the bank, customers deposit and withdraw their money. Transaction of money also is also a part of it.An automatic pin and card number are generated for the
user from where he/she can able to sign in the process. There is the feature of depositionand withdrawing the money from the machine and account holders can also have mini statements of all the transactions he/she had done. All the details are stored in the
backend MySQL.

Now a day's, managing a bank is a tedious job up to a certain limit. So software that reduces the work is essential. Also, today's world is a genuine computer world and isgetting faster and faster day by day. Thus, considering the above necessities, softwarefor ATMs has become necessary which would be useful in managing the bank more
efficiently.
All transactions are carried out online by transferring from accounts in the same Bank orinternational bank. The software is meant to overcome the drawbacks of the manual system.



ABOUT THE PROJECT

CORE JAVA: Java is a popular high-level, class-based object- oriented programming language originally developed by Sun Microsystems and released in 1995. Currently, Java is owned by Oracle and more than 3 billion devices run Java. Java runs on a variety of platforms, such as Windows, Mac OS, and various versions of UNIX. Java is used to develop numerous types of software applications like Mobile apps, Web apps, Desktop apps, Games and much more.

- Java is Open Source which means it's available free of cost.
- Java is simple and so easy to learn
- Java has powerful development tools
- Java is platform independent

MySQL: MySQL is currently the most popular database managementsystem software used for managing the relational database. It is open- source database software, which is supported by Oracle Company. It isa fast, scalable, and easy-to-use database management system in comparison with Microsoft SQL Server and Oracle

Swing method: Java Swing is a part of Java Foundation Classes (JFC) that is *used to create window-based applications*. It is built on top of AWT (Abstract Windowing Toolkit) API and entirely written in Java. Unlike AWT, Java Swing provides platform-independent and lightweight components. The javax.swing package provides classes for java swing API such as JButton, JTextField, JTextArea, JRadioButton, JCheckbox, JMenu, JColorChooser, etc.

JFrame: The javax. swing.JFrame class is a type of container that inherits the java. awt.Frame class. JFrame works like the main window where components like labels, buttons, and text fields are added to create a GUI.

OBJECTIVE OF THE PROJECT

The main objective of designing and developing this Internet banking System Java primarily based .The engineering project is to provide secure and efficient net banking facilities to banking customers over the Internet. Apache Server Pages, MYSQL database used to develop this bank application where all banking
customers can log in through the secured web page by their account login id andpassword. Users will have all options and features in that application like
getting money from western union, money transfers.

ALGORITHM USED:

Step 1: Importing the required libraries:Awt, Jframe, javax.swing

Step 2: A sign-in page will open where the account holder has to insert his/herCard no and pin

Step 3: If the User doesn't have an Account click on the signup button and fill in allthe details

Step 4: After filling in all the detail automatic Card No and Pin is generated

Step 5: All the features of the Atm machine can be used

Step 6: The customer can deposit the money or withdraw the money, he/she can usethe fast cash system also

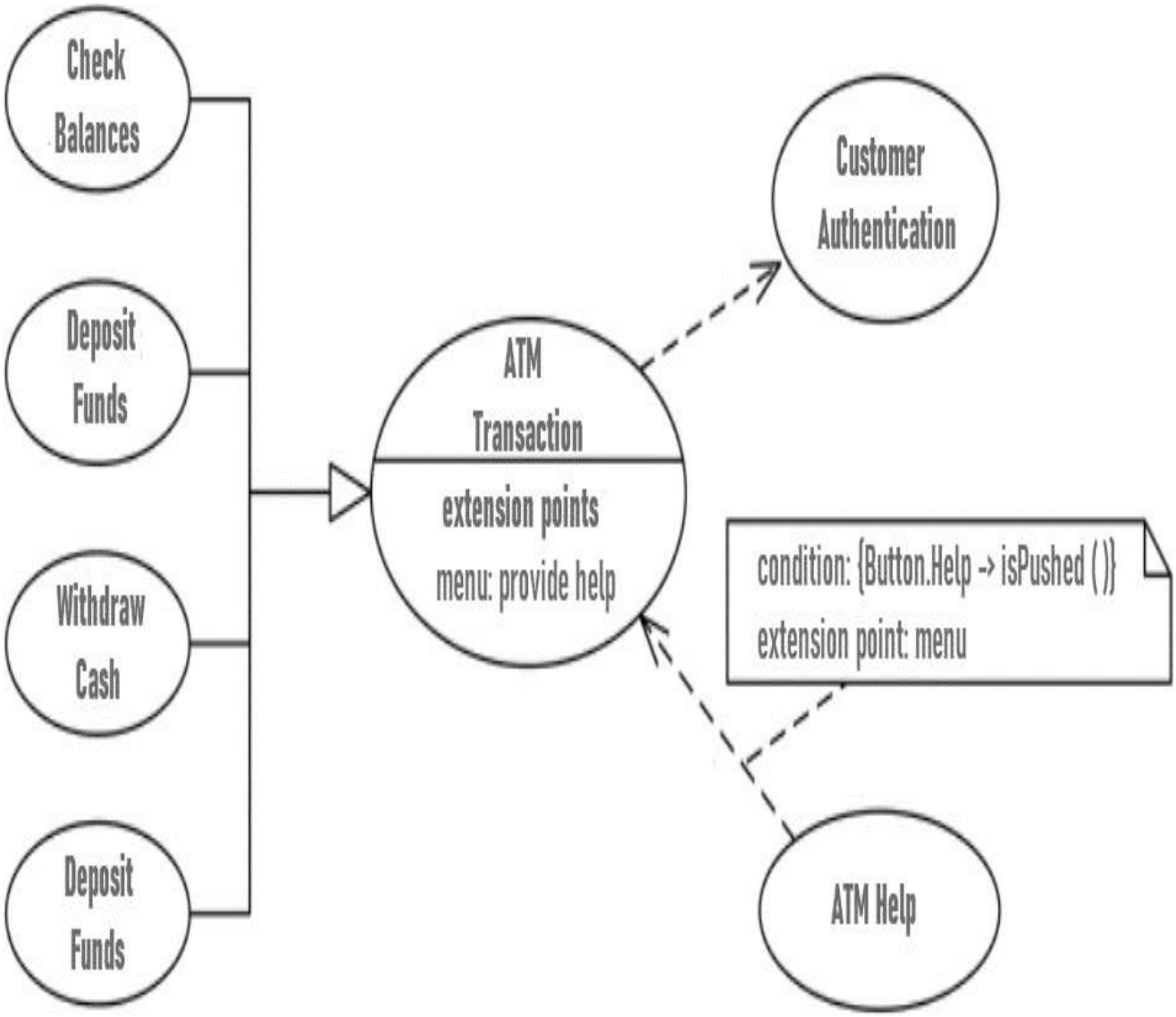
Step 7:Account holder can see their mini statement of all the transactions done byhis/her side.

TECHNOLOGY USED:

Core JAVA(Frontend)MySQL (Backend)

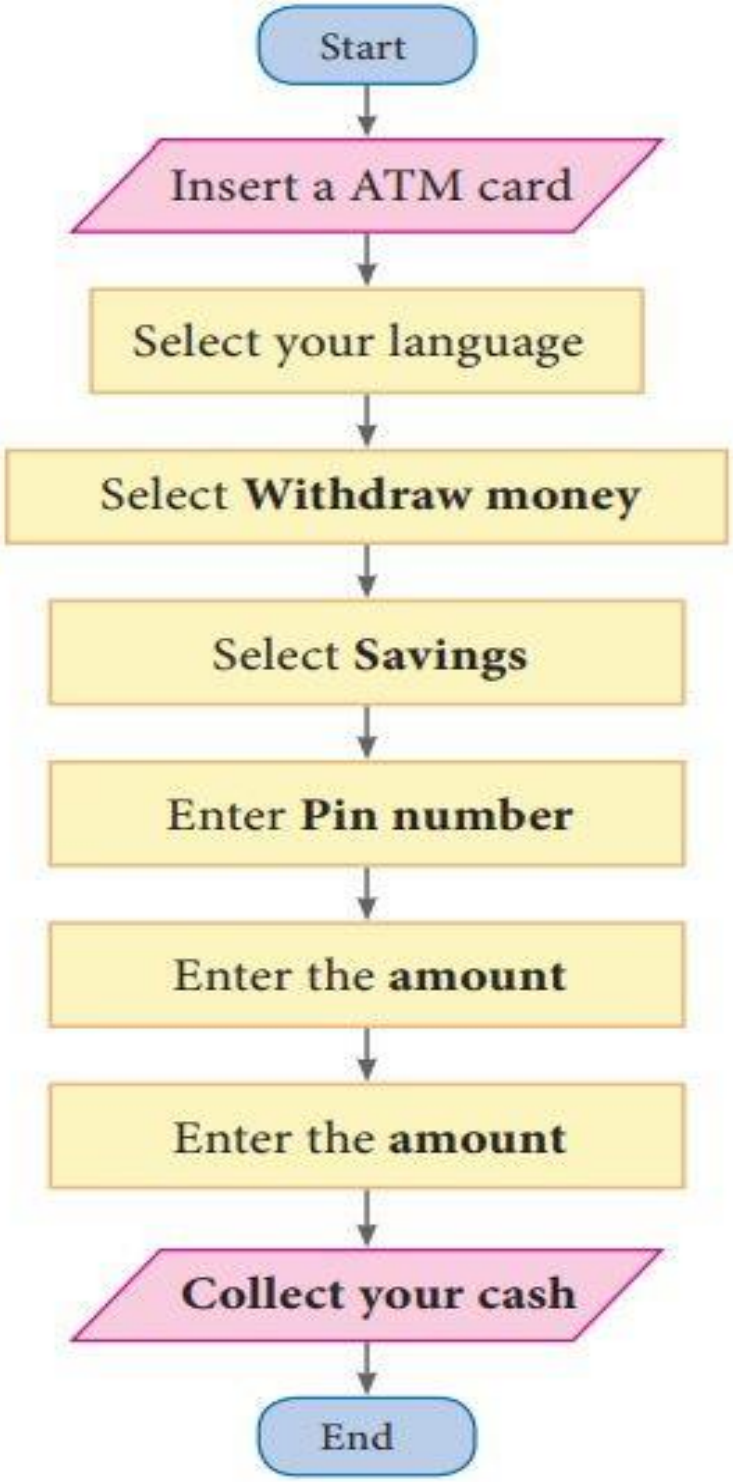
DIAGRAM & EXPERIMENTAL USED

USER DIAGRAM:

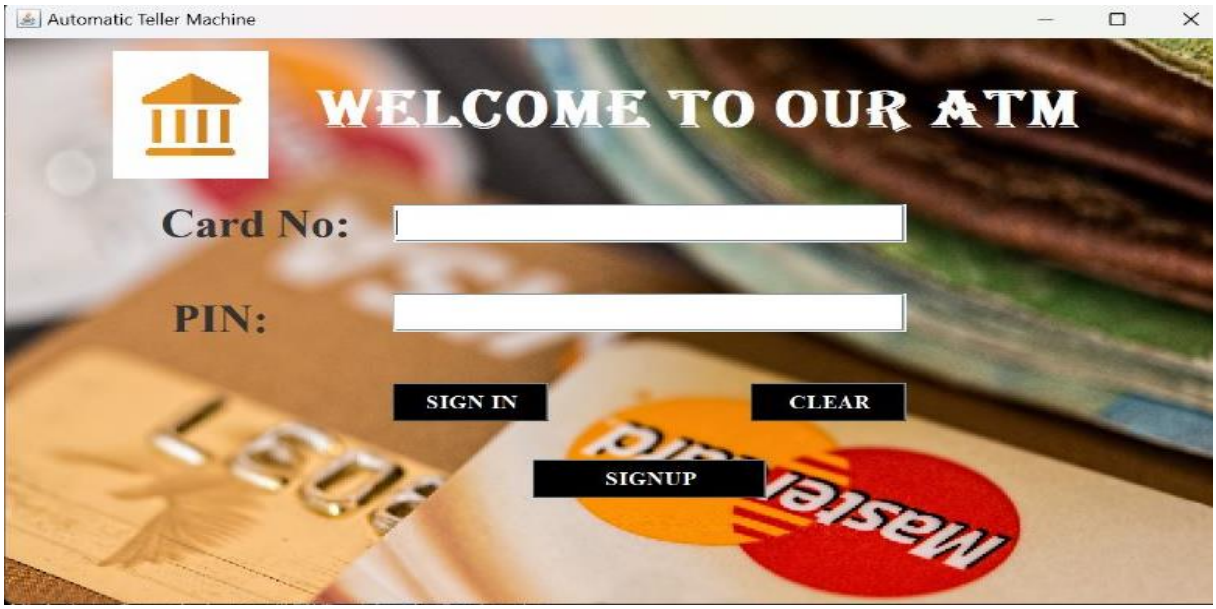


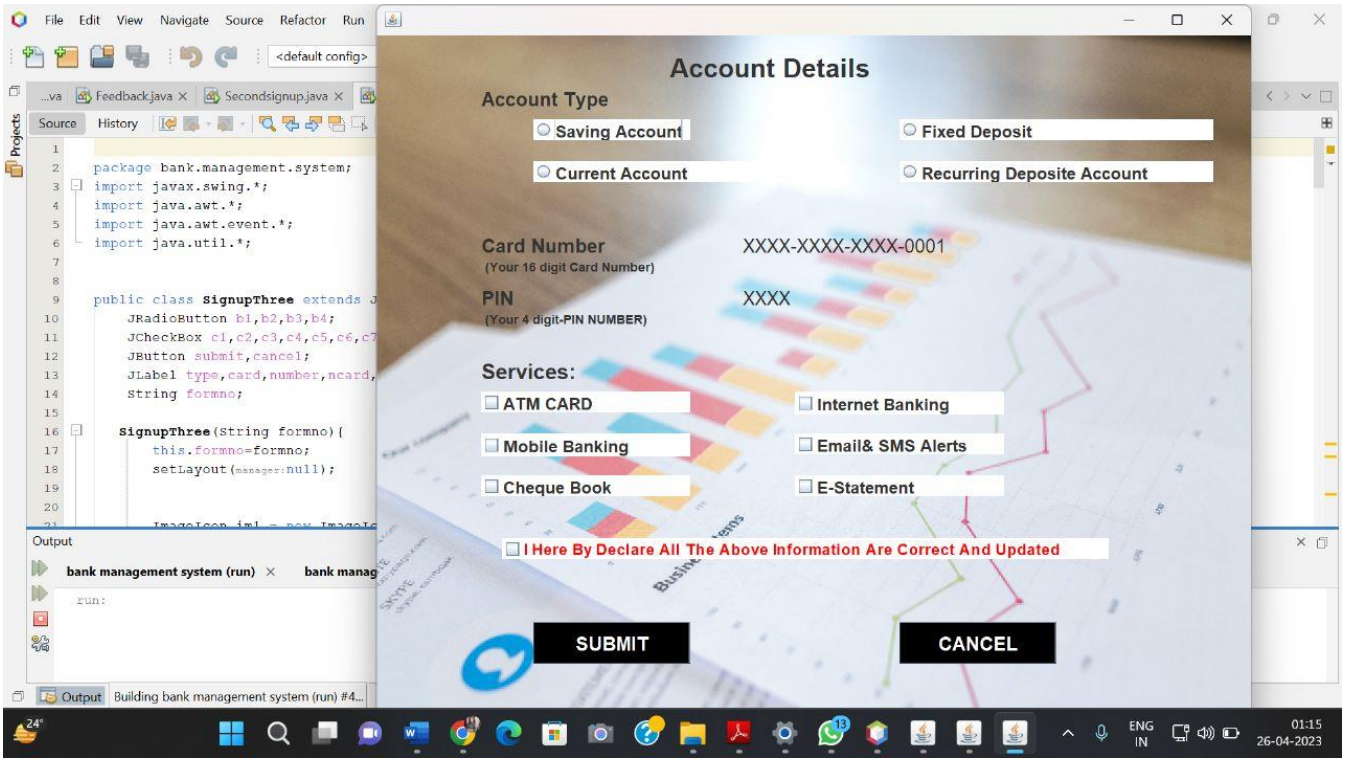
Use Case Diagram for Customer Authentication

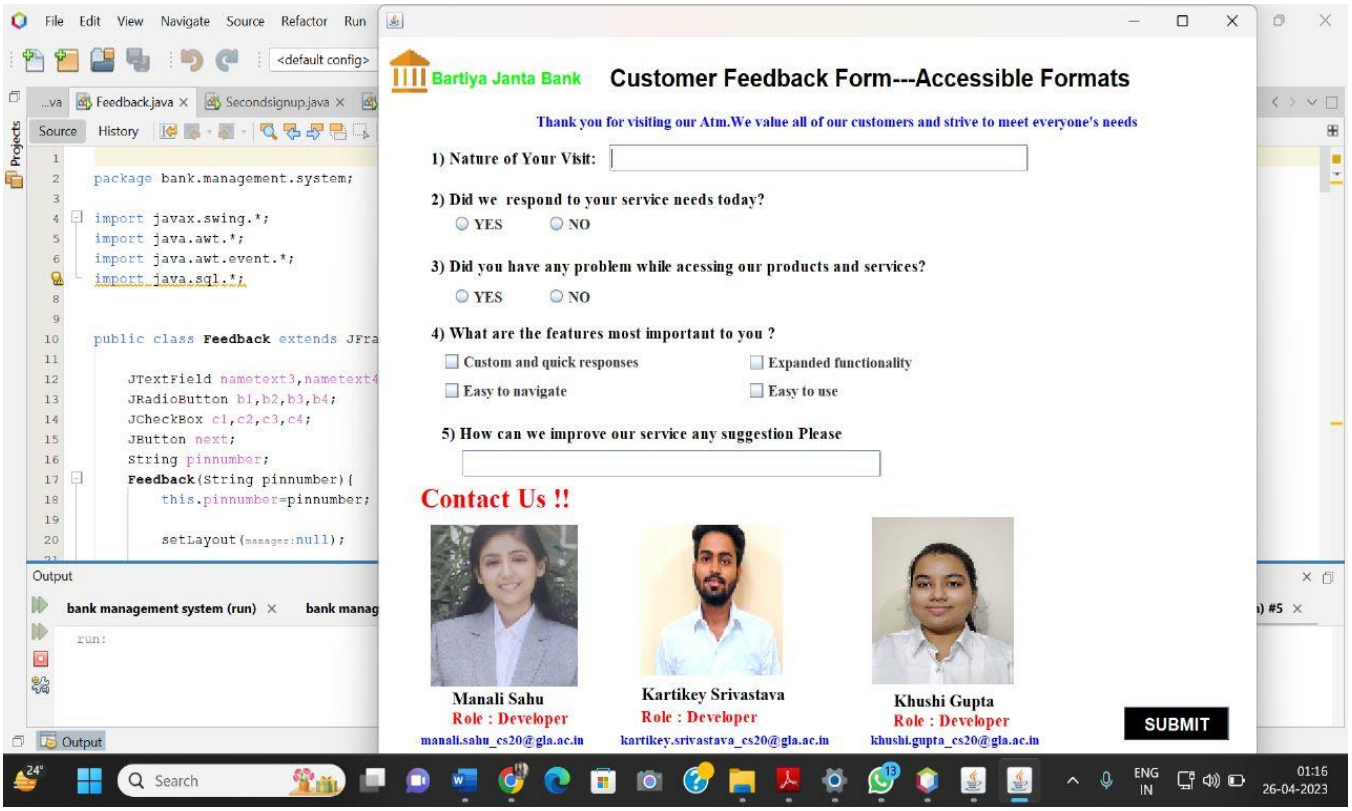
FLOW CHART :


Start
Insert a ATM card
Select your language
Select Withdraw money
Select Savings
Enter Pin number
Enter the amount
Enter the amount
Collect your cash
End

SOME EXAMPLES OF THE PROJECT :




Account Details
Account Type
Saving Account
Fixed Deposit
Current Account
Recurring Deposite Account
Card Number
(Your 16 digit Card Number)
XXXX-XXXX-XXXX-0001
PIN
(Your 4 digit-PIN NUMBER)
XXXX
Services:
ATM CARD
Internet Banking
Mobile Banking
Email& SMS Alerts
Cheque Book
E-Statement
I Here By Declare All The Above Information Are Correct And Updated
SUBMIT
CANCEL


Bartiya Janta Bank
Customer Feedback Form---Accessible Formats
Thank you for visiting our Atm.We value all of our customers and strive to meet everyone's needs
1) Nature of Your Visit:
2) Did we respond to your service needs today?
YES
NO
3) Did you have any problem while acessing our products and services?
YES
NO
4) What are the features most important to you ?
Custom and quick responses
Expanded functionality
Easy to navigate
Easy to use
5) How can we improve our service any suggestion Please
Contact Us !!
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Role : Developer
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Khushi Gupta
Role : Developer
khushi.gupta_cs20@gla.ac.in
SUBMIT

CODE DESCRIPTION :

Login Page:

```
package bank.management.system;
import javax.swing.*;
import java.awt.*;
import java.awt.event.*;
import java.sql.*;
public class Login extends JFrame implements ActionListener{
    JButton login,signup,clear;//button globally define so that it can be used any where
    JTextField cardtext;
    JPasswordField pintext;
    Login(){
        setTitle("Automatic Teller Machine");
        setLayout(null);

        ImageIcon im1 = new ImageIcon(ClassLoader.getSystemResource("icons/login.jpg"));
        Image im2=im1.getImage().getScaledInstance(800,600,Image.SCALE_DEFAULT);
        ImageIcon im3=new ImageIcon(im2);
        JLabel imimage= new JLabel(im3);
        imimage.setBounds(0,0,800,600);
        add(imimage);

        ImageIcon i1 = new ImageIcon(ClassLoader.getSystemResource("icons/logo.jpg"));

        Image i2 = i1.getImage().getScaledInstance(100, 100, Image.SCALE_DEFAULT);
        ImageIcon i3=new ImageIcon(i2);
        JLabel label = new JLabel (i3);
        label.setBounds(70,10,100,100);
        imimage.add(label);
```

```
//writing content to the frame

JLabel text = new JLabel("WELCOME TO OUR ATM");
text.setFont(new Font("Algerian",Font.BOLD,45));
text.setForeground(Color.WHITE);
text.setBounds(200,40,500,40);
imimage.add(text);

//For card
JLabel cardno = new JLabel("Card No:");
cardno.setFont(new Font("Times new Roman",Font.BOLD,30));
cardno.setBounds(100,130,180,30);
imimage.add(cardno);
 cardtext = new JTextField();
cardtext.setBounds(250,130,330,30);
cardtext.setBackground(Color.WHITE);
 cardtext.setFont(new Font("Arial",Font.BOLD,16));
imimage.add(cardtext);

//For pin no
JLabel pinno = new JLabel(" PIN:");
pinno.setFont(new Font("Times new Roman",Font.BOLD,30));
pinno.setBounds(100,200,500,40);
imimage.add(pinno);
pintext = new JPasswordField();
pintext.setBounds(250,200,330,30);
pintext.setFont(new Font("Arial",Font.BOLD,16));
imimage.add(pintext);

//All Button Work is done Here

login = new JButton("SIGN IN");
```

```
    login.setBounds(250,270,100,30);
    login.setForeground(Color.WHITE);
    login.setBackground(Color.black);
    login.setFont(new Font("Times new Roman",Font.BOLD,15));
    login.addActionListener(this);
    imimage.add(login);
    clear = new JButton("CLEAR");
    clear.setBounds(480,270,100,30);
    clear.setForeground(Color.WHITE);
    clear.setBackground(Color.black);
    clear.setFont(new Font("Times new Roman",Font.BOLD,15));
    clear.addActionListener(this);
    imimage.add(clear);

    signup = new JButton("SIGNUP");
    signup.setBounds(340,330,150 ,30);
    signup.setForeground(Color.WHITE);
    signup.setBackground(Color.black);
    signup.setFont(new Font("Times new Roman",Font.BOLD,15));
    signup.addActionListener(this);
    imimage.add(signup);

    getContentPane().setBackground(Color.pink);
    setSize(800,480);
    setVisible(true);
    setLocation(300,100);//left to top

}

public void actionPerformed(ActionEvent ae){
    if(ae.getSource()== clear){
```

```
            cardtext.setText("");
            pintext.setText("");


        }
        else if(ae.getSource()==login){


            try{
            Conn conn = new Conn();
            String cardnumber=cardtext.getText();
            String pinnumber=pintext.getText();
            String query1 = "select * from login where cardnumber ='"+cardnumber+"' and pin
='"+ pinnumber+"'";
              ResultSet rs= conn.s.executeQuery(query1);
              if(rs.next()){
                 setVisible(false);
                 new Transaction(pinnumber).setVisible(true);
              }
              else{
                 JOptionPane.showMessageDialog(null,"Invalid Card NO. or Pin NO." );
              }


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


        else if(ae.getSource()==signup){
               setVisible(false);
            new Signupone().setVisible(true);
    public static void main(String args[]) {
        new Login();//object create


    }
}
```

Connection:

```
package bank.management.system;
import java.sql.*;
public class Conn {
    Connection c;
    Statement s;

   //step 1 Create connection



    public Conn(){
        try{                        // my sql is external entity exception chaces is more

                                        //create connection
            c=DriverManager.getConnection("jdbc:mysql:///mybank","root","Manali@17");
            s=c.createStatement();
        } catch(Exception e){
            System.out.println(e);
        }
    }

}
```

FUTURE PROSPECT :

When you think of online banking, you probably think about a computer (either a desktop or laptop), a three or four-step security process, and then an interface that lets you view the balance of your various bank accounts and credit cards, whilst permitting you to transfer money and pay bills. And you're not wrong either. The most valuable future looks are the following below:

1- More branches of the bank, maybe it will be international, that means more ATM machines outside.
2- Customer issues development based on their needs, so the help desk will be aware of their needs and easy to use.
3- Developing a mobile App for a banking system that helps users to the obtained operations without go to the bank only needs to sign in using their A/C NO. And password and then use your own PIN. Finally, the system will update automatically.

CONCLUSION

This project is developed to nurture the needs of a user in the banking sector by embedding all the tasks of transactions taking place in a bank. A future version of this project will still be much enhanced than the current version. Writing and depositing checks are perhaps the most fundamental ways to move money in and out of a checking account, but advancements in technology have added ATM and debit card transactions. All banks have rules about how long it takes to access your deposits, how many debit card transactions you're allowed in a day, and how much cash you can withdraw from an ATM. Access to the balance in your checking account can also be limited by businesses that place holds on your funds.
Banks are providing Internet banking services also so that customers can be attracted. By asking the bank employees we came to know that the maximum numbers of Internet bank account holders are youth and business man. Online banking is an innovative tool that is fast becoming a necessity. It is a successful strategic weapon for banks to remain profitable in a volatile and competitive marketplace of today. If proper training should be given to customers by the bank employees to open an account will be beneficial secondly the website should be made friendlier from where the customers can directly make and access their accounts.
Thus, the Bank Management System is developed and executed successfully.

BIBLIOGRAPHY:

REFERENCES:

- https://www.javatpoint.com/atm-program-java
- https://www.geeksforgeeks.org/java/
- https://netbeans.apache.org/ (platform used)

BOOKS:

- Core java fundamental
- Volume-IJava Black Book

ONLINE GITHUB REPOSITORY:

https://github.com/ManaliSahu-17/ATM-Simulator

FACULTY GUIDELINES:

Mr. Amir Khan,(Technical Trainer at GLA University)

The End