Assignment - 7

Name :- Aindrail Santra Roll No. :- 2029044

Q1.

```
import java.util.*;
class Complex
{
double real, imaginary;
Complex(double r, double i)
{
this.real = r;
this.imaginary = i;
}
public void disp ()
{
System.out.println(this.real + " + " + this.imaginary + " i");
}
public static Complex add (Complex n1, Complex n2)
{
Complex res = new Complex (0, 0);
res.real = n1.real + n2.real;
res.imaginary = n1.imaginary + n2.imaginary;
return res;
}
public static Complex subtract (Complex n1, Complex n2)
{
Complex r = new Complex (0, 0);
r.real = n1.real - n2.real;
r.imaginary = n1.imaginary - n2.imaginary;
return r;
}
public static void main(String[] args)
{
Scanner sc = new Scanner(System.in);
double r1,c1,r2,c2;
System.out.println("Enter the first complex number : ");
r1 = sc.nextDouble();
c1 = sc.nextDouble();
System.out.println("Enter the second complex number : ");
r2 = sc.nextDouble();
c2 = sc.nextDouble();
Complex num1 = new Complex (r1, c1);
Complex num2 = new Complex (r2, c2);
Complex sum = add(num1, num2);
Complex difference = subtract(num1, num2);
System.out.println("Addition of two complex numbers : " );
sum.disp();
System.out.println("Subtraction of two complex numbers : " );
difference.disp();
sc.close();
}
}
```

OUTPUT

```
PS C:\4th Sem\WEB Tech> & 'C:\Program Files\Java\jdk-11.0.8\bin\java.exe' '-cp' 'C:\Users\KIIT\AppData\Roaming\Code\User\workspaceStorage\ba64649877e9721f4e91b07c048c8a6b\redhat.java\jdt_ws
\WEB Tech_c223e9a6\bin' 'Complex'
Enter the first complex number :
12
3
Enter the second complex number :
13
6
Addition of two complex numbers :
25.0 + 9.0 i
Subtraction of two complex numbers :
-1.0 + -3.0 i
PS C:\4th Sem\WEB Tech>
```

Q2.

```
import java.util.*;
public class Volume
{
static double vol (double r)
{
return (4 * 3.14 * r * r * r)/3;
}
static double vol (int b, int h)
{
return b * h;
}
static double vol (double r, int h)
{
return (22.7 * r * r * h);
}
static double vol (double r, double h)
{
return (22.7 * r * r * (h/3));
}
static double vol (double l, double w, double h)
{
return l * w * h;
}
public static void main (String[] args)
{
Scanner sc = new Scanner(System.in);
System.out.println(" Volume calculator ");
System.out.println(" 1 - Sphere, 2 - Prism, 3 - Cylinder, 4 - Cone, 5- Cuboid");
int c;
System.out.println("Enter your choice : ");
c = sc.nextInt();
double res;
switch (c)
{
case 1 :
{
double r;
System.out.println("Enter the radius of the circle");
r = sc.nextDouble();
res = vol(r);
System.out.println("Volume of the circle : " + res);
break;
}
case 2 :
{
int b, h;
System.out.println("Enter the base and height of the prism");
```

```
b = sc.nextInt();
h = sc.nextInt();
res = vol(b,h);
System.out.println("Volume of the prism: " + res);
break;
}
case 3 :
{
double r; int h;
System.out.println("Enter the base and height of the cylinder");
r = sc.nextDouble();
h = sc.nextInt();
res = vol(r,h);
System.out.println("Volume of the cylinder : " + res);
break;
}
case 4 :
{
double r, h;
System.out.println("Enter the base and height of the cone");
r = sc.nextDouble();
h = sc.nextDouble();
res = vol(r,h);
System.out.println("Volume of the cone : " + res);
break;
}
case 5 :
{
double l,b,h;
System.out.println("Enter the length, breadth and height of the cuboid");
l = sc.nextDouble();
b = sc.nextDouble();
h = sc.nextDouble();
res = vol(l,b,h);
System.out.println("Volume of the cuboid : " + res);
break;
}
default : System.out.println("Wrong choice.");
}
sc.close();
}
}
```

OUTPUT

```
PS C:\4th Sem\WEB Tech> c:; cd 'c:\4th Sem\WEB Tech'; & 'C:\Program Files\Java\jdk-11.0.8\bin\java.exe' '-cp' 'C:\Users\KIIT\AppData\Roaming\Code\User\workspaceStorage\ba64649877e9721f4e91b07c048c8a6b\redhat.java\jdt_ws\WEB Tech_c223e9a6\bin' 'Volume'
 Volume calculator
 1 - Sphere, 2 - Prism, 3 - Cylinder, 4 - Cone, 5- Cuboid
Enter your choice :
5
Enter the length, breadth and height of the cuboid
21
2
3
Volume of the cuboid : 126.0
PS C:\4th Sem\WEB Tech>
```

Q3.

```
import java.util.*;
public class Distance
{
double feet, inches;
Distance(double f, double i)
{
this.feet = f;
this.inches = i;
}
public void disp ()
{
System.out.println(this.feet + " and " + this.inches + ".");
}
public static Distance add (Distance d1, Distance d2)
{
Distance res = new Distance (0, 0);
res.feet = d1.feet + d2.feet;
res.inches = d1.inches + d2.inches;
if (res.inches >= 12)
{
res.inches = res.inches - 12;
res.feet = res.feet + 1;
}
return res;
}
public static Distance subtract (Distance d1, Distance d2)
{
Distance res = new Distance (0, 0);
res.feet = d1.feet - d2.feet;
res.inches = d1.inches - d2.inches;
if (res.inches < 0)
{
res.inches = res.inches + 12;
res.feet = res.feet - 1;
}
return res;
}
public static void main(String[] args)
{
Scanner sc = new Scanner(System.in);
double f1,i1,f2,i2;
System.out.println("Enter the first distance : ");
f1 = sc.nextDouble();
i1 = sc.nextDouble();
System.out.println("Enter the second distance : ");
f2 = sc.nextDouble();
i2 = sc.nextDouble();
Distance dis1 = new Distance (f1, i1);
Distance dis2 = new Distance (f2, i2);
Distance sum = add(dis1, dis2);
Distance difference = subtract(dis1, dis2);
System.out.println("Addition of two distances : " );
sum.disp();
System.out.println("Subtraction of two distances : " );
difference.disp();
sc.close();
}
}
```

OUTPUT

```
PS C:\4th Sem\WEB Tech> c:; cd 'c:\4th Sem\WEB Tech'; & 'C:\Program Files\Java\jdk-11.0.8\bin\java.exe' '-cp' 'C:\Users\KIIT\AppData\Roaming\Code\User\workspaceStorage\ba64649877e9721f4e91b
07c048c8a6b\redhat.java\jdt_ws\WEB Tech_c223e9a6\bin' 'Distance'
Enter the first distance :
20
130
Enter the second distance :
23
50
Addition of two distances :
44.0 and 168.0.
Subtraction of two distances :
-3.0 and 80.0.
PS C:\4th Sem\WEB Tech>
```

Q4.

```
import java.util.*;
public class Account
{
int Accno;
String AccHolderName;
char Account_type;
double balance;
Account(int a, String b, char c, double d)
{
this.Accno = a;
this.AccHolderName = b;
this.Account_type = c;
this.balance = d;
}
public void disp ()
{
System.out.println("Details");
System.out.println("Account number : " + Accno);
System.out.println("Account holder name : " + AccHolderName);
System.out.println("Account type : " + Account_type);
System.out.println("Account balance : " + balance);
}
public void deposit (double price)
{
System.out.println("Account in balance : (initial) " + balance);
double amount = balance + price;
System.out.println("Account deposited : " + price);
System.out.println("Account in balance : (final) " + amount);
}
public void withdraw (double price)
{
System.out.println("Account in balance : (initial) " + balance);
double amount = balance - price;
System.out.println("Account withdrawn : " + price);
System.out.println("Account in balance : (final) " + amount);
}
public void search (int num)
{
if (num == Accno)
{
System.out.println("Details");
System.out.println("Account number : " + Accno);
System.out.println("Account holder name : " + AccHolderName);
System.out.println("Account type : " + Account_type);
System.out.println("Account balance : " + balance);
}
else
{
System.out.println("Wrong account number.");
```

```
}
}
public static void main(String[] args)
{
Scanner sc = new Scanner(System.in);
System.out.println("Implementation of banking system.");
System.out.println("Enter the details.");
int id; String name; char type; double total;
System.out.println("Enter the account id: ");
id = sc.nextInt();
System.out.println("Enter the account holder name: ");
name = sc.next();
System.out.println("Enter the account type: (S for savings, Cforcurrent) ");
type = sc.next().charAt(0);
System.out.println("Enter the account balance: ");
total = sc.nextDouble();
Account obj = new Account(id, name, type, total);
System.out.println("1- Display details 2- Deposit amount 3- Withdraw amount 4- Search
account");
int ch;
System.out.println("Enter the choice: ");
ch = sc.nextInt();
switch(ch)
{
case 1:
{
obj.disp();
break;
}
case 2:
{
double a;
System.out.println("Enter the amount to be deposited");
a = sc.nextDouble();
obj.deposit(a);
break;
}
case 3:
{
double a;
System.out.println("Enter the amount to be withdrawn");
a = sc.nextDouble();
obj.withdraw(a);
break;
}
case 4:
{
int a;
System.out.println("Enter the account id to be searched");
a = sc.nextInt();
obj.search(a);
break;
}
default : System.out.println("Wrong choice.");
}
sc.close();
}
}
```

OUTPUT

```
Implementation of banking system.
Enter the details.
Enter the account id:
2029044
Enter the account holder name:
Aindrail Santra
Enter the account type: (S for savings, Cforcurrent)
Enter the account balance:
100000
1- Display details 2- Deposit amount 3- Withdraw amount 4- Search account
Enter the choice:
2
Enter the amount to be deposited
1000
Account in balance : (initial) 100000.0
Account deposited : 1000.0
Account in balance : (final) 101000.0
```