Week 5
1BM21CS044

5. Develop a Java program to create a class Bank that maintains two kinds of account for its customers, one called a 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 Cur-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.

```
import java.util.Scanner;
import java.lang.Math;

class Bank {
    Scanner sc= new Scanner (System.in);
    String name;
    char acc-no;
    float bal, ci;

  void accept() {
    System.out.println("Enter your name");
        name = sc.nextLine();
    System.out.println("Enter the balance amount");
        bal = sc.nextFloat();
```

```
void display()
  { System.out.println("Name :"+name); }
    }
void deposit()
  { float amount;
    int choice;
    System.out.println("Do you want to deposit
                        (1 for yes, 2 for no)");
    choice= sc.nextInt();

  if (choice==1)
  { System.out.println("Enter amount to be
                        deposited");
    amount = sc.nextFloat();
    if (amount>bal)
    { SOP("Amount in bank insufficient");
        }

    else
    { bal=bal+amount;
        }
      SOP("Current balance :"+bal);
        }
        }}
class Current extends Bank{
      int service-fee=50;
    void cheque()
  { SOP("cheque service available");
        }
    void withdrawal(){
  float amt;
    SOP("Enter amount to be withdrawn");
      amt=sc.nextFloat();
```

```
if (amt > bal)
    SOP ("Balance insufficient");
else {
    bal = bal - amt;

    if (bal < 1000) {
        bal = bal - service_fee;
    SOP ("50 rs is taken as service fee");
        }
    SOP ("Withdrawn: "+amt);
    SOP ("Current balance: "+bal);
        }
        }
        }

class Savings extends Bank {
    void cheque()
    { SOP ("check service not available");
        }
void withdrawal()
    { float amt;
    SOP ("Enter the amount to be withdrawn");
    amt = sc.nextFloat();

    if (amt > bal)
    SOP ("Balance insufficient");

    else
    bal = bal - amt;
    SOP ("Withdrawn: "+amt);
    SOP ("Current balance: "+bal);
        }
void interest()
{ SOP("Enter the rate of interest");
    int r = sc.nextInt();
```

```
SOP(" Enter no. of times interest applied per time period");
  int n = sc.nextInt();
SOP ("Enter the time elapsed");
  int t = sc.nextInt();
  ci = bal * (1 + (r/n));
  SOP (" Compound interest is "+ (Math.pow (ci, n*t)));
    }
    }

public class Account {
  public static void main (String args[]) {
Scanner sc = new Scanner (System.in);
Savings obj1 = new Savings ();
Current obj2 = new Current();
SOP ("\n1. Savings Account \n 2. Current account");
  int choice = sc.nextInt();
  Switch (choice)
{     case 1:
        obj1.accept();
        obj1.display();
        obj1.cheque();
        obj1.deposit();
        obj1.interest();
        obj1.withdrawal();
        break;

    case 2:
      obj2.accept();
      obj2.display();
      obj2.cheque();
      obj2.deposit();
      obj2.withdrawal();
        break;
  default: SOP ("Invalid choice");
    }
    } }
```

Output

```
1.Savings account
2.Current account

1
Enter your name
chinmay
Enter the balance amount
12000
Name : chinmay
Cheque service not available
Do you want to deposit(1 for yes ,2 for no)
1
Enter the amount to be deposited
123
Current balance : 12123.0
Enter the rate of interest
2
Enter the number of times interest applied per time period
5
```

```
Enter the rate of interest
2
Enter the number of times interest applied per time period
5
Enter the time elapsed
2
Compound interest is 6.8564774438404O9E40
Enter the amount to be withdrawn
234
Withdrawn : 234.0
Current balance : 11889.0

Process finished with exit code 0
```

```
1.Savings account
2.Current account
2
Enter your name
chinmay
Enter the balance amount
12345
Name : chinmay
Cheque service available
Do you want to deposit(1 for yes ,2 for no)
1
Enter the amount to be deposited
1234
Current balance : 13579.0
Enter the amount to be withdrawn
2345
Withdrawn : 2345.0
Current balance : 11234.0

Process finished with exit code 0
```