LAB PROGRAM – 5

Q. 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 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 Account
{
    String name, acc_type;
int acc_no;
double bal,dep;
    Scanner scan= new Scanner(System.in);
    void setd()
    {
        System.out.println("Enter your Name:");
    }
}
```

```
name=scan.next();
System.out.println("Enter your Account Number:");
acc_no=scan.nextInt();
System.out.println("Enter your Account type: (Savings/Current)");
acc_type=scan.next();
System.out.println("Enter the Bank Balance:");
bal=scan.nextInt();
}
void disp()
{
System.out.println("Name: "+name);
System.out.println("Account Number: "+acc_no);
System.out.println("Account Type: "+acc_type);
System.out.println("Current balance is: "+bal);
}
void deposit()
{
System.out.println("Enter the amount to be deposited:");
dep=scan.nextInt();
bal+=dep;
System.out.println("BALANCE AMOUNT: "+bal);
}
/*boolean acc(String acc_type)
{
if(acc_type.equals("Savings"))
return true;
else if(acc_type=="Current")
return false;
else
return true;
```

```
}*/
}
class Cur_acct extends Account
{
int penal()
{
double min, pen;
System.out.println("Enter Minimum balance & penalty amount if not followed:");
min=5000; pen=min*0.05;
if(bal<min)
bal-=pen;
System.out.println("Penalty imposed for having insufficient balance"); return 0;
}
else
  {System.out.println("No penalty");
  return 1;}
}
void withdrawal()
{
double amt;
System.out.println("Enter amount to be withdrawn:");
amt=scan.nextInt();
      int a= penal();
if(a==1)
{
if(bal>=amt)
        { bal=bal-amt;
System.out.println("Account Balance after withdrawal is:" +bal);}
}
```

```
else
        System.out.println("The amount can't be withdrawn");
   }
}
class Sav_acct extends Account
void calc_interest()
System.out.println("Enter Time in years and Rate of interest");
double t=scan.nextDouble(); double r=scan.nextDouble();
double CI = bal*Math.pow((1 + r/100), t);
System.out.println("ACCOUNT BALANCE and compounding interest: "+ bal);
}
void withdrawal()
{
double amt;
System.out.println("Enter amount to be withdrawn:");
amt=scan.nextInt();
if(bal>=amt)
        { bal=bal-amt;
System.out.println("Account Balance after withdrawal is:" +bal);}
else
        System.out.println("The amount can't be withdrawn");
   }
}
class Bank
{
 public static void main(String arg[])
Scanner ss=new Scanner(System.in);
```

```
Account b1=new Account();
b1.setd();
if(b1.acc_type.equals("Savings"))
{
Sav_acct s1=new Sav_acct();
//s1=b1;
s1.name=b1.name; s1.acc_no=b1.acc_no; s1.acc_type=b1.acc_type; s1.bal=b1.bal;
while(true)
{
System.out.println("Enter your choice:\n1.Deposit\n2.Calculate
interest\n3.Withdraw\n4.Display\n5.Exit");
int choice=ss.nextInt();
switch(choice)
{
case 1: s1.deposit(); break;
case 2: s1.calc_interest(); break;
case 3: s1.withdrawal(); break;
case 4: s1.disp(); break;
case 5: System.exit(0);
default: System.out.println("Invalid input");
}
}
}
else if(b1.acc_type.equals("Current"))
{
Cur_acct c1=new Cur_acct();
c1.name=b1.name; c1.acc_no=b1.acc_no; c1.acc_type=b1.acc_type; c1.bal=b1.bal;
while(true)
{
System.out.println("Enter your choice:\n1.Deposit\n2.Penalty
Check\n3.Withdraw\n4.Display\n5.Exit");
```

```
int choice=ss.nextInt();
switch(choice)
{
case 1: c1.deposit(); break;
case 2: c1.penal(); break;
case 3: c1.withdrawal(); break;
case 4: c1.disp(); break;
case 5: System.exit(0);
default: System.out.println("Invalid input");
}
}
}
else
System.out.println("Invalid Account type");
 }
}
```

5 Revelop a jova pragram to create a day Bank import jova . letil . Sconner, import jova . long . math; glau Account that mathetine too kinds of account for its automore, one called saving account and the other aurent account. The saving account broukle String name, acc-type; compaind intenst and with chancel Lauditin but no chaque book facility. The current account provides chaque book facility but no intenst. Current double bal, dep; Scanner scan = new Scanner (System-in). account holders should also maintain a minimum void setd () balance and if the interest falls below this send a service change it impairs System · Out brision (" Enter your name:"); System · Out · bristin (" Enter your Account number"); Sacc-no = Scan. nat ID(1); create a class feedered that store distance name, account number and type of account. From this destructive classes an act and bay-oct to make from More. Shape to their requirements Incollede the necessary methods in order to deliber the following task: system out printin to enth your Account type (saving), acc type = scommoto; system out printin ("enth the bank balance); a) Accepts affect from automar and update the bal= Scan next Int (); balance. 5) display the balance. void disp() compute the deposit interest System out brint In ("Nami" + nami); Permit contradrancel and update the balone system · act british (*Kcount Number + acc - no); system out printin ("Account Type:" + acc-type); system out printin ("Current balana is": + bal); void deposit () System · ced printh ("Enter the amount to be deposited") dep = scon. nextJut() batt = depi System Out printin ("Solona Amount" + bal);

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class sav-acct extends Account
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  return Kru;
 class cur-acct extends - Account
                                                                S.O.P ("Eviter Time in year and Rate of Interest
                                                                double t = scan not double (); double n= scan
  int penal ()
                                                                next Double ();
                                                               double a = bal + math poo (1+1/100)
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  double min, ben;
System ad printin ( enter Minimum balance & benatty
amount of not dellowed);
  amound y not followed);

min = 5000; pen = min + 0.05;

y (bal < nix)
                                                                Void withdrawal ()
                                                                 double amt;
                                                                  S.O.P ( enter amount to be withdrawn
   bal = ben;
                                                                  amt = Scan · nextint();

y (bal >= ant)

t bal = bal ant;
 & System · Out · brinten ("No benalty");
   Victum 1;
                                                                  S.O.P. ("Account Balance after withdrawal is "+bal")
void witherawal()
                                                                       S.O.P(" The amount con't be with drawn");
double ant;
 SOP ( " Enter comount to be with drawn);
                                                                    class Bank
   amt = san-nertInt ()
                                                                     public static void main (string anges)
         inta = penal ();
 if (a == 1)
                                                                     Scanner SS = new Scanner (Systemin);
                                                                     Account by = new Account (),
  il (bal 7=ant)
        Ebal =batant;
                                                                    if (b) acc - type egulas ("Saving"))
                                                                    b1.3dd();
S.O.P ( "Account Balona after with drawood is " +bn);
                                                                        Sav_acc-type equals ( sauings)
 SOP ("The amount can't be with drawn');
                                                                    200- accts1= new sav-acct();
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31-naml = 61-naml; 31 - acc- no = 61-acc - no; since-type = bl-acc-type; si-bal = bl-bal; case 1: (1 deposit (); break; case 2: C1- benal (); bulck; System out brint in 1" Enter your choice: \n1. Deposity call3: (1.withdrawall); break; nz · calculate interest \n3 with draw \n5 · display case4: (1.dab(); break; \ns. Exit"); Caus: system exit (0); default: system-out-println("Invalid input"); int choice = Ss. next mt (); Switch (choice) case 1: \$1. deposit(); break; Casez: 31. calc - Poterest (); break; aus: SI. coimphainal (); break; SOID ("Invalid Account type") case +: s1.disp(); breat; (asis: system. exit (0); default: S.O.P ("Invalid Input"); else's (b) acc - type equals ("Current")) Cur-acet (1 = new (un-acet (); CI-name=b1-name; c1.acc-no=b1.acc-no; CI-acc-type=bl.acc-type; CI-bal=b1.bal; cohile (trix) E SO.P (Entry your choia: In Debout Inc Penalty check (ns. withdraw (n & Display Ins Exit"); int choice = SS. next Int (); Switch (choice)

output Choose Account type: Press Clox current Account Press stor amount Account Entre name: Yash Enter account number: BMS7CAO12 Enth opening amount: 1000.00 3 coithdraw 1 Debosit - Display 1. Deposit Entre amount to adjust : 80000'00 Total amount 18: " 90000.00 2. Display Name: Yash Account-number: BMS 7CA 012 Amount: 90000.00

```
Enter your Account Number:
21315241
Enter your Account type: (Savings/Current)
Current
Enter the Bank Balance:
99900
Enter your choice:
1.Deposit
2.Penalty Check
3.Withdraw
4.Display
5.Exit
3
Enter amount to be withdrawn:
15000
Enter Minimum balance & penalty amount if not followed:
No penalty
Account Balance after withdrawal is:84900.0
Enter your choice:
1.Deposit
2.Penalty Check
3.Withdraw
4.Display
5.Exit
2
Enter Minimum balance & penalty amount if not followed:
No penalty
Check
3.Withdraw
4.Display
5.Exit
2
Enter Minimum balance & penalty amount if not followed:
No penalty
Enter your choice:
1.Deposit
2.Penalty Check
3.Withdraw
4.Display
5.Exit
5.Exit
1.Enter the amount to be deposited:
50000
Enter the amount to be deposited:
50000
Enter the amount to be deposited:
50000
```