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1BM19CS202
3-D

Lab program 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:
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;
```

```java
                else cheq=true;
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter your name");
                name = sc.nextLine();
                System.out.println("Enter the account number");
                acctno = sc.nextInt();
                System.out.println("Enter the current available balance in your account");
                balance= sc.nextDouble();
        }

        void putd()
        {
                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);
        }

        void check()
        {
                                if(cheq==false)
                                System.out.println("Cheque book facility is not available");
                                else
                                System.out.println("Cheque book facility is available");

        }


}

class Saving extends Account
{

        double rate;

        double s_with;
        int n;

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

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

```java
                                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 lab6
{
        public static void main(String sss[])
        {
                int cch, chh;
                Scanner sx = new Scanner(System.in);
                System.out.println("--------Welcome----------");
                System.out.println("Savings account or current account? 1- Savings; 2- Current");
                int ch= sx.nextInt();
                if(ch==1)
                {
                        Saving s = new Saving();
                        s.get('S');
                        do{
                        System.out.println("1. Deposit money\n2. Calculate compound interest\n3.
Withdraw money\n4. Display balance\n5. Cheque book facility\n6. 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;
```

```java
                        case 5:
                        s.check();
                        break;

                        case 6:
                        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. Chequebook facility\n3. Withdraw
money\n4. Display balance\n5. Exit");
                cch= sx.nextInt();
                switch(cch)
                {
                        case 1:
                        cr.dep();
                        break;

                        case 2:
                        cr.check();
                        break;

                        case 3:
                        cr.with_c();
                        break;

                        case 4:
                        cr.display();
                        break;

                        case 5:
                        break;

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


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

```
Savings account or current account? 1- Savings; 2- Current
1
Enter your name
hamid
Enter the account number
420
Enter the current available balance in your account
900000
1. Deposit money
2. Calculate compound interest
3. Withdraw money
4. Display balance
5. Cheque book facility
6. Exit
Enter your choice
2
Enter principal deposit amount
3
Enter the rate of interest
3
Enter the term(years)
3
Enter the number of times interest in compounded annually
3
Interest is compounded and deposited; balance is updated
1. Deposit money
2. Calculate compound interest
3. Withdraw money
4. Display balance
5. Cheque book facility
6. Exit
Enter your choice
3
Enter the amount of money to be withdrawn
700
Money has been withdrawn and balance has been updated
1. Deposit money
2. Calculate compound interest
3. Withdraw money
4. Display balance
5. Cheque book facility
6. Exit
Enter your choice
4
Balance amount is 899303.9143195514
1. Deposit money
2. Calculate compound interest
3. Withdraw money
4. Display balance
5. Cheque book facility
6. Exit
Enter your choice
```