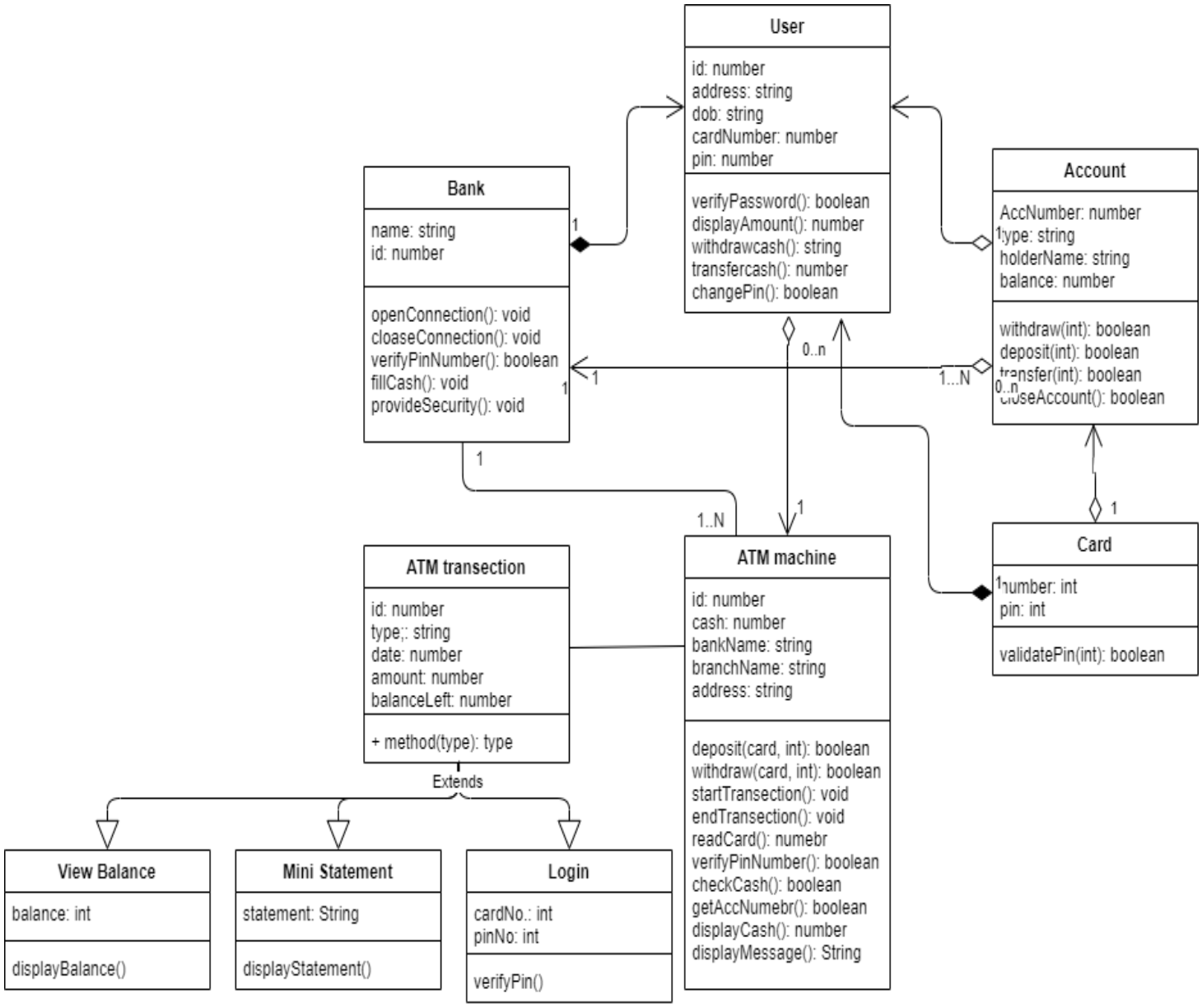
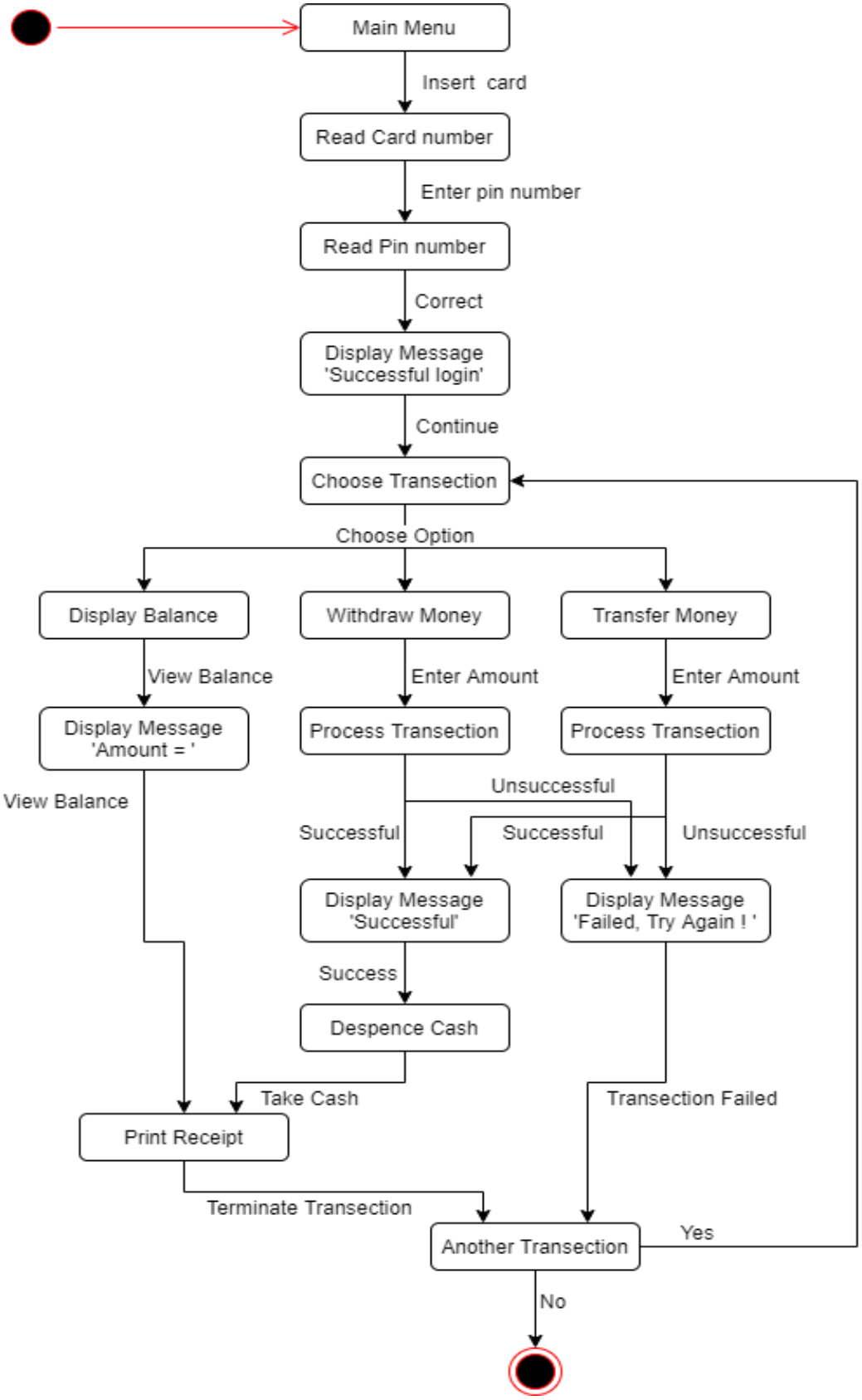
Practical 5

Aim: Describe the ATM model for login and balance verification and displaying mini statement. Implement the model in OO language.

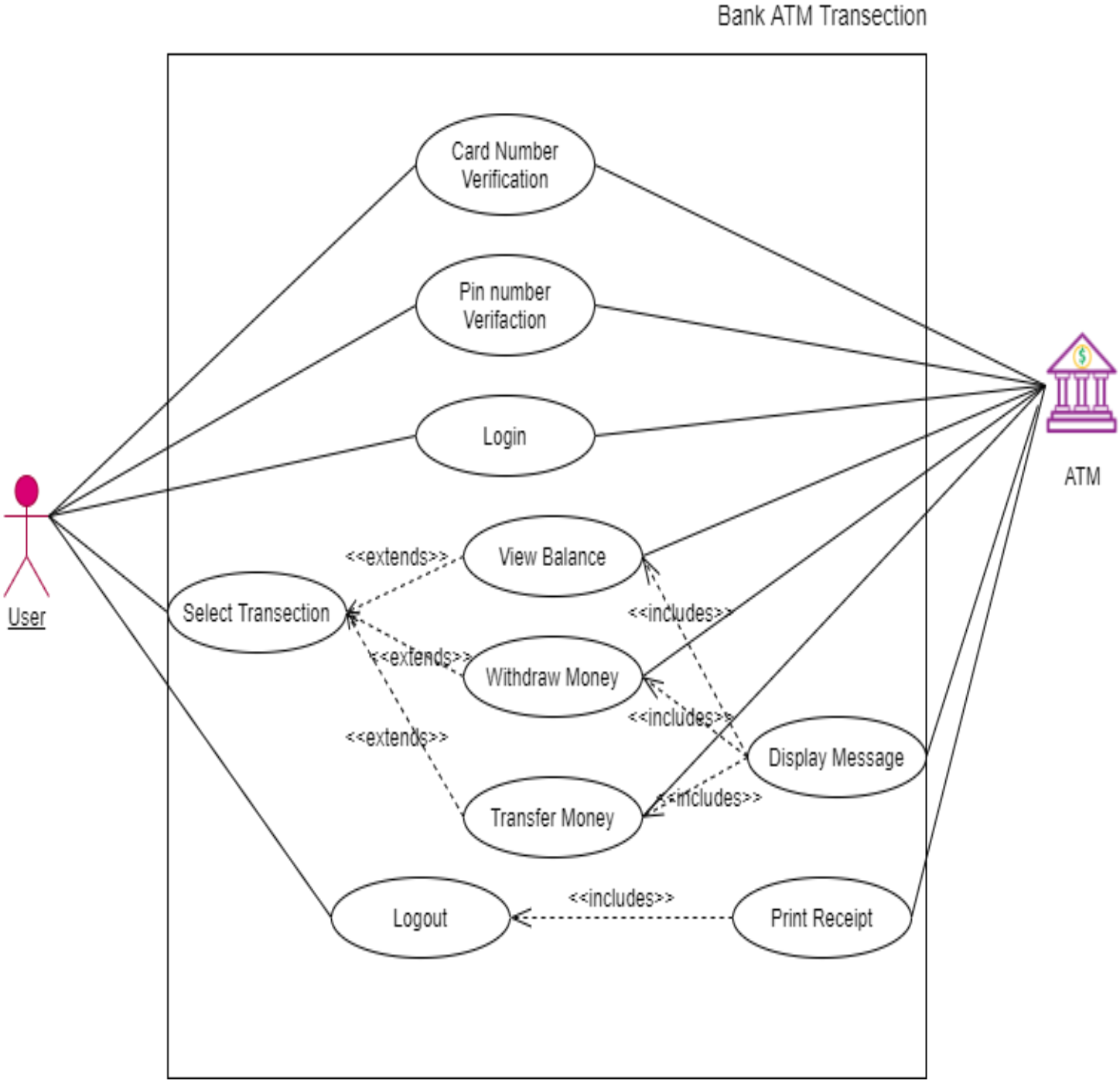
Class Model:



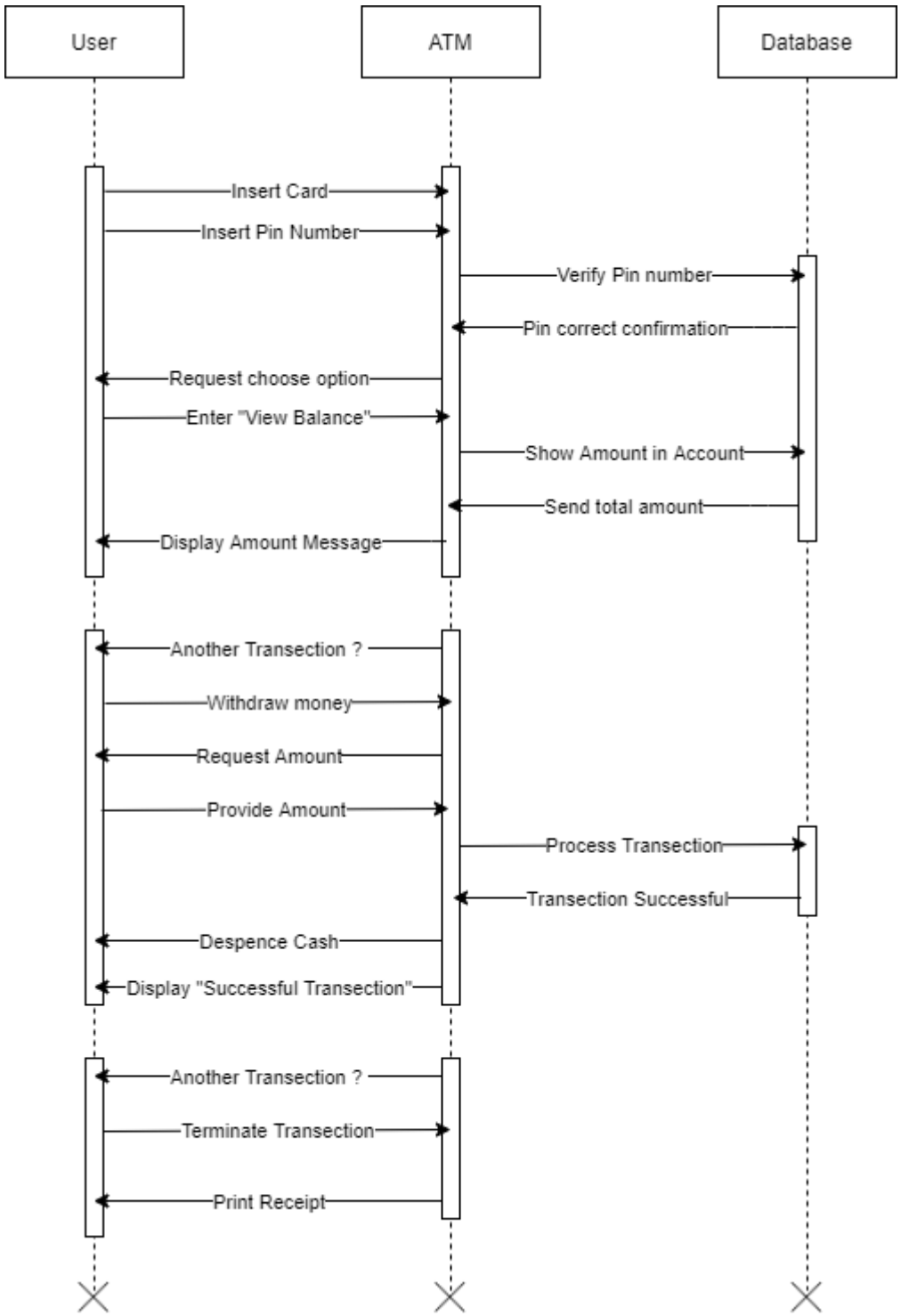
Activity State Model:



Use Case Model:



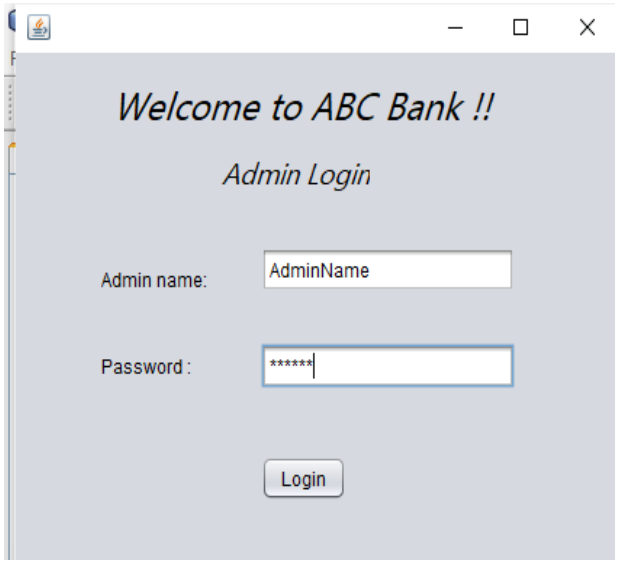
Sequence Model:



Code:

1. Bank.java:

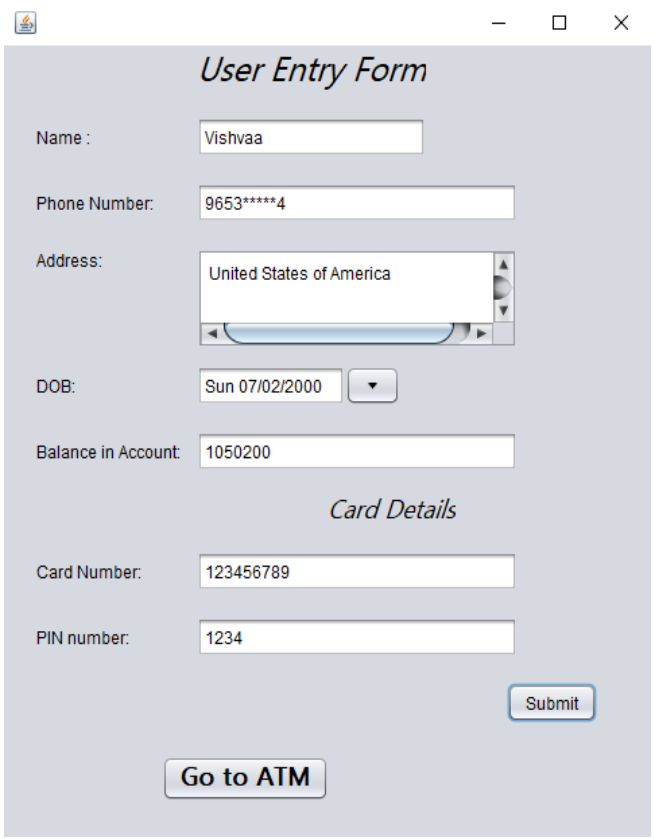
```
package atmmachine;
import javax.swing.JFrame;
import javax.swing.JOptionPane;
public class Bank extends javax.swing.JFrame {
    public Bank() {
        initComponents();
    }
    @SuppressWarnings("unchecked")
    // <editor-fold defaultstate="collapsed" desc="Generated Code">
    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        String adminname = jTextField1.getText();
        String pwd = jTextField2.getText();
        System.out.println(adminname + pwd);
        if(adminname.equals("AdminName")  || pwd.equals("XYZ_123")){
            UserEntry uentry = new UserEntry();
            setVisible(false);
            uentry.setVisible(true);
        }
        else{
            JFrame f=new JFrame();
            JOptionPane.showMessageDialog(f,"Invalid Admin name or password");
        }
        // TODO add your handling code here:
    }
    public static void main(String args[]) {
        /* Set the Nimbus look and feel */
        //<editor-fold defaultstate="collapsed" desc=" Look and feel setting code
(optional) ">
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new Bank().setVisible(true);
            }
        });
    }
    // Variables declaration - do not modify
    private javax.swing.JButton jButton1;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JLabel jLabel4;
    private javax.swing.JTextField jTextField1;
    private javax.swing.JTextField jTextField2;
    // End of variables declaration
}
```

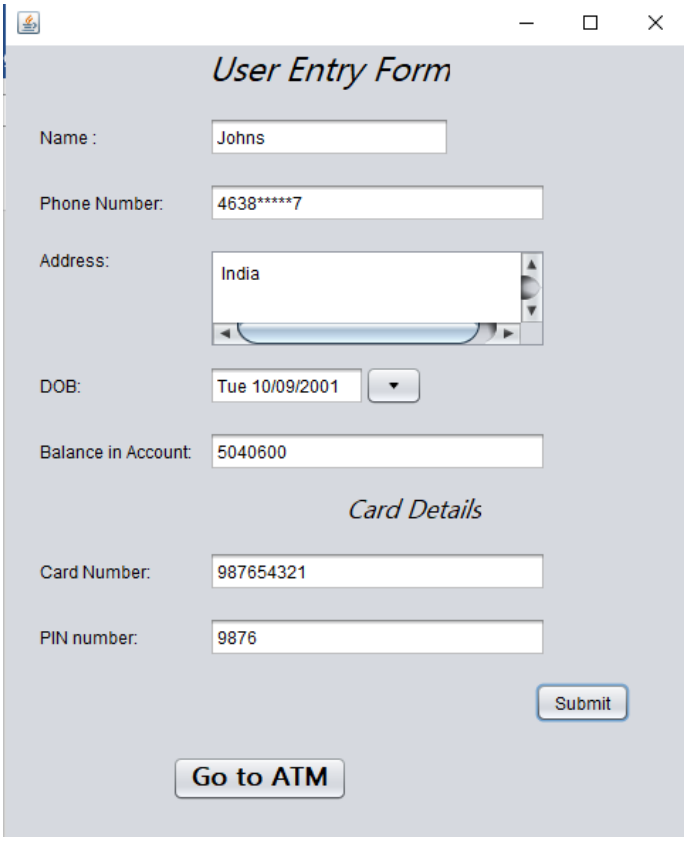


2. UserEntry.java:

```
      package atmmachine;
      import java.util.Map;
      import java.util.HashMap;
      import java.util.Date;
      public class UserEntry extends javax.swing.JFrame {
          protected Map<String, UserClass> users = new HashMap<>();
          public UserEntry() {
              initComponents();
          }
          @SuppressWarnings("unchecked")
          // <editor-fold defaultstate="collapsed" desc="Generated Code">
      public boolean addUser (UserClass user) {
        if (!users.containsValue(user)) {
            System.out.println("Added user - " + user.uname);
            users.put(user.uname, user);
            return true;
        }
        System.out.println("Unable to add user - " + user.uname);
        return false;
    }
private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        String uname = jTextField1.getText();
        String phonenumber = jTextField2.getText();
        String address = jTextArea1.getText();
        Date dob = jXDatePicker1.getDate();
        String balance = jTextField5.getText();
        String cardnumber = jTextField3.getText();
        String pin = jTextField4.getText();

        UserClass user1 = new UserClass(uname, phonenumber, address, dob, balance,
cardnumber, pin);

        addUser(user1);
    }
    private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
        NewJFrame atm = new NewJFrame(users);
        setVisible(false);
        atm.setVisible(true);
    }
public static void main(String args[]) {
        /* Set the Nimbus look and feel */
      java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new UserEntry().setVisible(true);
            }
        });
```

```
    }
    private javax.swing.JButton jButton1;
    private javax.swing.JButton jButton2;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JLabel jLabel4;
    private javax.swing.JLabel jLabel5;
    private javax.swing.JLabel jLabel6;
    private javax.swing.JLabel jLabel7;
    private javax.swing.JLabel jLabel8;
    private javax.swing.JLabel jLabel9;
    private javax.swing.JScrollPane jScrollPane1;
    private javax.swing.JTextArea jTextArea1;
    private javax.swing.JTextField jTextField1;
    private javax.swing.JTextField jTextField2;
    private javax.swing.JTextField jTextField3;
    private javax.swing.JTextField jTextField4;
    private javax.swing.JTextField jTextField5;
    private org.jdesktop.swingx.JXDatePicker jXDatePicker1;
}
```





3. UserClass.java:

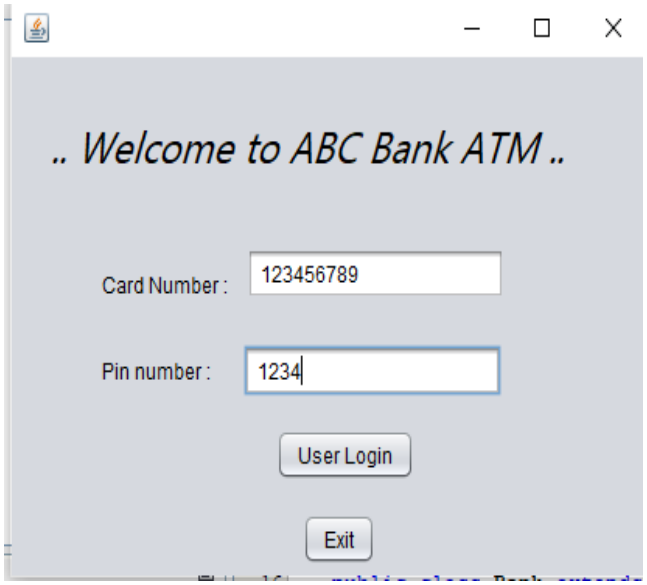
```
package atmmachine;
import java.util.ArrayList;
import java.util.List;
```

```
import java.util.Date;
import java.text.DateFormat;
import java.text.SimpleDateFormat;
import java.util.Calendar;
import java.text.ParseException;
import java.util.Scanner;
public class UserClass {
    String uname;
    String phonenumber;
    String address;
    Date dob;
    String balance;
    String cardnumber;
    String pin;

    public UserClass (String uname, String phonenumber, String address, Date dob,
String balance, String cardnumber, String pin) {
        this.uname = uname;
        this.address = address;
        this.phonenumber = phonenumber;
        this.dob = dob;
        this.balance = balance;
        this.cardnumber = cardnumber;
        this.pin = pin;
    }
}
```

4. ATM.java:

```
package atmmachine;
import java.util.Map;
import java.util.HashMap;
import java.util.Date;
import java.awt.event.*;
import java.awt.*;
import javax.swing.*;
import java.util.*;
public class NewJFrame extends javax.swing.JFrame {
    protected Map<String, UserClass> users = new HashMap<>();
    Iterator<UserClass> itr = users.values().iterator();

    public NewJFrame() {
        initComponents();
    }

    public NewJFrame(Map<String, UserClass> users){
        this.users = users;
        initComponents();
```

```
    }
    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        int card = Integer.parseInt(jTextField2.getText());
        int pin = Integer.parseInt(jTextField1.getText());

        System.out.println(card);
        System.out.println(pin);

        if(card == 123456789 && pin == 1234) {
            MenuPage menu = new MenuPage(123456789,1234);
            setVisible(false);
            menu.setVisible(true);
        } else if(card == 987654321 && pin == 9876){
            MenuPage menu = new MenuPage(987654321,9876);
            setVisible(false);
            menu.setVisible(true);
        }
        else if(!(card == 123456789)){
            JFrame f=new JFrame();
            JOptionPane.showMessageDialog(f,"Invalid Cardnumber");
        }
        else if(!(pin == 1234)){
            JFrame f=new JFrame();
            JOptionPane.showMessageDialog(f,"Invalid Pinnumber");
        }
    }
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
        System.exit(0);// TODO add your handling code here:
    }
public static void main(String args[]) {
        java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new NewJFrame().setVisible(true);
            }
        });
    }
    private javax.swing.JButton jButton1;
    private javax.swing.JButton jButton2;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JTextField
jTextField1;
    private javax.swing.JTextField
jTextField2;
    // End of variables declaration
 }
```

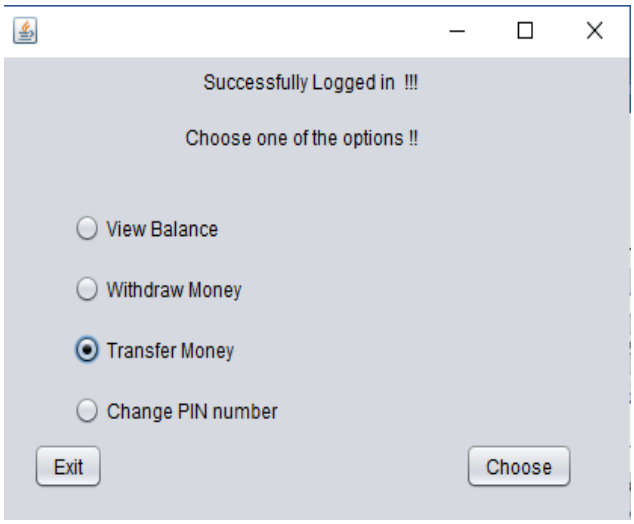


5. MenuPage.Java:

```
package atmmachine;
public class MenuPage extends javax.swing.JFrame {
    int card;
    int option;
    int bal;
    int pin;
    public MenuPage() {
        initComponents();
    }


    public void changePin(int pin){
        this.pin = pin;
    }
    public MenuPage(int Card,int pin){
        initComponents();
        this.card = Card;
        this.pin = pin;
        if(card == 123456789){
            bal = 1050200;
        }
        else{
            bal = 5040600;
        }
    }

    public void transferred(int amount, int card){
        this. bal = this.bal + amount;
    }

    public void updateBal(int bal, int card){
        if(this.card == card){
            this.bal = bal;
        }
    }
    private void jRadioButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        this.option = 1;// TODO add your handling code here:
    }

    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        if(option == 1){
            if(card == 123456789){
                ViewBalance balance;
                balance = new ViewBalance(bal,card,pin);
                setVisible(false);
                balance.setVisible(true);
```

```
            }else{
                ViewBalance balance;
                balance = new ViewBalance(bal,card,pin);
                setVisible(false);
                balance.setVisible(true);
            }
        }
        else if(option == 2){
            if(card == 123456789){
                Withdraw withdraw;
                withdraw = new Withdraw(bal,card,pin);
                setVisible(false);
                withdraw.setVisible(true);
            }
            else{
                Withdraw withdraw;
                withdraw = new Withdraw(bal,card,pin);
                setVisible(false);
                withdraw.setVisible(true);
            }
        }
        else if(option == 3){
            if(card == 123456789){
                Transfer transfer = new Transfer(bal,card,pin);
                setVisible(false);
                transfer.setVisible(true);
            }
            else{
                Transfer transfer = new Transfer(bal,card,pin);
                setVisible(false);
                transfer.setVisible(true);
            }
        }
        else if(option == 4){
            if(card == 123456789){
                ChangePin cpin = new ChangePin(card,pin);
                setVisible(false);
                cpin.setVisible(true);
            }
        }
    }
    public static void main(String args[]) {
    java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new MenuPage().setVisible(true);
            }
        });
    }
```

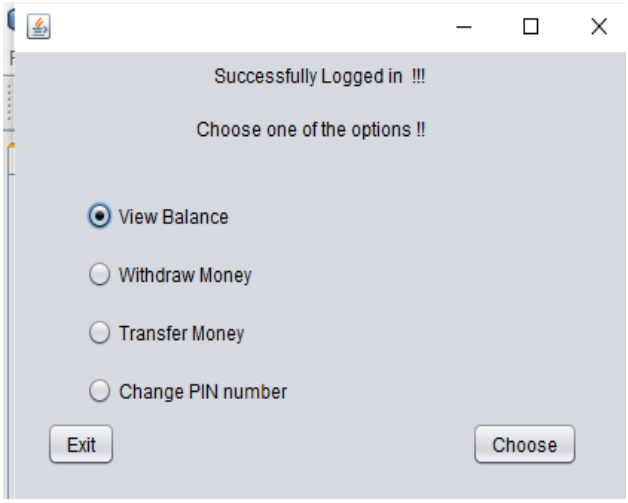
```
    private javax.swing.JButton
jButton1;
    private javax.swing.JButton
jButton2;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JRadioButton
jRadioButton1;
    private javax.swing.JRadioButton
jRadioButton2;
    private javax.swing.JRadioButton
jRadioButton3;
    private javax.swing.JRadioButton
jRadioButton4;
}
```

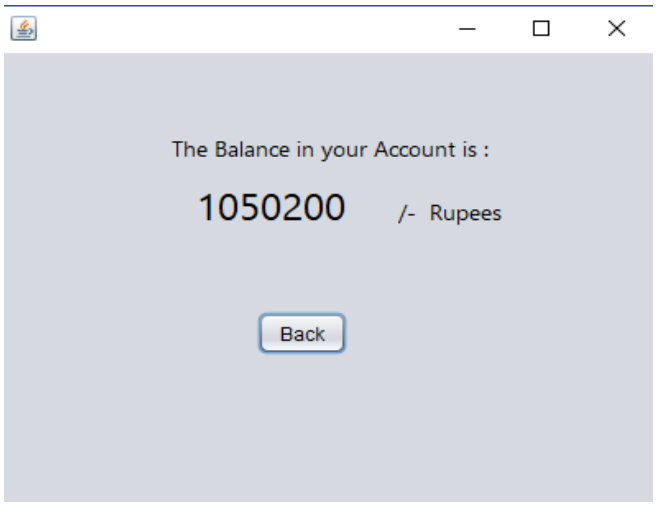


6. ViewBalance.java:

```
package atmmachine;
public class ViewBalance extends javax.swing.JFrame {
    int bal;
    int card;
    int pin;
    public ViewBalance() {
        initComponents();
    }
    public ViewBalance(int bal, int card, int pin){
        initComponents();
        this.bal = bal;
        this.card = card;
        this.pin = pin;
        jLabel2.setText(Integer.toString(bal));
    }
    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        MenuPage menu = new MenuPage(card,pin);
        menu.updateBal(bal, card);
        setVisible(false);
        menu.setVisible(true);// TODO add your handling code here:
    }
    public static void main(String args[]) {
      java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new ViewBalance().setVisible(true);
            }
        });
    }
    private javax.swing.JButton jButton1;
    private javax.swing.JLabel jLabel1;
```

```
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
}
```

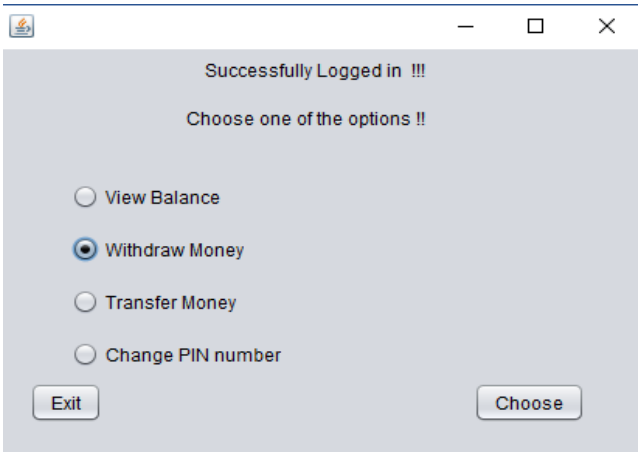


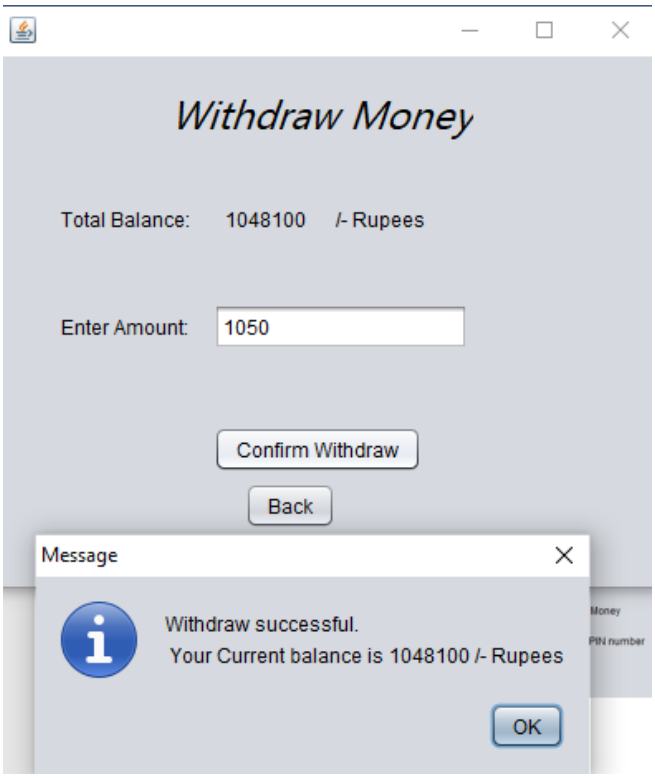


7. Withdraw.java:

```
package atmmachine;
import javax.swing.JFrame;
import javax.swing.JOptionPane;
public class Withdraw extends javax.swing.JFrame {
    int bal;
    int card;
    int pin;
    public Withdraw() {
        initComponents();
    }
    public Withdraw(int bal, int card,int pin){
        initComponents();
        this.bal = bal;
        this.card = card;
        this.pin = pin;
        jLabel4.setText(Integer.toString(bal));
    }
    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        int given;
        given = Integer.parseInt(jTextField1.getText());
        if(given < bal){
            bal = bal - given;
            jLabel4.setText(Integer.toString(bal));
            JFrame f=new JFrame();
            JOptionPane.showMessageDialog(f,"Withdraw successful.\n Your Current
balance is "+bal+" /- Rupees");
        }
        else{
            JFrame f=new JFrame();
```

```
                JOptionPane.showMessageDialog(f,"invlid Amount");
            }
        }
        private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
            MenuPage menu = new MenuPage(card,pin);
            menu.updateBal(bal,card);
            setVisible(false);
            menu.setVisible(true);
        }
public static void main(String args[]) {
java.awt.EventQueue.invokeLater(new Runnable() {
          public void run() {
              new Withdraw().setVisible(true);
          }
      });
    }
    private javax.swing.JButton jButton1;
    private javax.swing.JButton jButton2;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JLabel jLabel4;
    private javax.swing.JLabel jLabel5;
    private javax.swing.JTextField
jTextField1;
    // End of variables declaration
}
```

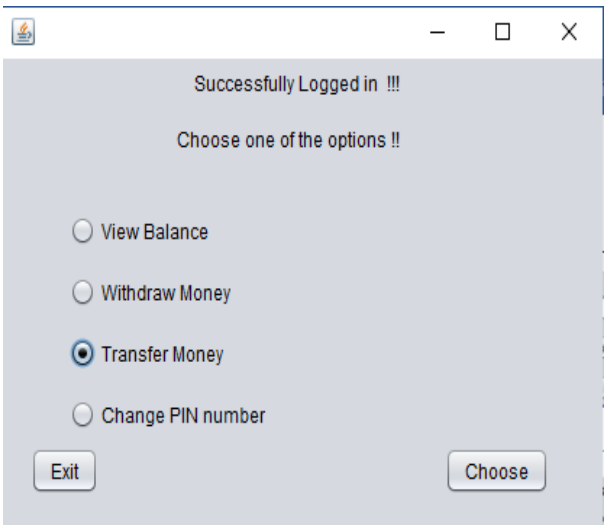




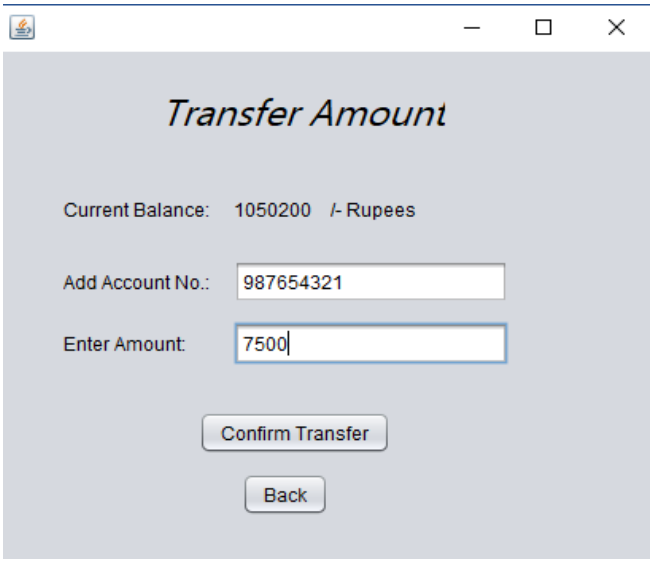
8. Transfer.java:

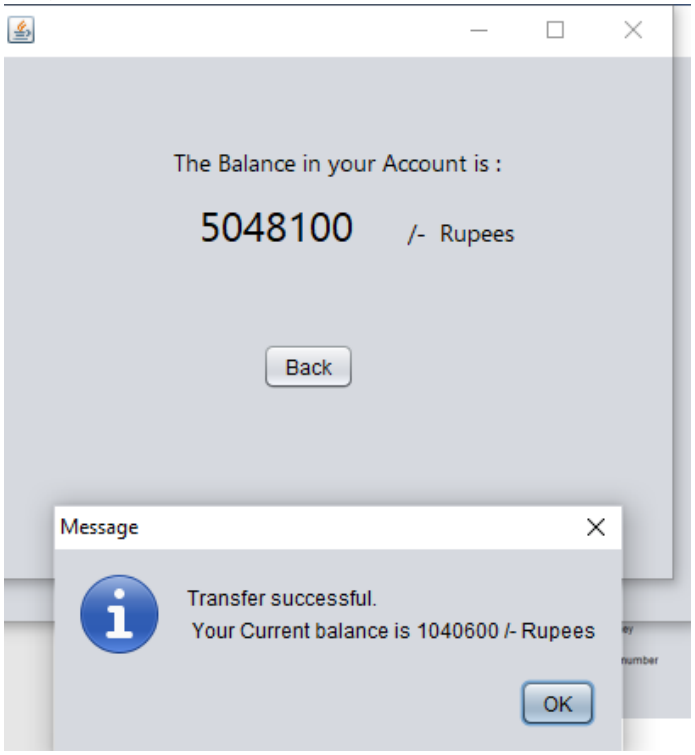
```
package atmmachine;
import javax.swing.JFrame;
import javax.swing.JOptionPane;
public class Transfer extends javax.swing.JFrame {
    int bal;
    int card;
    int pin;
```

```
    public Transfer() {
        initComponents();
    }

    public Transfer(int bal, int card, int pin){
        initComponents();

        this.bal = bal;
        this.card = card;
        this.pin = pin;
        jLabel3.setText(Integer.toString(bal));
    }
    private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {
        MenuPage menu = new MenuPage(card,pin);
        menu.updateBal(bal,card);
        setVisible(false);
        menu.setVisible(true);// TODO add your handling code here:
    }

    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        int given;
        given = Integer.parseInt(jTextField2.getText());
        int transferCard = Integer.parseInt(jTextField1.getText());
        if(given < bal){
            bal = bal - given;
            jLabel3.setText(Integer.toString(bal));
            MenuPage menu1 = new MenuPage(transferCard,pin);
            menu1.transferred(given,transferCard);
            ViewBalance newacc = new ViewBalance(menu1.bal,menu1.card,menu1.pin);
            newacc.setVisible(true);
            JFrame f=new JFrame();
            JOptionPane.showMessageDialog(f,"Transfer successful.\n Your Current
balance is "+bal+" /- Rupees");
        }
        else{
            JFrame f=new JFrame();

JOptionPane.showMessageDialog(f,"invlid Amount");
        }
        // TODO add your handling code here:
    }
    public static void main(String args[]) {
java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new Transfer().setVisible(true);
            }
        });
    }
```



```
    private javax.swing.JButton jButton1;
    private javax.swing.JButton jButton2;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JLabel jLabel4;
    private javax.swing.JLabel jLabel5;
    private javax.swing.JLabel jLabel6;
    private javax.swing.JTextField jTextField1;
    private javax.swing.JTextField
jTextField2;
    // End of variables declaration
}
```





9. ChangePin.java:

```
package atmmachine;
import javax.swing.JFrame;
import javax.swing.JOptionPane;
public class ChangePin extends javax.swing.JFrame {
    int card;
    int pin;
    public ChangePin() {
        initComponents();
    }

    public ChangePin(int card, int pin){
        initComponents();
        this.card = card;
        this.pin = pin;
    }
    private void jButton1ActionPerformed(java.awt.event.ActionEvent evt) {
        int existing = Integer.parseInt(jTextField1.getText());
        int newpin = Integer.parseInt(jTextField2.getText());
```

```
        System.out.println(pin);
        if(existing == this.pin){
            this.pin = newpin;
            MenuPage menu = new MenuPage(card,pin);
            menu.changePin(pin);
            JFrame f=new JFrame();
            JOptionPane.showMessageDialog(f,"Pin Changed Successfully.");
            setVisible(false);
            menu.setVisible(true);
        }

        else{
            JFrame f=new JFrame();
            JOptionPane.showMessageDialog(f,"Invalid Pin");
        }
        // TODO add your handling code here:
    }
    public static void main(String args[]) {
java.awt.EventQueue.invokeLater(new Runnable() {
            public void run() {
                new ChangePin().setVisible(true);
            }
        });
    }
    private javax.swing.JButton jButton1;
    private javax.swing.JLabel jLabel1;
    private javax.swing.JLabel jLabel2;
    private javax.swing.JLabel jLabel3;
    private javax.swing.JTextField
jTextField1;
    private javax.swing.JTextField
jTextField2;
    // End of variables declaration
}
```