

Program to Calculate Area of triangle ,Rectangle,circle using abstract class

```
import java.io.*;
import java.lang.*;
import java.util.*;
abstract class shape{
    int len,wid;

    shape(int l,int w)
    {
        len=l;
        wid=w;
    }
    abstract void printArea();
}

class rectangle extends shape
{
    rectangle(int a,int b)
    {
        super(a,b);
    }

    void printArea()
    {
        System.out.println("Area Of Rectangle is " + (len*wid));
    }
}
```

```
class triangle extends shape
```

```
{
```

```
    triangle(int a,int b)
```

```
    {
```

```
        super(a,b);
```

```
    }
```

```
    void printArea()
```

```
    {
```

```
        System.out.println("Area Of The Traingle Is " + ((len*wid)/2));
```

```
    }
```

```
}
```

```
class circle extends shape
```

```
{
```

```
    circle(int r1,int r2)
```

```
    {
```

```
        super(r1,r2);
```

```
    }
```

```
    void printArea()
```

```
    {
```

```
        System.out.println("Area Of the Circle is " + (3.142*len*len));
```

```
    }
```

```
}
```

```
class test
```

```
{
```

```
    public static void main(String[] args)
```

```
    {
```

```
        int l,b,rad;
```

```

Scanner sc=new Scanner(System.in);

System.out.println("Enter the length/base of the rectangle/Traingle respectively ");

l=sc.nextInt();

System.out.println("Enter the breadth/height of the rectangle/Triangle respectively
");

b=sc.nextInt();

System.out.println("Enter the radius of the circle ");

rad=sc.nextInt();

shape s;

rectangle r=new rectangle(l,b);

triangle t=new triangle(l,b);

circle c=new circle(rad,rad);

s=r;

s.printArea(); //prints the area of the rectangle

s=t;

s.printArea(); //prints the area of the triangle

s=c;

s.printArea(); //prints the area of the circle

}

}

```

Output

```
Command Prompt
C:\Users\Shreehari Kulkarni\Desktop\LAB SUBJECT\JAVALAB>javac shape_abstract.java
C:\Users\Shreehari Kulkarni\Desktop\LAB SUBJECT\JAVALAB>java shape_abstract
Error: Could not find or load main class shape_abstract
Caused by: java.lang.ClassNotFoundException: shape_abstract
C:\Users\Shreehari Kulkarni\Desktop\LAB SUBJECT\JAVALAB>java test
Enter the length/base of the rectangle/triangle respectively
10
Enter the breadth/height of the rectangle/triangle respectively
5
Enter the radius of the circle
7
Area Of Rectangle is 50
Area Of The Triangle is 25
Area Of the circle is 153.958
C:\Users\Shreehari Kulkarni\Desktop\LAB SUBJECT\JAVALAB>
```

Bank Program

```
import java.io.*;
import java.lang.*;
import java.util.*;
abstract class account
{
    String name;
    String acc_no;
    String type;
    double balance;

    account(String n,String a,String t,double b)
    {
        name=n;
        acc_no=a;
```

```

        type=t;
        balance=b;
    }
    abstract void deposit();
    abstract void display();
    abstract void withdraw();
    abstract void fine();
    abstract void inter();
}

class curr_acc extends account
{
    curr_acc(String n,String a,String t,double b)
    {
        super(n,a,t,b);
    }

    void fine()
    {
        if(balance<1000)
        {
            System.out.println("You Will Be Fined 500Rs Because Minimum balance In Your
Account Must be 1000 ");
            balance=balance-500;
            display();
        }
        else
        {
            System.out.println("You Will Not Be Charged Any Fine Thank You ");
            display();
        }
    }
}

```

```
}
```

```
void display()
```

```
{
```

```
    System.out.println("Name Of the Account Holder is " + name);
```

```
    System.out.println("Account Number of the Account Holder is " + acc_no);
```

```
    System.out.println("Type Of the Account of the Account Holder is " + type);
```

```
    System.out.println("Balance In Your Account is " + balance);
```

```
}
```

```
void deposit()
```

```
{
```

```
    double sum;
```

```
    Scanner sc=new Scanner(System.in);
```

```
    System.out.println("Enter the Amount You Want To Deposit ");
```

```
    sum=sc.nextDouble();
```

```
    balance=balance+sum;
```

```
    display();
```

```
}
```

```
void withdraw()
```

```
{
```

```
    double sum;
```

```
    Scanner sc=new Scanner(System.in);
```

```
    System.out.println("Enter the amount You Want To Withdraw ");
```

```
    sum=sc.nextDouble();
```

```
    balance=balance-sum;
```

```
    if(balance>1000)
```

```
    {
```

```
        display();
```

```
    }
```

```

        else
        {
            System.out.println("You Cannot Withdraw This Much Amount ");
            fine();
        }
    }

    void inter()
    {
        System.out.println("Your Account Type Is Not Eligible For Any Interest ");
    }
}

class sav_acc extends account
{
    sav_acc(String n,String a,String t,double b)
    {
        super(n,a,t,b);
    }
    void display()
    {
        System.out.println("Name Of the Account Holder is " + name);
        System.out.println();
        System.out.println("Account Number of the Account Holder is " + acc_no);
        System.out.println();
        System.out.println("Type Of the Account of the Account Holder is " + type);
        System.out.println();
        System.out.println("Balance In Your Account is " + balance);
        System.out.println();
    }
}

```

```
void withdraw()
{
    double sum;
    Scanner sc=new Scanner(System.in);
    System.out.println("Enter the amount You Want To Withdraw ");
    System.out.println();
    sum=sc.nextDouble();
    balance=balance-sum;
    display();
}
```

```
void deposit()
{
    int sum;
    Scanner sc=new Scanner(System.in);
    System.out.println("Enter the principal amount you want to submit ");
    sum=sc.nextInt();
    balance+=sum;
    display();
}
```

```
void inter()
{
    double r,t;
    double interest;
    double amount;
    double power;
    Scanner sc=new Scanner(System.in);
    System.out.println("Enter the Rate of interest ");
```



```

        r=sc.nextDouble();

        System.out.println("Enter the Year of time Account has to be elapsed ");

        t=sc.nextDouble();


        power=Math.pow((1+((r)/(100))),t);

        System.out.println(power);

        amount=balance*power;

        System.out.println(amount);

        interest=amount-balance;

        System.out.println("Interest Accumalted In Your Account is " + interest);

        display();

        System.out.println();

    }


    void fine()
    {

        System.out.println("You Have No Restriction On Your Minimum Balance Thank You!");

        System.out.println();

    }

}


class test
{

    public static void main(String[] args)
    {

        account a;

        Scanner sc=new Scanner(System.in);

        String name,acc_num,typ;

```

```

int option;

double bal;

System.out.println("Enter the name of the account holder ");
name=sc.next();

System.out.println("Enter the Account Number ");
acc_num=sc.next();

typ="Current Account";

System.out.println("Enter the Minimum Balance in the account ");
bal=sc.nextDouble();

System.out.println();

System.out.println("1: Current Account ");
System.out.println("2: Savings Account ");
System.out.println("3: Exit");
System.out.println();

System.out.println("Enter your choice ");
option=sc.nextInt();

switch(option)
{
    case 1:
        curr_acc c=new curr_acc(name,acc_num,typ,bal);
        a=c;
        int counter;
        do
        {
            System.out.println("1: Check For Fine ");
            System.out.println("2: Deposit ");
            System.out.println("3: Withdraw ");
            System.out.println("4: Exit");
            System.out.println();
            System.out.println("Enter Your Choice ");

```

```

        counter=sc.nextInt();
        switch(counter)
        {
            case 1:
                a.fine();
                break;

            case 2:
                a.deposit();
                break;

            case 3:
                a.withdraw();
                break;

            case 4:
                System.exit(0);
                break;

        }
    }while(counter!=4);

    break;

    case 2:
    sav_acc s=new sav_acc(name,acc_num,typ,bal);
    a=s;
    int cnr;
do
{

```

```
System.out.println("1: Deposit ");
System.out.println("2: Withdraw ");
System.out.println("3: Interest");
System.out.println("4: Exit");
System.out.println();
System.out.println("Enter Your Choice ");
cnr=sc.nextInt();
switch(cnr)
{
    case 1:
        a.deposit();
        break;

    case 2:
        a.withdraw();
        break;

    case 3:
        a.inter();

    case 4:
        System.exit(0);
        break;

}
}while(cnr!=5);
break;

case 3:
```

```

        System.exit(0);

        break;

    }

}

```

Output

```

Command Prompt - java test
C:\Users\Shreehari Kulkarni\Desktop\LAB SUBJECT\JAVALAB>javac bank.java
C:\Users\Shreehari Kulkarni\Desktop\LAB SUBJECT\JAVALAB>java test
Enter the name of the account holder
Hari
Enter the Account Number
18M19CS153
Enter the Minimum Balance in the account
2500
1: Current Account
2: Savings Account
3: Exit
Enter your choice
1
1: Deposit
2: Withdraw
3: Interest
4: Exit
Enter Your Choice
1
Enter the principal amount you want to submit
500
Name Of the Account Holder Is Hari
Account Number of the Account Holder Is 18M19CS153
Type Of the Account of the Account Holder Is Current Account
Balance In Your Account Is 2500.0
1: Deposit
2: Withdraw
3: Interest
4: Exit
Enter Your Choice

```