

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:	11
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Roll No :	01

Title:

1. Write a program in java if a number is less than 0 and greater than 10 it generates the user-defined exception "out of range". Else it displays the square of the number.
2. Write a program in java to enter the number. If the first and second number is not entered it will generate the exception. Also, divide the first number with the second number and generate the arithmetic exception.

Learning Objective:

Students will be able to implement user-defined exceptions

Learning Outcome:

Understanding the exception handling concept and making the programming interface error-free.

Course Outcome:

ECL304.3	Articulate exception handling methods.
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Theory:

- **What is exception handling and how is it achieved in JAVA?**

The Exception Handling in Java is one of the powerful mechanism to handle the runtime errors so that the normal flow of the application can be maintained. Java exception handling is managed via five keywords: try, catch, throw, throws, and finally. Program statements that you think can raise exceptions are contained within a try block. If an exception occurs within the try block, it is thrown. Your code can catch this exception (using catch block) and handle it in some rational manner. System-generated exceptions are automatically thrown by the Java run-time system. To manually throw an exception, use the keyword throw. Any exception that is thrown out of a method must be specified as such by a throws clause. Any code that absolutely must be executed after a try block completes is put in a finally block.

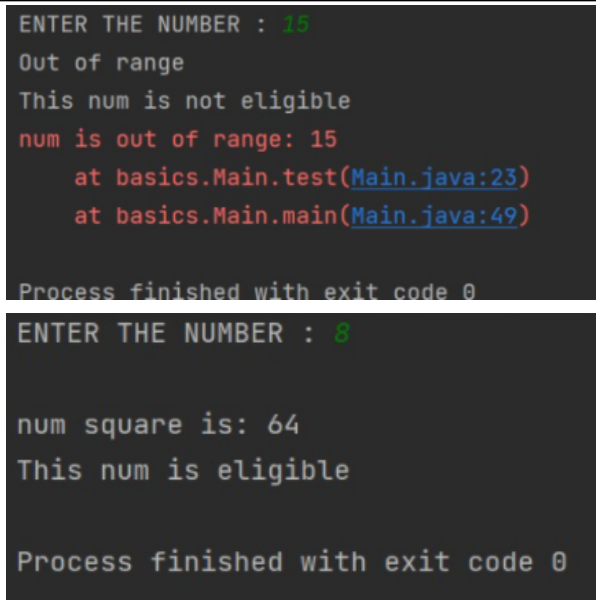
- **Explain user defined exceptions in java?**

Java user-defined exception is a custom exception created and throws that exception using a keyword 'throw'. It is done by extending a class 'Exception'. An exception is a problem that arises during the execution of the program. In Object-Oriented Programming language, Java provides a powerful mechanism to handle such

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exceptions. Java allows to create own exception class, which provides own exception class implementation. Such exceptions are called user-defined exceptions or custom exceptions.

Algorithm :	<ol style="list-style-type: none">1. Start2. Create Outofrange class.3. Create the main class to take input of data and perform the operation.4. Write the exception cases i.e. the try catch function5. End
Program:	https://github.com/Abhishek-0809/Skill-Lab-with-OOPM/blob/c406de08ba0c9c8d73918626deba3ad588831c63/01_Lab11.1.java
Input given:	<ol style="list-style-type: none">1) 152) 8
Output Screenshot:	 <pre>ENTER THE NUMBER : 15 Out of range This num is not eligible num is out of range: 15 at basics.Main.test(Main.java:23) at basics.Main.main(Main.java:49) Process finished with exit code 0 ENTER THE NUMBER : 8 num square is: 64 This num is eligible Process finished with exit code 0</pre>

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Algorithm :	<ol style="list-style-type: none">1. Start2. Create Isnum class.3. Create the main class to take input of data and perform the operation.4. Write the exception cases i.e. the try catch function5. End
Program:	https://github.com/Abhishek-0809/Skill-Lab-with-OOPM/blob/c406de08ba0c9c8d73918626deba3ad588831c63/01_Lab11.2.java
Input given:	1) 9 and 3
Output Screenshot:	