

Week 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 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.

Code:

```
import java.util.Scanner;
class Account
{
    String cust_name, type_of_account;
    int acc_no;
    double balance;
    public void deposit(int choice)
    {
        if(choice == 0)
        {
            type_of_account = "Savings";
        }
        else
        {
            type_of_account = "Currency";
        }
        Scanner one = new Scanner(System.in);
        System.out.println("Enter name: ");
```

```

    cust_name = one.next();
    System.out.println("Enter acc_no: ");
    acc_no = one.nextInt();
    System.out.println("Enter depositing amount: ");
    balance = one.nextDouble();
}
public void updateBal()
{
    System.out.println("This is not available in the type of account you chose.");
}
public void withdraw()
{
    System.out.println("This is not available in the type of account you chose.");
}
void checkBal()
{
    System.out.println("This is not available in the type of account you chose.");
}
void computeInterest()
{
    System.out.println("This is not available in the type of account you chose.");
}
void depositInterest()
{
    System.out.println("This is not available in the type of account you chose.");
}
@Override
public String toString()
{
    return "Name:\t" + this.cust_name + "\nType of Account:\t"+
this.type_of_account+"\nAccount Number:\t"+ this.acc_no+"\nAmount of Money in
Account:\t"+ this.balance;
}
}
class Current extends Account
{
    double interest, cheque_book;
    Current()
    {

```

```

        System.out.println("You've chosen our special Account this gives you access to
our Cheque Book which holds info about your last ten transactions.");
    }
    public void updateBal()
    {
        System.out.println("Enter amount of money you want to deposit");
        Scanner three = new Scanner(System.in);
        cheque_book = three.nextDouble();
        balance += cheque_book;
        System.out.println("New Balance:\t"+balance);
    }
    public void withdraw()
    {
        System.out.println("Enter amount of money you want to withdraw");
        Scanner two = new Scanner(System.in);
        cheque_book = two.nextDouble();
        balance -= cheque_book;
        System.out.println("New Balance:\t"+balance);
    }
    public void computeInterest()
    {
        if(balance<50000)
        {
            interest = 1000;
            System.out.println("You have gone below our 50k limit and will be charged 1k for
every month you don't pay to keep your account over the minimum limit.");
            balance = balance - interest;
            System.out.println("Your new balance is:\t"+balance);
            return;
        }
        interest = 100;
        balance = balance - interest;
        System.out.println("Your new balance is:\t"+balance);

    }
    public void depositInterest(double s)
    {
        interest = s;
        balance = balance + interest - 100;
        System.out.println("New Balance:\t"+balance);
    }

```

```

    }
}
class Saving extends Account
{
    Saving()
    {
        System.out.println("Since you have chose a savings account, you don't have any
cheque book privilages.\nIf you wish to withdraw, please come irl.\nThere is no interest
and your money increases by 50 every month\n");
    }
    double servicecharge;
    public void checkBal()
    {
        servicecharge = 50;
        balance +=servicecharge;
    }
}
}
class Banking
{
    public static void main(String args[])
    {
        int choice;
        Account Account_obj;
        System.out.println("Please enter the type of account you want. 0 to choose
Savings.");
        Scanner type = new Scanner(System.in);
        choice = type.nextInt();
        if(choice==0)
        {
            Saving ref = new Saving();
            Account_obj = ref;
        }
        else
        {
            Current ref = new Current();
            Account_obj = ref;
        }
        Account_obj.deposit(choice);
    }
}

```

```

        System.out.println("Do you want to \n1)Display your account info\n2)Do you
want to update your balance?\n3)Do you want to withdraw?\n");
        while(true)
        {
            System.out.println("Enter choice");
            Scanner main = new Scanner(System.in);
            choice = main.nextInt();
            switch(choice)
            {
                case 1 : System.out.println(Account_obj);
                break;
                case 2 :Account_obj.updateBal();
                Account_obj.computeInterest();
                break;
                case 3 :
                Account_obj.withdraw();
                Account_obj.checkBal();
                Account_obj.depositInterest();
                break;
                case 4: System.exit(0);
                break;
                default : System.out.println("Invalid");
                break;
            }
        }
    }
}

```

Output:

```
PS C:\Users\Admin> cd "C:\Users\Admin\Desktop\1BM21CS246\246_java"
PS C:\Users\Admin\Desktop\1BM21CS246\246_java> set path="C:\Program Files\Java\jdk-19\bin"
PS C:\Users\Admin\Desktop\1BM21CS246\246_java> javac Banking.java
PS C:\Users\Admin\Desktop\1BM21CS246\246_java> java Banking
Please enter the type of account you want. 0 to choose Savings.
0
Since you have chose a savings account, you don't have any cheque book privilages.
If you wish to withdraw, please come irl.
There is no interest and your money increases by 50 every month

Enter name:
vrishank
Enter acc_no:
1
Enter depositing amount:
10000000
Do you want to
1)Display your account info
2)Do you want to update your balance?
3)Do you want to withdraw?

Enter choice
1
Name:   vrishank
Type of Account:      Savings
Account Number: 1
Amount of Money in Account:      1.0E7
Enter choice
2
This is not available in the type of account you chose.
This is not available in the type of account you chose.
Enter choice
3
This is not available in the type of account you chose.
This is not available in the type of account you chose.
Enter choice
1
Name:   vrishank
Type of Account:      Savings
Account Number: 1
Amount of Money in Account:      1.000005E7
Enter choice
4
PS C:\Users\Admin\Desktop\1BM21CS246\246_java>
```