Lab Number:	11
Student Name:	**Sanskar Kumar**
Roll No :	**35**

Title:

1.   Write a program injava 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.

Theory:

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

Java exception handling is managed via five keywords: try, catch, throw, throws, and finally. Briefly, here is how they work. 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.

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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 exceptions. Java allows to create own exception class, which provides own exception class implementation. Such exceptions are called user-defined exceptions or custom exceptions. We do not have any particular syntax for Java user-defined exception.

Algorithm :	1. Start
	2. 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 function
	5. End
Program:	**https://github.com/SanskarKumar777/Skill-Lab-with-OOPM/commit/8c05cc5712ea103e60ef428119777a3c0f2bb8d3**
Input given:	Enter the Number : 5 Enter the Number : 17

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Output Screenshot:

```
<terminated> Main [Java Application] C:\Users\sansk\.p2\pool\
ENTER THE NUMBER : 5

num square is: 25
This num is eligible
```

```
<terminated> Main [Java Application] C:\Users\sansk\.p2
ENTER THE NUMBER : 17
Out of range
num is out of range: 17
This num is not eligible
```

ALGORITHM:	Start Create Isnum class. Create the main class to take input of data and perform the operation. Write the exception cases i.e. the try catch function End
PROGRAM:	**https://github.com/SanskarKumar777/Skill-Lab-with-OOPM/commit/8c05cc5712ea103e60ef428119777a3c0f2bb8d3**
INPUT :	Enter the Numbers – 100 10
OUTPUT SCREENSHOT:	```<terminated> Main [Java Application] C:\Users\sansk\.p2\p ENTER THE NUMBERS : 100 10 numbers are entered num1/num2 is: 10```

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