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.

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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.

Brief introduction to C++

Object-oriented programming was developed since drawbacks were discovered in languages such as C, Simula, ALGOL, BPCL etc. Bjarne Stroustrup, a Danish computer scientist began working on C++ in 1979.At that time these languages already existed and had varied uses. His idea was to use C as a base and include features of Simula (An OOP language) that would promote features such as code reusability, general level abstraction etc. According to Stroustrup the '++' in C++ (post increment operator) symbolizes the evolutionary changes made to C.

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In object–oriented programming (OOP) the logical arrangement of the code is changed. Instead of storing functions into different files, functionality is tightly grouped with the type that it operates on. The OOP style groups all the operations together according to what they operate on. It no longer requires any special skill to keep them separate. The language itself makes it most convenient to proceed. The strength of OOP helps the most when writing large programs, in teams and while packaging the code into libraries for use by others.

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/91c73d9590fb7baec16c096613bf966a115fabb9
Input given:	First No:5 Second No:6

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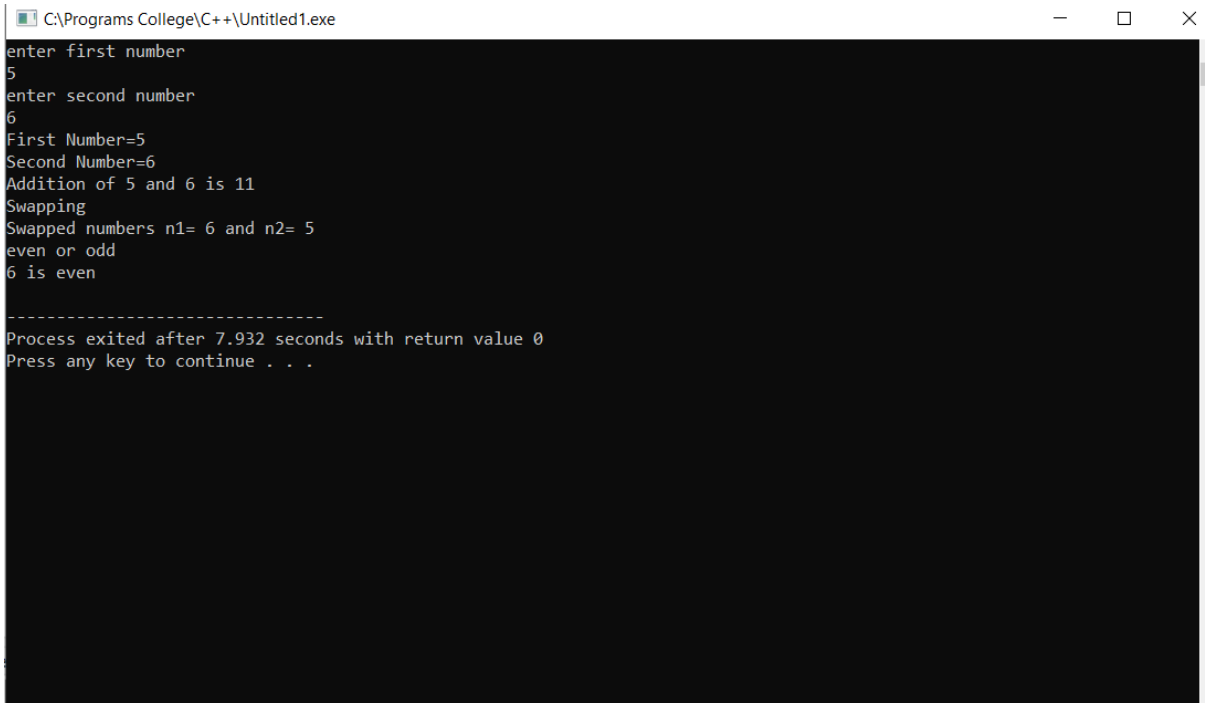
OUTPUT:


C:\Programs College\C++\Untitled1.exe
enter first number
5
enter second number
6
First Number=5
Second Number=6
Addition of 5 and 6 is 11
Swapping
Swapped numbers n1= 6 and n2= 5
even or odd
6 is even

Process exited after 7.932 seconds with return value 0
Press any key to continue . . .