**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 many languages, 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:**

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