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;
class Box
{
   double width,height,depth;
   double volume()
   {
      return width*height*depth;
   }
   Box()
   {
      width=-1;
      height=-1;
      depth=-1;
      System.out.println("Volume of Box() is : "+volume()+"\n");
   }
   Box(String len)
   {
      width=height=depth=Double.parseDouble(len);
```

```
      System.out.println("Volume of Box("+width+") is : "+volume());
   }
   Box(String w,String h,String d)
   {
      width=Double.parseDouble(w);
      height=Double.parseDouble(h);
      depth=Double.parseDouble(d);
      System.out.println("Volume of Box("+width+", "+height+", "+depth+") is : "+volu
me());
   }
   public static void main(String a[])
   {
      int m=a.length;
      Box b;
      if(m==0)
      b=new Box();
      else if(m==1)
      b=new Box(a[0]);
      else if(m==3)
      b=new Box(a[0],a[1],a[2]);
   }
}
```

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

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