S.No: 10	Exp. Name: ***Write a Java program to implement Constructor overloading***	Date:2023-09-24

Aim:

Write a class `Box` which contains the data members **width**, **height** and **depth** all of type **double**.

Write the implementation for the below **3***overloaded constructors* in the class `Box` :

- **Box()** - default constructor which initializes all the members with **-1**
- **Box(length)** - parameterized constructor with one argument and initialize all the members with the value in **length**
  the members with the corresponding arguments
- **Box(width, height, depth)** - parameterized constructor with three arguments and initialize

Write a method `public double volume()` in the class `Box` to find out the **volume** of the given box.

Write the **main** method within the `Box` class and assume that it will receive either **zero** arguments, or **one** argument or **three** arguments.

For example, if the **main()** method is passed **zero** arguments then the program should print the output as:

```
Volume of Box() is : -1.0
```

Similarly, if the **main()** method is passed **one** argument : **2.34**, then the program should print the output as:

```
Volume of Box(2.34) is : 12.812903999999998
```

then the program should print the output as: Likewise, if the **main()** method is passed **three** arguments : **2.34, 3.45, 1.59**, then the program should print the output as:

```
Volume of Box(2.34, 3.45, 1.59) is : 12.836070000000001
```

Note: Please don't change the package name.

Source Code:

q11267/Box.java

```
package q11267;
import java.io.*;
import java.util.*;
class Box
{
   double w,h,d;
   Box()
     {
       d=-1;
       w=-1;
       h=-1;
     }
     Box(double length)
     {
      h=length;
      w=length;
      d=length;
     }
```

```
      Box(double width,double height,double depth)
      {
       w=width;
       h=height;
       d=depth;
     }
     public double volume()
    {
      return w*h*d;
    }
    public static void main(String a[])
    {
       if(a.length==0)
       {
          Box b=new Box();
          System.out.println("Volume of Box() is : "+b.volume());
       }
       else if(a.length==1)
       {
          double len = Double.parseDouble(a[0]);
          Box b=new Box(len);
          System.out.println("Volume of Box("+len+") is : "+b.volume());
       }
       else
       {
          double w= Double.parseDouble(a[0]);
          double h= Double.parseDouble(a[1]);
          double d= Double.parseDouble(a[2]);
          Box b=new Box(w,h,d);
          System.out.println("Volume of Box("+w+", "+h+", "+d+") is : "+b.volume());
       }
     }
}
```

Execution Results - All test cases have succeeded!

Test Case - 1
User Output
Volume of Box() is : -1.0

Test Case - 2
User Output
Volume of Box(3.0) is : 27.0

Test Case - 3
User Output
Volume of Box(2.3, 3.5, 6.5) is : 52.324999999999996