Lab-03
Classes, Objects & Strings

Objectives:
Understanding concepts of class and object in java. Implementing a class with members including data, methods and constructors also getting familiar with the String class of Java.

Theory:
Class
A class consists of
- Data(variables)
- Methods
- Constructors

Strings
The classes String, StringBuilder, and StringBuffer are used for processing strings. A string is a sequence of characters. Strings are frequently used in programming. In manylanguages, strings are treated as an array of characters, but in Java a string is treated as anobject.A String object is immutable; its contents cannot be changed.

Syntax:
String newString = new String(stringLiteral);
String newString = stringLiteral;

The String class provides the methods for comparing strings.

Methods	Description
equals(StringLiteral)	Returns true if this string is equal to string s1.
equalsIgnoreCase(StringLiteral)	Returns true if this string is equal to string s1 case insensitive.
compareTo(StringLiteral)	Returns an integer greater than 0, equal to 0, or less than 0 to indicate whether this string is greater than, equal to, or less than s1

Lab Task:
```
class Box {
double width;
double height;
double depth;
// compute and return volume
double volume() {
return width * height * depth;}
}
// __________ Demo Class __________
class BoxDemo {
public static void main(String args[]) {
Box mybox1 = new Box();
Box mybox2 = new Box();
```

```
double vol;
// assign values to mybox1's instance variables
mybox1.width = 10;
mybox1.height = 20;
mybox1.depth = 15;
/* assign different values to mybox2's
instance variables */
mybox2.width = 3;
mybox2.height = 6;
mybox2.depth = 9;
// get volume of first box
vol = mybox1.volume();
System.out.println("Volume is " + vol);
// get volume of second box
vol = mybox2.volume();
System.out.println("Volume is " + vol);}
}
```

Adding Constructor

```
class Box {
double width;
double height;
double depth;
// This is the constructor for Box.
Box() {
System.out.println("Constructing Box");
width = 10;
height = 10;
depth = 10;
}
// compute and return volume
double volume() {
return width * height * depth;}
}
```

Design a program to explore different methods of String class.

Lab Assignment:

1. **Create a class Calculator and implement all the basic operations for two objects**

Conclusion: