5. Develop a Java program to create a class Bank that maintains two kinds of account 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:

- *Accept deposit from customer and update the balance.*
- *Display the balance.*
- *Compute and deposit interest*
- *Permit withdrawal and update the balance*
- *Check for the minimum balance, impose penalty if necessary and update the balance.*

```
import java.util.Scanner;

import java.lang.Math;

class bank{

   String name;

   int acc_no;

   float bal,si;


   void accept(){
```

```
        Scanner scan = new Scanner(System.in);
        System.out.println();
        System.out.println("Enter the name of the account
holder: ");
        name = scan.nextLine();
        System.out.println("Enter account number: ");
        acc_no = scan.nextInt();
        System.out.println("Enter account balance:");
        bal = scan.nextFloat();
    }

    void display(){
        System.out.println();
        System.out.println("Details");
        System.out.println("Name: "+name+"\nAccount
number: "+acc_no+"\nBalance: "+bal);
    }

    void deposit(){
        System.out.println();
        Scanner scan = new Scanner(System.in);
        System.out.println("\nDo you want to deposit(1 for yes
2 for no): ");
```

```
        int d = scan.nextInt();
        if(d==1){
            System.out.println("Enter the amount to be
deposited: ");
            int amt = scan.nextInt();
            bal = bal + amt;
            System.out.println("Available balance= "+bal);
        }
    }
}

class savings extends bank{

    void cheque(){
        System.out.println("\nNo cheque service");
    }

    void simple_interest(){
        System.out.println();
        Scanner scan = new Scanner(System.in);
        System.out.println("\nEnter Rate of Interest: ");
        int r = scan.nextInt();
```

```
        System.out.println("Enter the number of times interest
applied per time period");
        int n = scan.nextInt();
        System.out.println("Enter the time elapse: ");
        int t = scan.nextInt();
        si = bal*(1+r/n);
        System.out.println("Simple interest is = Rs
"+(Math.pow(si,n*t)));
    }

    void withdrawal(){
        float amount;
        Scanner scan = new Scanner(System.in);
        System.out.println("No minimum balance required");
        System.out.println("Enter the amount to be
withdrawn");
        amount = scan.nextFloat();
        if(amount>bal)
            System.out.println("Balance is insufficient");
        else{
            bal = bal - amount;
            System.out.println(amount + "withdrawn");
            System.out.println("Available balance= " + bal);
```

```
        }
    }
}

class current extends bank{
    float service_charge = 100;

    void cheque(){
        System.out.println("\nCheque service available");
    }

    void withdrawal(){
        float amount;
        Scanner scan = new Scanner(System.in);
        System.out.println("Minimum balance = Rs 1000.00");
        System.out.println("Enter the amount to be withdrawn:
");
        amount = scan.nextFloat();
        if(amount > bal)
            System.out.println("Balance is insufficient");
        else{
        bal= bal-amount;
```

```
        if(bal<1000){

            bal = bal-service_charge;
            System.out.println("Service charge of Rs "+
service_charge + "is added.");
            System.out.println("Available balance= " + bal);
        }
        else{
                System.out.println(amount + "withdrawn");
                System.out.println("Available balance= " + bal);
        }
        }
    }
}

public class Main
{
    public static void main(String[] args) {

        savings obj1 = new savings();
        current obj2 = new current();
```

```
System.out.println("1. Savings");
System.out.println("2. Current");
System.out.print("Enter your choice: ");
Scanner scan = new Scanner(System.in);
int ch = scan.nextInt();
switch(ch){
   case 1: obj1 = new savings();
           obj1.accept();
           obj1.display();
           obj1.cheque();
           obj1.deposit();
           obj1.simple_interest();
           obj1.withdrawal();
           break;

      case 2: obj2 = new current();
           obj2.accept();
           obj2.display();
           obj2.cheque();
           obj2.deposit();
           obj2.withdrawal();
           break;
```

```
            default: System.out.println("Invalid Input");
        }
    }
}
```

Output:

For Current Account:

```
1. Savings
2. Current
Enter your choice: 2

Enter the name of the account holder:
Rahul
Enter account number:
1432
Enter account balance:
432

Details
Name: Rahul
Account number: 1432
Balance: 432.0

Cheque service available


Do you want to deposit(1 for yes  2 for no):
1
Enter the amount to be deposited:
123
Available balance= 555.0
Minimum balance = Rs 1000.00
Enter the amount to be withdrawn:
12
Service charge of Rs 100.0is added.
Available balance= 443.0
```

For Savings Account:

```
1. Savings
2. Current
Enter your choice: 1

Enter the name of the account holder:
Ron
Enter account number:
12345
Enter account balance:
1234

Details
Name: Ron
Account number: 12345
Balance: 1234.0

No cheque service


Do you want to deposit(1 for yes  2 for no):
1
Enter the amount to be deposited:
12
Available balance= 1246.0


Enter Rate of Interest:
10
Enter the number of times interest applied per time period
1
Enter the time elapse:
1
Simple interest is = Rs 13706.0
No minimum balance required
Enter the amount to be withdrawn
1234
1234.0withdrawn
Available balance= 12.0
```