

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

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| Lab Number: | 5 |
| Student Name: | Kanishka Aware |
| Roll No : | 13 |

Title:

To perform Operator Overloading using C++ for

- adding 2 complex numbers
- adding matrices

Learning Objective:

- Students will be able to perform user-defined overloading of built-in operators.

Learning Outcome:

- Understanding the overloading concept on built-in operators.

Course Outcome:

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|-----------------|--|
| ECL304.2 | Comprehend building blocks of OOPs language, inheritance, package and interfaces |
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Theory:

Explain about operator overloading with respect to:

Constructor

As there is a concept of function overloading, similarly constructor overloading is applied.

When we overload a constructor more than a purpose it is called constructor overloading. The

Declaration is the same as the class name but as they are constructors, there is no return type.

The criteria to overload a constructor is to differ the number of arguments or the type of Arguments

Methods

Method overloading is the process of overloading the method that has the same name but

different parameters. C++ provides this method of overloading features. Method overloading

allows users to use the same name to another method, but the parameters passed to the methods should be different. The return type of methods can be the same or different.

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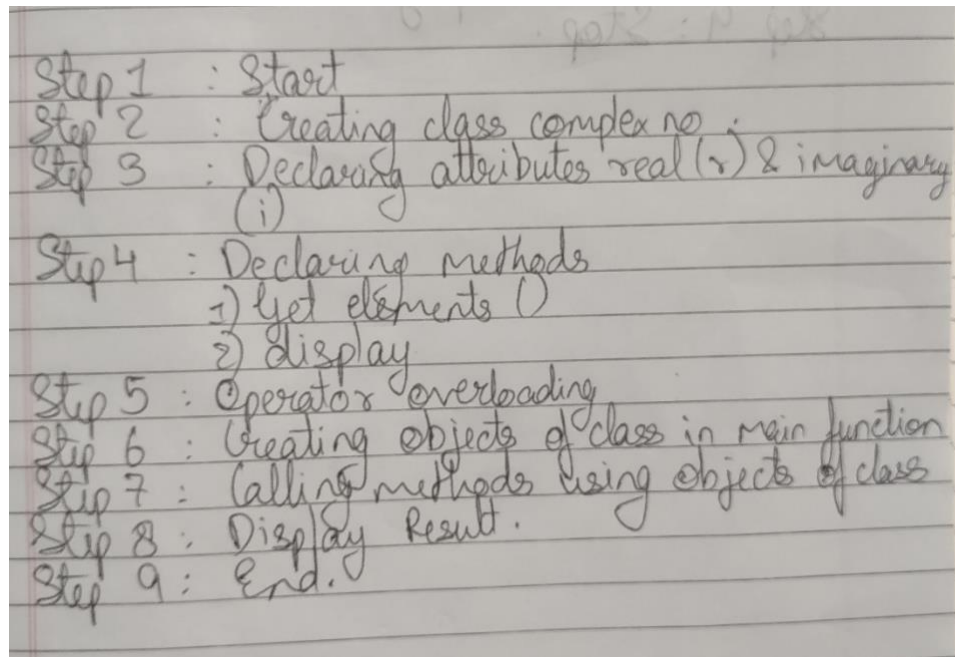
Operators

Addition special features to the functionality and behaviour of already existing operators like arithmetic and other operations. The mechanism of giving special meaning to an operator is known as operator overloading. For example, we can overload an operator '+' in a class like string to concatenate two strings by just using +.

Algorithm

:

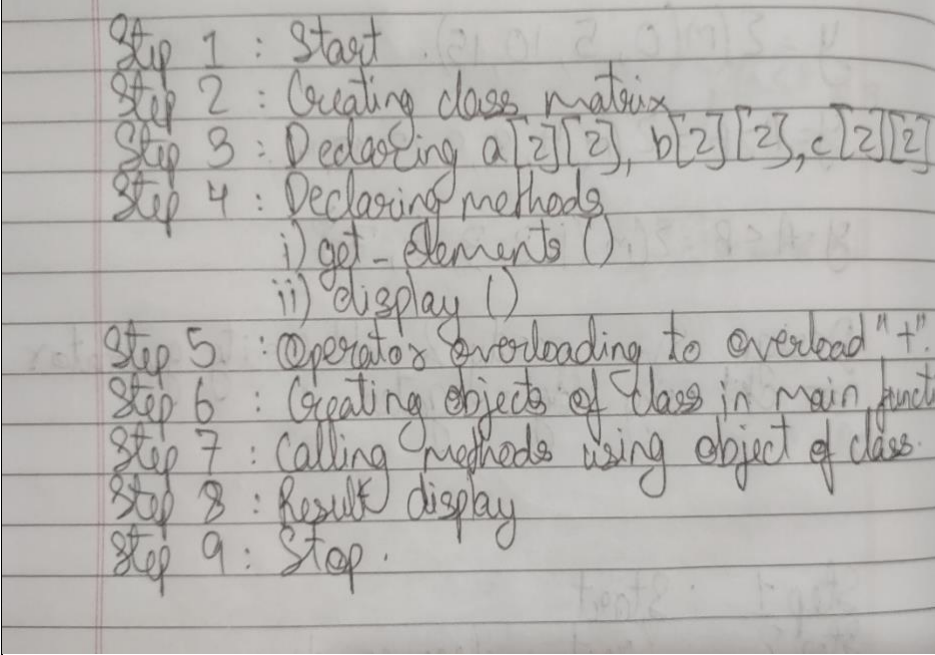
1.



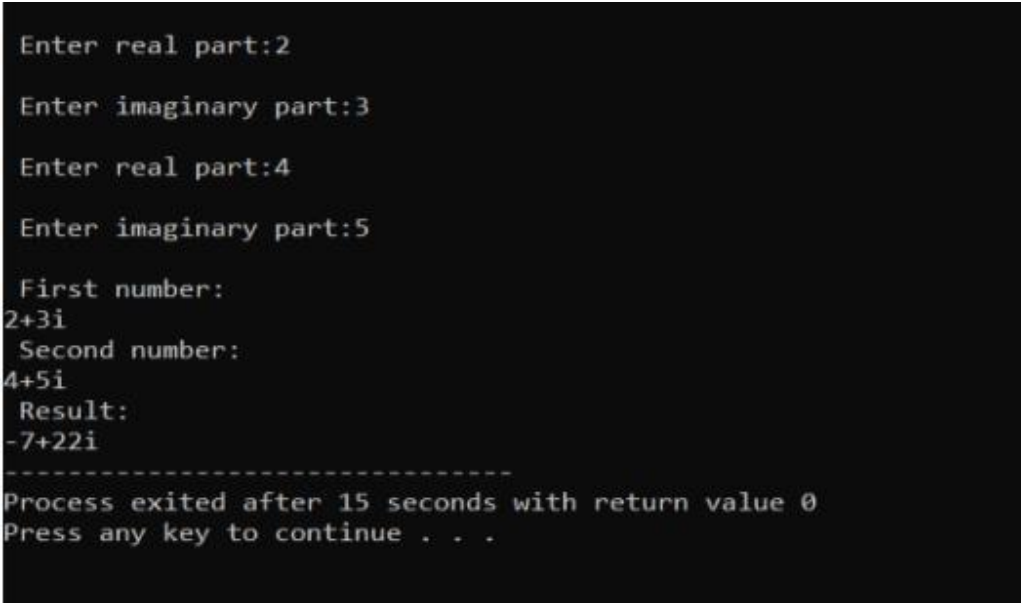
Step 1 : Start
Step 2 : Creating class complex no.
Step 3 : Declaring attributes real (r) & imaginary (i)
Step 4 : Declaring methods
1) get elements ()
2) Display
Step 5 : Operator overloading
Step 6 : Creating objects of class in main function
Step 7 : Calling methods using objects of class
Step 8 : Display Result.
Step 9 : End.

2.

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| |  | |
| Program: | https://github.com/kanishkadbit/skill-labs-with-OOPM/blob/main/13_Lab5.cpp | |
| Input given: | <p>1.</p> <p>Real part:2</p> <p>Imaginary part:3</p> <p>Real part:4</p> <p>Imaginary part:5</p> <p>2.</p> <p>ELEMENTS OF 1 MATRIX:</p> <p>10 20</p> | |

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| | |
|---------------------|---|
| | <p>30 40</p> <p>ELEMENTS OF 2 MATRIX:</p> <p>11 22</p> <p>33 44</p> |
| Output Screenshot : | <p>1.</p>  <p>2.</p> |

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```
Enter the elements
10
20
30
40
Enter the elements
11
22
33
44

Matrix 1:
10 20
30 40

Matrix 2:
11 22
33 44

Result :
21 42
63 84

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Process exited after 14.06 seconds with return value 0
Press any key to continue . . .
```