

#### Lab Exercise 1

### **IT2030 – Object Oriented Programming**

**Semester 1, 2023** 

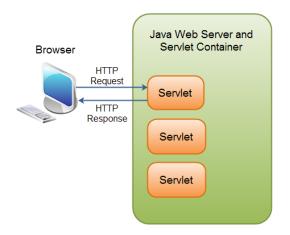
#### Objectives:

- Write and compile simple Java programs that makes use of the output statement, using simple variables, control structures such as if, switch, while, for statements.
- ☐ We will use Java 8, Oracle's latest version of Java language
- ☐ Categories of Java programs.
  - Standalone Applications
    - Java Console Applications
    - Java GUI Applications (AWT/Swing)
  - Web Based Applications
    - JSP / Servlets
    - Java Applets

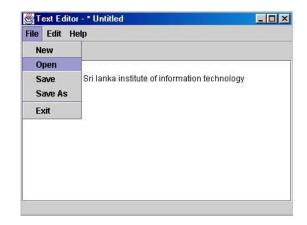
### **Console Applications**



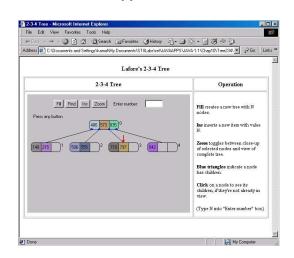
### Servlet



### **GUI Applications**



### **Applets**





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### **Example 1**

Write a program to print:

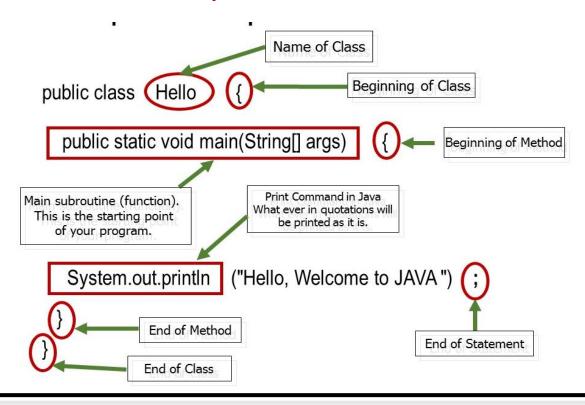
Hello, Welcome to JAVA.

This program demonstrates how to write a simple java program.

```
public class Hello {
    public static void main(String[] args) {
        System.out.println("Hello, Welcome to JAVA");
    }
}
```

- · Use Notepad to type this program
- Save the program in your Z: drive as "Hello.java"

### Important: Use the name for the .java file and for the class



Java like C and C++ is case sensitive i.e. if you type the first part of the as

Public static void

Your program will not work



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	<u>Compi</u>	ling a	<u>Java</u>	<u>Program</u>
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	Open a command prompt and type following commands. If JDK is properly installed you should get error messages.
	Z:\OOP> <b>java</b> Z:\OOP> <b>javac</b>
	If you do not get an error message set the "PATH" environment variable as follows. (Find the path to JDK installation in your machine & use it here)
	Z:\OOP>set path="c:\Program Files\Java\jdk1.8.0\bin"
	Type the following command. You should get the given output.  Z:\OOP> path
	Output >PATH="c:\Program Files\Java\jdk1.8.0\bin"
	When you type <b>JAVA</b> and <b>JAVAC</b> commands, now you should not get an error message.
	To Compile your Java Program use the JDK's javac tool.  Z:\OOP>javac Hello.java
	The compiler would create java byte code. These files have an extension of .class
	You must have saved the <i>Hello.java</i> program inside Z:\OOP folder
Runn	ing a Java Program
	To run your Java Programs you need to call the Java Interpreter.
	Z:\OOP> <b>java</b> Hello



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## **Exercise 1 (Time: 5 minutes)**

Write a program that produces the following output:

Hello World! It's been nice knowing you. Goodbye world! Try this program using

• System.out.println()

• \n

## **Exercise 2 (Time: 10 minutes)**

Write a program to get the following output.

= Student Information = 
= Name : ARDP Ranasignhe = 
= Reg No : DIS\08\M4\1234 = 
= Address : Malabe =

Try this program using \t

## **Exercise 3 (Time: 5 minutes)**

Write a program to validate a given age of a person using **if-else** statements.

If age is greater than 18 it should print "Adult" otherwise print "Child".

## Exercise 4 (Time: 5 minutes)

Write a program to display the day of the week when you provide the value.

### **Expected Output**

Value of the day: 4
Day of the week: Thursday

Good Bye!

You must use "switch - case" statement.

Display "Invalid Day" when some invalid value is provided.

Message "Good Bye" must appear at last.



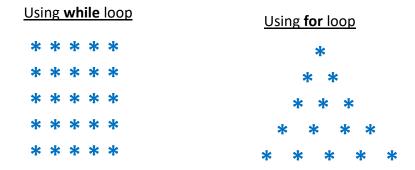
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## **Exercise 5 (Time: 10 minutes)**

Write a program that draws the following figures one above the other.



## **Exercise 6 (Time: 10 minutes)**

Now modify the previous program to draw stars next to each other.



## Exercise 7 (Time: 5 minutes)

Write a Java program to add two integers and display the sum and the average of two Integers. Declare two integer variables to store the numbers to be added.