Don Bosco Institute of Technology, Kurla(W)
Department of Electronics and Tele-Communication Engineering
ECL304 - Skill Lab: C++ and Java Programming
Sem III
2021-22

Lab Number:	**1**
Student Name:	**Sanskar Prafful Kumar**
Roll No :	**35**

Title:

To Add Two Numbers, Print Number Entered by User, Swap Two Numbers, Check Whether Number is Even or Odd

1.1 Implement using C++

1.2 Implement using Java

Learning Objective:

- Students will be able to write C++ and java program for simple arithmetic operations and take input from user.

Learning Outcome:

- Ability to execute a simple C++ and Java program with and without any inputs to the program.
- Understanding the constructs in C++ and Java.

Course Outcome:

ECL304.1	Understand object-oriented programming concepts and implement using C++ and Java

Theory:

Difference between procedural and object oriented language

Procedure Oriented Programming.

- In procedural programming, program is divided into small parts called functions.
- Procedural programming follows top down approach.
- There is no access specifier in procedural programming.
- Procedural programming does not have any proper way for hiding data so it is less secure.

Object Oriented Programming

- In object oriented programming, program is divided into small parts called objects.
- Object oriented programming follows bottom up approach.
- Object oriented programming have access specifiers like private, public, protected etc.
- Object oriented programming provides data hiding so it is more secure.

Application of object orientation

- **Client-server system:** Object-oriented client-server system provides the IT infrastructure creating object-oriented server internet(OCSI) applications.
- **Object-oriented database:** The databases try to maintain a direct correspondence between the real world and database object in order to let the object retain it identity and integrity.
- **Stimulation and modeling system**: It is difficult to model complex systems due to varying specifications of variables. Stimulating complex systems require modeling and understanding interaction explicitly. OOP provides an appropriate approach for simplifying these complex models.
- **Real-Time System design**: Real-time system inherits complexities and makes it difficult to build them. OOP techniques make it easier to handle those complexities.

  Hypertext and Hypermedia: Hypertext is similar to regular text as it can be stored, searched, and edited easily. Hypermedia on the other hand is a superset of hypertext. OOP also helps in laying the framework for hypertext and hypermedia.

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Brief introduction to JAVA

JAVA

JAVA was developed by James Gosling at Sun Microsystems Inc in the year 1991, later acquired by Oracle Corporation. It is a simple programming language. Java makes writing, compiling, and debugging programming easy. It helps to create reusable code and modular programs.

Java is a class-based, object-oriented programming language and is designed to have as few implementation dependencies as possible. A general-purpose programming language made for developers to write once run anywhere that is compiled Java code can run on all platforms that support Java. Java applications are compiled to byte code that can run on any Java Virtual Machine. The syntax of Java is similar to c/c++.

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Algorithm:	**STEP 1: Start** **STEP 2: Take input N1 and N2 from user** **STEP 3: Addition = N1+N2** **STEP 4: Declare temporary variable with name 'temp'** **STEP 5: Temp=N1, N1=N2, N2=Temp** **STEP 6: Check N1 divisible by 2, if yes number is even else odd** **STEP 7: Print addition of N1 and N2** **STEP 8: Print swapped numbers** **STEP 9: Stop**
Program:	**https://github.com/SanskarKumar777/Skill-Lab-with-OOPM/commit/8de0078b6958599f05466b47f078b2d157769ed8**
Input given:	**First No:5** **Second No:6**

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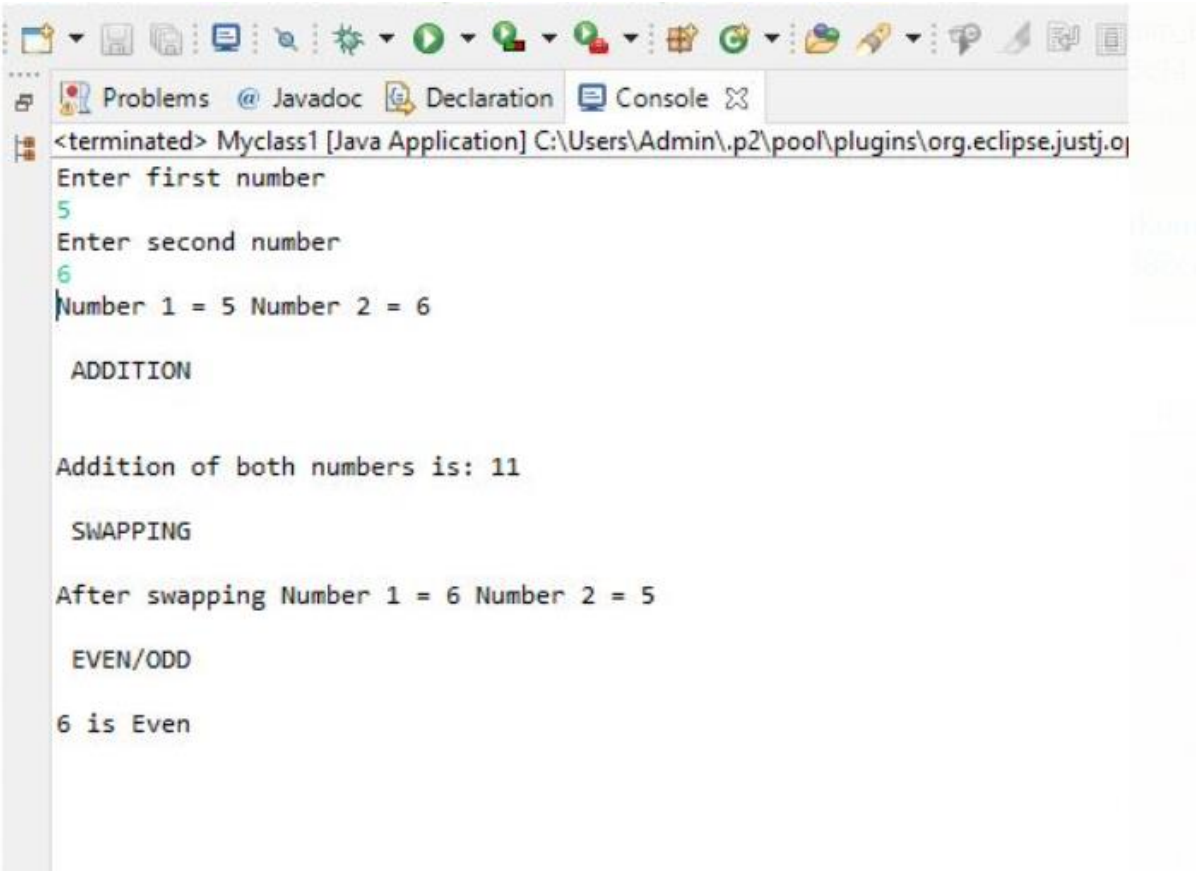
OUTPUT:


Problems
Javadoc
Declaration
Console
<terminated> Myclass1 [Java Application] C:\Users\Admin\.p2\pool\plugins\org.eclipse.justj.o
Enter first number
5
Enter second number
6
Number 1 = 5 Number 2 = 6
ADDITION
Addition of both numbers is: 11
SWAPPING
After swapping Number 1 = 6 Number 2 = 5
EVEN/ODD
6 is Even