Lab program 5:

Develop a Java program to create a class Bank that maintains two kinds of accounts for its customers, one called savings account and the other current account. The savings account provides compound interest and withdrawal facilities but no cheque book facility. The current account provides cheque book facility but no interest. Current account holders should also maintain a minimum balance and if the balance falls below this level, a service charge is imposed. Create a class Account that stores customer name, account number and type of account. From this derive the classes Curr-acct and Sav-acct to make them more specific to their requirements. Include the necessary methods in order to achieve the following tasks:
a) Accept deposit from customer and update the balance.
b) Display the balance.
c) Compute and deposit interest
d) Permit withdrawal and update the balance
Check for the minimum balance, impose penalty if necessary and update the balance.

```java
import java.util.*;
import java.lang.Math;
class Account
{
        String name;
        int acctno;
        char type;
        double balance;
        double dep;
        boolean cheq;

        void get(char c)
        {
                type = c;
                if(c=='s' || c == 'S')
                cheq=false;
                else cheq=true;
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter your name");
                name = sc.nextLine();
                System.out.println("Enter your account number");
                acctno = sc.nextInt();
                System.out.println("Enter the current balance in your account");
                balance= sc.nextDouble();
        }

        void putd()
```

```java
	{
		System.out.println("Account details");
		System.out.println("Name: "+name);
		System.out.println("Account number: "+acctno);
		System.out.println("Account type :"+type);
		System.out.println("balance: "+balance);
	}
	void dep()
	{
				Scanner ss = new Scanner(System.in);
				System.out.println("Enter the amount to be deposited");
				dep= ss.nextDouble();
				balance=balance +dep;
				System.out.println("Amount has been deposited and balance has been
updated");
	}
	void display()
	{

				System.out.println("Balance amount is "+balance);
	}



}

class Saving extends Account
{

	double rate;

	double s_with;
	int n;

	int ch;
	double amt;
	double term;
	double pr;



	void ci()
	{
				Scanner ss = new Scanner(System.in);
				System.out.println("Enter principal deposit amount");
				pr = ss.nextDouble();
```

```java
                                        System.out.println("Enter the rate of interest");
                                        rate = ss.nextDouble();
                                        System.out.println("Enter the term(years)");
                                        term = ss.nextDouble();
                                        System.out.println("Enter the number of times interest in
compounded annually");

                                        n = ss.nextInt();
                                        amt = pr* Math.pow((1+(rate/100)),(n*term));
                                        balance+= amt;
                                        System.out.println("Interest is compounded and deposited;
balance is updated");

        }

        void with_s()
        {

                                Scanner ss = new Scanner(System.in);
                                System.out.println("Enter the amount of money to be withdrawn");
                                s_with = ss.nextDouble();
                                if(s_with>balance)
                                System.out.println("Insufficient balance");
                                else
                                {balance= balance - s_with;
                                System.out.println("Money has been withdrawn and balance has been
updated");}
        }




}

class Current extends Account
{

        double c_with;
        double pen;
        double min;
        Current()
        {
                pen=100;
                min=500;
        }

        void with_c()
```

```java
        {
                            Scanner xx = new Scanner(System.in);
                            System.out.println("Enter the amount to be withdrawn");
                            c_with= xx.nextDouble();
                            if(c_with>balance)
                            {System.out.println("Insufficient funds!");
                            return;}
                            else
                            {balance= balance- c_with;
                            System.out.println("Amount has been withdrawn and balance has been
updated");}
                            if(balance<min)
                            {
                                    System.out.println("Balance is below the minimum threshold.
Service penalty charge = 100/- .");
                                    if(balance<pen)
                                    System.out.println("Due to insufficient funds, penalty charge will
be deducted from account after replenishing. Current balance is "+balance);
                                    else
                                    {
                                            balance= balance-pen;
                                            System.out.println("Penalty charge has been deducted
from account balance. Current balance is "+balance);
                                    }
                            }
        }


}

class Bank
{
        public static void main(String sss[])
        {
                int cch, chh;
                Scanner sx = new Scanner(System.in);
                System.out.println("----------------");
                System.out.println("WELCOME");
                System.out.println("----------------");
                System.out.println("Is it a Savings account or current account? 1:  SAVINGS ; 2:
CURRENT");
                int ch= sx.nextInt();
                if(ch==1)
                {
                        Saving s = new Saving();
                        s.get('S');
                        do{
```

```java
                        System.out.println("1. Deposit money\n2. Calculate compound interest\n3.
Withdraw money\n4. Display balance \n5. Exit");
                        System.out.println("Enter your choice");
                        chh= sx.nextInt();
                        switch(chh)
                        {
                                case 1:
                                s.dep();
                                break;

                                case 2:
                                s.ci();
                                break;

                                case 3:
                                s.with_s();
                                break;

                                case 4:
                                s.display();
                                break;


                                case 5:
                                break;

                                default:
                                System.out.println("Wrong option.");
                                break;
                        }
                        }while(chh!=6);

                }
                else if(ch==2)
                {
                        Current cr = new Current();
                        cr.get('C');
                        do{
                        System.out.println("1. Deposit money\n2. Withdraw money\n4. Display
balance\n5. Exit");
                        cch= sx.nextInt();
                        switch(cch)
                        {
                                case 1:
                                cr.dep();
                                break;
```

```java
                        case 2:
                        cr.with_c();
                        break;

                        case 3:
                        cr.display();
                        break;

                        case 4:
                        break;

                        default:
                        System.out.println("Wrong option.");
                        break;
                    }
            }while(cch!=5);



            }
            else System.out.println("Wrong!");
        }
}
```

THE OUTPUT:

```
WELCOME
-----------------
Is it a Savings account or current account? 1:  SAVINGS ; 2: CURRENT
2
Enter your name
yashu
Enter your account number
3456
Enter the current balance in your account
98000
1. Deposit money
2. Withdraw money
4. Display balance
5. Exit
1
Enter the amount to be deposited
1234567
Amount has been deposited and balance has been updated
1. Deposit money
2. Withdraw money
4. Display balance
5. Exit
3
Balance amount is 1332567.0
1. Deposit money
2. Withdraw money
4. Display balance
5. Exit
2
Enter the amount to be withdrawn
1200
Amount has been withdrawn and balance has been updated
1. Deposit money
2. Withdraw money
4. Display balance
5. Exit
```