SIMPLE BANKING SYSTEM

ABSTRACT

Banking system plays an important role in modern economic world. This project is a simple banking system that implements the features of a real-time banking system. Features include:

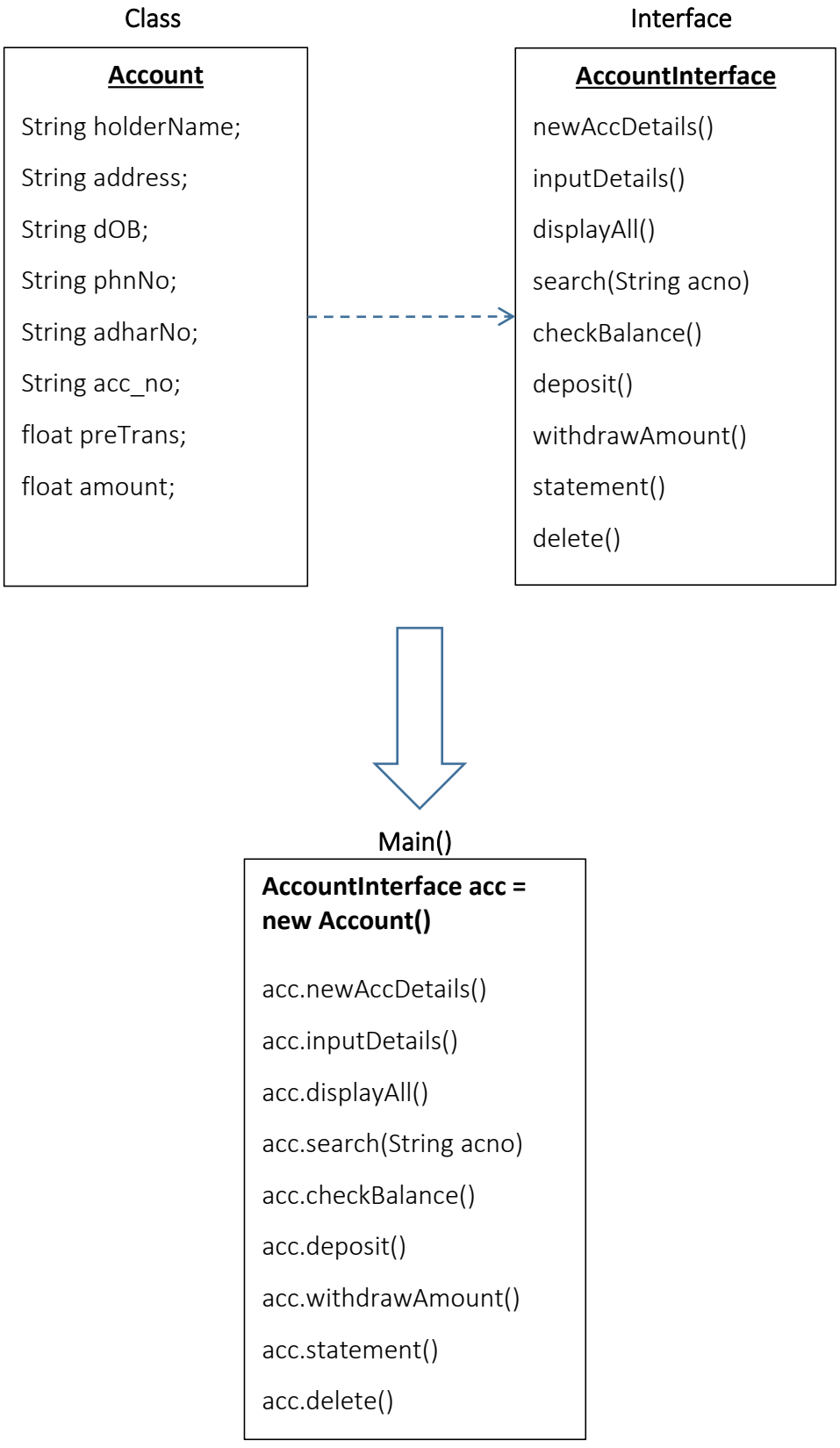
- ✓ Open a new account
- ✓ Withdraw
- ✓ Deposit
- ✓ Check Balance
- ✓ Statement
- ✓ Display All
- ✓ Delete Account

Some additional features are included while creating a new account, like phone number validation and date validation.

This system is implemented with the help of OOP's concept. It is completed with the help of two classes and an interface. The actual flow of the program starts by assigning values to the class. That data is stored in an array of object of class Account. Each time an operation is called it checks for the account number in that array of the class. Only if the condition is true it proceeds further. Otherwise, it pops a message.

The project starts with a message asking the user to input records. That input is stored in an array of object of class Account. The object of class Account is created with the instance of interface AccountInterface, that implements complete abstraction. Each time user selects an option, it invokes the specific method from Account class. This project uses Pattern and Matcher classes of Java to validate the date and phone number. The user can continue with their choice until they choose exit option.

WORK FLOW


Class
Account
String holderName;
String address;
String dOB;
String phnNo;
String adharNo;
String acc_no;
float preTrans;
float amount;
Interface
AccountInterface
newAccDetails()
inputDetails()
displayAll()
search(String acno)
checkBalance()
deposit()
withdrawAmount()
statement()
delete()
Main()
AccountInterface acc = new Account()
acc.newAccDetails()
acc.inputDetails()
acc.displayAll()
acc.search(String acno)
acc.checkBalance()
acc.deposit()
acc.withdrawAmount()
acc.statement()
acc.delete()

AccountInterface

```
package com.ust;

public interface AccountInterface {
	public abstract void insert();

	public abstract void newAccDetails();
	public abstract void inputDetails();
	public abstract void displayAll();

	public abstract boolean search(String acno);
	public abstract void checkBalance();
	public abstract void deposit();
	public abstract void withdrawAmount();

	public abstract void statement() ;
	public abstract void delete() ;
}
```

Account Class

```
package com.ust;
import java.util.Scanner;
import java.util.regex.Matcher;
import java.util.regex.Pattern;

public class Account implements AccountInterface {
	String holderName;
	String address;
	String dOB;
	String phnNo;
	String adharNo;
	String acc_no;
	float preTrans;
	float amount;

	Scanner sc=new Scanner(System.in);

	Pattern pattern1,pattern2,pattern3;
	Matcher matcher1,matcher2,matcher3;
	boolean res;

	public float getAmount(){
		return amount;
	}
```

```
public void setAmount(float amount) {
	this.amount = amount;
}

public String getAcc_no() {
	return acc_no;
}

public void setAcc_no(String acc_no) {
	this.acc_no = acc_no;
}
public String getHolderName() {
	return holderName;
}
public void setHolderName(String holderName) {
	this.holderName = holderName;
}
public String getAddress() {
	return address;
}
public void setAddress(String address) {
	this.address = address;
}
public String getdOB() {
	return dOB;
}
public void setdOB(String dOB) {
	this.dOB = dOB;
}
public String getPhnNo() {
	return phnNo;
}
public void setPhnNo(String phnNo) {
	this.phnNo = phnNo;
}
public String getAdharNo() {

	return adharNo;
}
public void setAdharNo(String adharNo) {
	this.adharNo = adharNo;
}

@Override
public void insert(){

System.out.println("=========================================");
	System.out.println("             ACCOUNT CREATION    ");
```

```
System.out.println("=======================================");
        System.out.println("Enter Account Holder Name: ");
        holderName=sc.next();
        System.out.println("Enter Address : ");
        address=sc.next();

        do {
                System.out.println("Enter DOB (dd/mm/yyyy): ");
                String db =sc.next();
                pattern2=Pattern.
                compile("[0-3][0-9]/[0-1][0-9]/[0-9]{4}");
                matcher2=pattern2.matcher(db);
                if (matcher2.find()) {
                        dOB=db;
                        res=true;
                }
                else {
        System.out.println("Please enter in the given format");
                        res=false;
                }

        } while (res==false);

        do {
                System.out.println("Enter Contact Number : ");
                String phn =sc.next();
                pattern1= Pattern.compile("[9876][0-9]{9}");
                matcher1=pattern1.matcher(phn);
                if (matcher1.find()) {
                        phnNo=phn;
                        res=true;
                }
                else {
                        System.out.println("Please enter a valid
                        phone number ");
                        res=false;
                }

        } while (res== false);

        do {
                System.out.println("Enter Adhaar Number : ");
                String ad =sc.next();
                pattern3= Pattern.compile("[0-9]{9}");
                matcher3=pattern3.matcher(ad);
                if (matcher3.find()) {
                        adharNo=ad;
```

```
                res=true;
            }
            else {
        System.out.println("Please enter a valid adhaar number ");
                res=false;
            }

        } while (res== false);


}

@Override
public  void newAccDetails() {
        System.out.println("\n ------You are successfully opened
                        an account in our bank!------"
                + "\n\nAccount Holder : "+holderName+""
                + "\nAddress : "+address+""
                + "\nDate of Birth : "+dOB+""
                + "\nPhone Number : "+phnNo+""
                + "\nAdhaar Number : "+adharNo+""
                +  "\n\n------Account  will  be  activated  within
                2 working days------");
}

@Override
public void inputDetails() {

        System.out.println("\nEnter Account number : ");
        setAcc_no(sc.next());
        System.out.println("\nEnter Name : ");
        setHolderName(sc.next());
        System.out.println("\nEnter Amount : ");
        setAmount(sc.nextFloat());
        preTrans=getAmount();
}

@Override
public void displayAll() {
        System.out.println("Account Holder Name :
                "+getHolderName()+" Account Number :
            "+getAcc_no()+" Balance :"+getAmount());
}
@Override
public boolean search(String acno) {
        if (acc_no.equals(acno)) {
            return true;
        }
```

```
        return false;
}
@Override
public void checkBalance() {

System.out.println("=======================================");
        System.out.println("             BALANCE                   ");

System.out.println("=======================================");
        System.out.println(amount);

}
@Override
public void deposit() {
        System.out.println("Enter the amount you want to deposit : ");
        float dep =sc.nextFloat();
        amount = amount+ dep;
        System.out.println("Amount deposited Successfully!!! ");
        preTrans=dep;
}

@Override
public void withdrawAmount() {
        System.out.println("Enter the amount you want to
                        withdraw : ");

        float amtWithdraw =sc.nextFloat();

        if (amount>=amtWithdraw) {
                amount=amount-amtWithdraw;
                preTrans=-amtWithdraw;
                System.out.println("Withdrawal Successfull!!!");

        }
        else {
                System.out.println("Insufficient Balance!!!");
        }

}

@Override
public void statement() {
        System.out.println("=======================================");
        System.out.println("             STATEMENT                 ");
        System.out.println("=======================================");

        if (preTrans>0) {
                System.out.println(preTrans+" deposited");
```

```
		}
		else {
			System.out.println(Math.abs(preTrans)+" withdrawn");
		}

	}
	@Override
	public void delete() {
		System.out.println("Account successfully deleted!!!");

	}


}
```

MAIN CLASS

BankingTest Class

```
package com.ust;

import java.util.Scanner;

public class BankingTest {

	public static void main(String[] args) {
		// TODO Auto-generated method stub

		Scanner sc = new Scanner(System.in);
		AccountInterface acc = new Account();

		System.out.println("\n----------INPUT ACCOUNTS------------");
		System.out.println("Enter number of inputs you want to
					give : ");
		int n = sc.nextInt();
		Account A[]= new Account[n];
		for (int i = 0; i < A.length; i++) {
			A[i]= new Account();
			A[i].inputDetails();
		}


		int ch;
		do {
	System.out.println("\n@@@@@@@@@@@@ WELCOME TO SM INDIA BANK
				@@@@@@@@@@@@@@@");
```

```
System.out.println("=============================================");
            System.out.println("                      HOME
");

System.out.println("=============================================");
            System.out.println( "\n1.Open Account"
                        + "\n2.Withdraw"
                        + "\n3.Deposit"
                        + "\n4.Check Balance"
                        + "\n5.Statement"
                        + "\n6.Display All"
                        + "\n7.Delete Account"
                        + "\n8.Exit");

System.out.println("=============================================");
            System.out.println("            Enter an option
      ");

System.out.println("=============================================");
             ch=sc.nextInt();
            switch (ch) {

            case 1:
                  acc.insert();
                  acc.newAccDetails();
                  break;

            case 2:

System.out.println("=============================================");
                  System.out.println("             WITHDRAW
      ");

System.out.println("=============================================");
                  System.out.println("\nEnter Account Number :");
                  String acno= sc.next();
                  boolean found=false;
                  for (int i = 0; i < A.length; i++) {
                        found= A[i].search(acno);
                        if (found==true) {
                              A[i].withdrawAmount();
                              break;
                        }
                        System.out.println("Account not exists!");
                  }
                  break;
```

```
                case 3:

System.out.println("=============================================");
                        System.out.println("              DEPOSIT
        ");

System.out.println("=============================================");
                        System.out.println("\nEnter Account Number :");
                        String acno4= sc.next();
                        boolean found4=false;
                        for (int i = 0; i < A.length; i++) {
                               found4= A[i].search(acno4);
                               if (found4==true) {
                                      A[i].deposit();
                                      break;
                               }
                               System.out.println("Account not exists!");
                        }
                        break;


                case 4:

                               System.out.println("\nEnter Account Number :");
                               String acno1= sc.next();
                               boolean found1=false;
                               for (int i = 0; i < A.length; i++) {
                                      found1= A[i].search(acno1);
                                      if (found1==true) {
                                             A[i].checkBalance();
                                             break;
                                      }
                                      System.out.println("Account not exists!");
                               }
                               break;
                        case 5:
                               System.out.println("\nEnter Account Number :");
                               String acno2= sc.next();
                               boolean found2=false;
                               for (int i = 0; i < A.length; i++) {
                                      found2= A[i].search(acno2);
                                      if (found2==true) {
                                             A[i].statement();
                                             break;
                                      }
                                      System.out.println("Account not exists!");
                               }
```

```
                        break;


                case 6:

        System.out.println("=============================================");
                        System.out.println("              ALL ACCOUNTS
        ");

        System.out.println("=============================================");

                        for (int i = 0; i < A.length; i++) {
                               A[i].displayAll();
                        }
                        break;
                case 7:

        System.out.println("=============================================");
                        System.out.println("              DELETE    ACCOUNT
               ");
        System.out.println("=============================================");
                        System.out.println("\nEnter Account Number :");
                        String acno3= sc.next();
                        boolean found3=false;
                        for (int i = 0; i < A.length; i++) {
                               found3= A[i].search(acno3);
                               if (found3==true) {
                                      A[i].delete();
                                      break;
                               }
                               System.out.println("Account not exists!");
                        }
                        break;
                case 8:
                        System.out.println("Thank you !!!");
                        break;
                                default:
        System.out.println("=============================================");
                        System.out.println("      INVALID OPTION      ");
        System.out.println("=============================================");
                        break;
                }
               } while (ch!=8);
               sc.close();
        }


}
```

SAMPLE OUTPUTS

1. INPUT DETAILS

```
----------INPUT ACCOUNTS------------

Enter number of inputs you want to give :
2
Enter Account number :
10001
Enter Name :
Simi
Enter Amount :
5000
Enter Account number :
10002
Enter Name :
Amal
Enter Amount :
10000

@@@@@@@@@@@ WELCOME TO SM INDIA BANK @@@@@@@@@@@@@@
================================================
       HOME
================================================

1.Open Account
2.Withdraw
3.Deposit
4.Check Balance
5.Statement
6.Display All
7.Delete Account
8.Exit
================================================
                Enter an option
================================================
```

2. NEW ACCOUNT CREATION

```
==============================================
                ACCOUNT CREATION
==============================================
Enter Account Holder Name:
Soumya
Enter Address :
Trivandrum
Enter DOB (dd/mm/yyyy):
12/31/2000
Please enter in the given format
Enter DOB (dd/mm/yyyy):
12/03/2000
Enter Contact Number :
8945722
Please enter a valid phone number
Enter Contact Number :
9847561236
Enter Adhaar Number :
865493
Please enter a valid adhaar number
Enter Adhaar Number :
147589632541

 ------You are successfully opened an account in our bank!------

Account Holder : Soumya
Address : Trivandrum
Date of Birth : 12/03/2000
Phone Number : 9847561236
Adhaar Number : 147589632541

------Account will be activated within 2 working days------

@@@@@@@@@@@ WELCOME TO SM INDIA BANK @@@@@@@@@@@@@
==============================================
```

3. WITHDRAW

```
================================================
                  WITHDRAW
================================================

Enter Account Number :
1001
Enter the amount you want to withdraw :
1500
Withdrawal Successfull!!!

@@@@@@@@@@@@ WELCOME TO SM INDIA BANK @@@@@@@@@@@@@@
================================================
       HOME
================================================

1.Open Account
2.Withdraw
3.Deposit
4.Check Balance
5.Statement
6.Display All
7.Delete Account
8.Exit
================================================
                 Enter an option
================================================
```

4.CHECK BALANCE

```
Enter Account Number :
1001
==============================================
                BALANCE
==============================================
8500.0

@@@@@@@@@@@ WELCOME TO SM INDIA BANK @@@@@@@@@@
==============================================
       HOME
==============================================

1.Open Account
2.Withdraw
3.Deposit
4.Check Balance
5.Statement
6.Display All
7.Delete Account
8.Exit
==============================================
               Enter an option
==============================================
```

5.STATEMENT

```
Enter Account Number :
1001
╞═══════════════════════════════════════════
                STATEMENT
═══════════════════════════════════════════
5000.0 deposited

@@@@@@@@@@@ WELCOME TO SM INDIA BANK @@@@@@@@@@
═══════════════════════════════════════════
       HOME
═══════════════════════════════════════════

1.Open Account
2.Withdraw
3.Deposit
4.Check Balance
5.Statement
6.Display All
7.Delete Account
8.Exit
═══════════════════════════════════════════
                Enter an option
═══════════════════════════════════════════
```

6. DISPLAY ALL

```
-----------------------------------------------
                ALL ACCOUNTS
===============================================
Account Holder Name : Simi Account Number : 1001 Balance : 8500.0
Account Holder Name : Amal Account Number : 1002 Balance : 10000.0

@@@@@@@@@@@ WELCOME TO SM INDIA BANK @@@@@@@@@@@@@
===============================================
       HOME
===============================================

1.Open Account
2.Withdraw
3.Deposit
4.Check Balance
5.Statement
6.Display All
7.Delete Account
8.Exit
===============================================
                Enter an option
===============================================
```

7. DELETE

```
------------------------------------------------
7
================================================
                DELETE ACCOUNT
================================================

Enter Account Number :
1001
Account successfully deleted!!!

@@@@@@@@@@@ WELCOME TO SM INDIA BANK @@@@@@@@@@
================================================
       HOME
================================================

1.Open Account
2.Withdraw
3.Deposit
4.Check Balance
5.Statement
6.Display All
7.Delete Account
8.Exit
================================================
                Enter an option
================================================
```

8. EXIT

```
@@@@@@@@@@ WELCOME TO SM INDIA BANK @@@@@@@@@@
================================================
       HOME
================================================

1.Open Account
2.Withdraw
3.Deposit
4.Check Balance
5.Statement
6.Display All
7.Delete Account
8.Exit
================================================
                Enter an option
================================================
8
Thank you !!!
```