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 :	**11**

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.

Theory:

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

Solution:

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.

In Java, an exception is an event that disrupts the normal flow of the program. It is an object which is thrown at runtime.

Exception Handling is a mechanism to handle runtime errors such as ClassNotFoundException, IOException, SQLException, RemoteException, etc.

The core advantage of exception handling is to maintain the normal flow of the application. An exception normally disrupts the normal flow of the application; that is why we need to handle exceptions.

- Explain user defined exceptions in java?

Solution:

User Defined Exception or custom exception is creating your own exception class and throws that exception using 'throw' keyword. This can be done by extending the class Exception.

There is no need to override any of the above methods available in the Exception class, in your derived class. But practically, you will require some amount of customizing as per your programming needs.

Example: To created a User-Defined Exception Class

Step 1) Copy the following code into the editor

```
class JavaException{
   public static void main(String args[]){
  try{
       throw new MyException(2);
       // throw is used to create a new exception and throw it.
  }
 catch(MyException e){
    System.out.println(e) ;
 }
}
}
class MyException extends Exception{
   int a;
   MyException(int b) {
     a=b;
   }
   public String toString(){
     return ("Exception Number =  "+a) ;
  }
}
```

Step 2) Save , Compile & Run the code. Excepted output –

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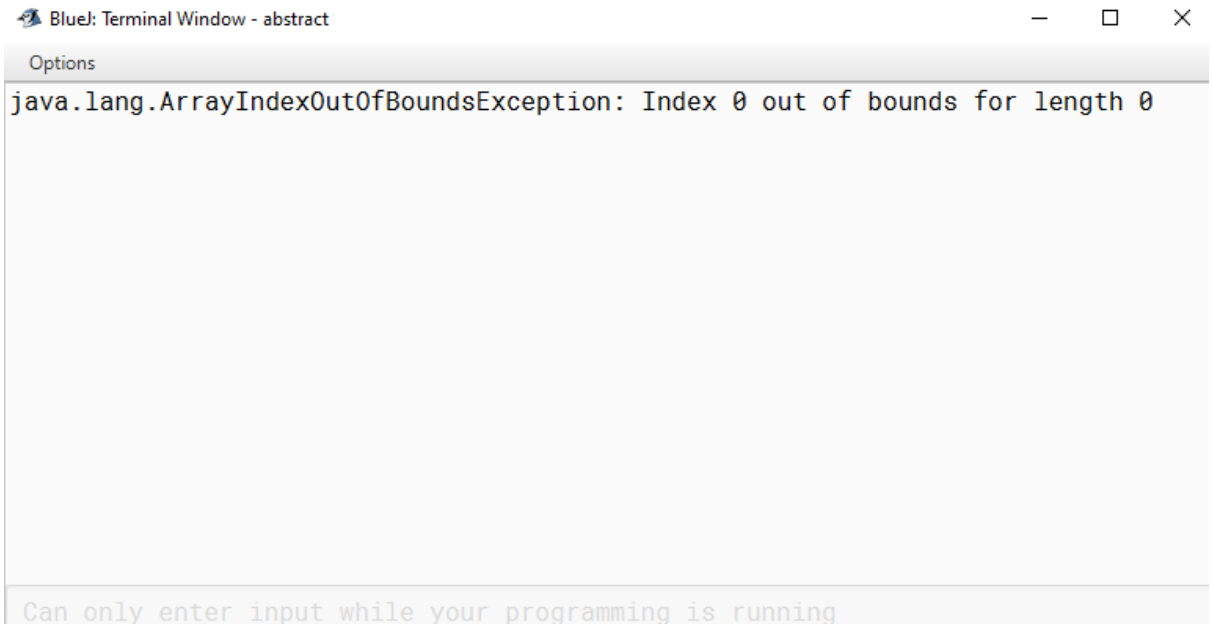
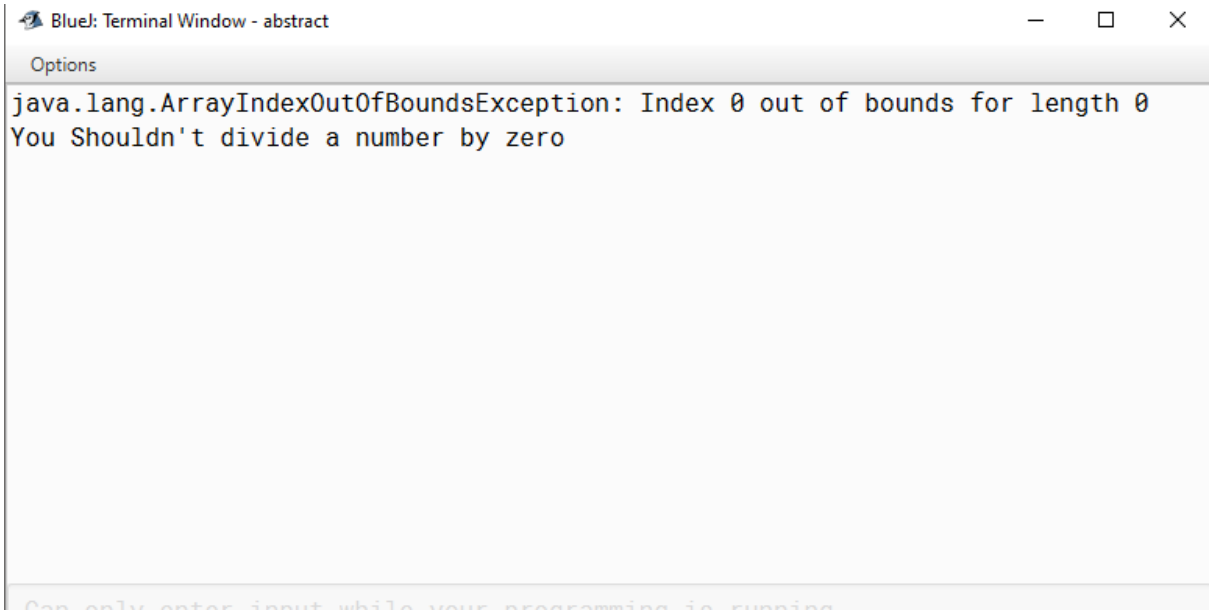
Q 1)

Output:



Q2)

Output:



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