## East West University

**Department of Computer Science and Engineering**

## A/2, Jahurul Islam Avenue, Jahurul Islam City, Aftabnagar, Dhaka

**Lab Manual:** 08

**Lab Topic:** Exception Handling

**Course Code:** CSE110 (Object Oriented Programming)

**Course Instructor:** Tanni Mittra, Senior Lecturer, CSE

**Lab Objective**

1. **Learn a** mechanismto handle Exception in Java program

**Lab Activities:**

1. [**Built-in Exceptions**](https://www.geeksforgeeks.org/built-exceptions-java-examples/) **Handle**

class ArithmeticException\_Demo

{

    public static void main(String args[])

    {

        try {

            int a = 30, b = 0;

            int c = a/b;

            System.out.println ("Result = " + c);

        }

        catch(ArithmeticException e) {

System.out.println (e);

            System.out.println ("Can't divide a number by 0");

        }

    }

}

Class Testthrows1 {

Void m () throws IOException

{

throw new IOException("device error");//checked exception

}

}

**Lab problem 1:**

* Write a program that creates a *Calculator* class. The class contains two variables of integer type. Design a constructor that accepts two values as parameter and set those values.
* Design four methods named *Add ()*, *Subtract ()*, *multiply ()*, *Division ( )* for performing addition, subtraction, multiplication and division of two numbers.
* For addition and subtraction, two numbers should be positive. If any negative number is entered then throw an exception in respective methods. So design an exception handler (***ArithmeticException***) in *Add ()* and *Subtract ()* methods respectivelyto check whether any number is negative or not.
* For division and multiplication two numbers should not be zero. If zero is entered for any number then throw an exception in respective methods. So design an exception handler (***ArithmeticException***) in *multiply ()* and *Division ()* methods respectivelyto check whether any number is zero or not.
* Write a main class and declare four objects of *Calculator* class. Perform addition (obj1), subtraction (obj2), multiply (obj3) and division (obj4) operations for these objects. If any non integer values are provided as input;then you should throw an exception (***NumberFormatException***) and display a message that informs the user ofthe wrong input before exiting.

1. [**User Defined Exceptions**](https://www.geeksforgeeks.org/built-exceptions-java-examples/) **Handle**

**Lab problem 2:**

* Create an exception class named *MyException* that extend a base class named *Exception*
* Design a constructor in your class that accepts a string value set it to the super class constructor to display the exception message.
* Create a main class named *product*. Write a method inside the class called *productCheck(int weight)* that accepts weight of the product. Inside the method, if the weight is less than 100 then throw an exception “Product is invalid” otherwise print the weight of the product.
* Inside the main method declare single object of the product class and call the *productCheck()* method to display the weight of the product.