**Assignment No. 4**

**GRN: 12310120**

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**Batch: 2**

**Problem Statement**

Write a Java program for following exception, develop a suitable scenario in which the following exceptions occur:

* 1. divide by zero
  2. Array index out of bounds exception
  3. Null pointer Exception

**Sample Input and Output**

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| **Sample Input/Parameter** | **Expected Output** |
| Try to divide a number by zero | You shouldn’t divide a number by zero. |
| Try to access the array index which does not exist. | OOPs!!!Array Index 7 out of bounds for length 6. |
| Try to find the length of String in method (pass parameter string as null) | Null Pointer Exception arises!! |

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| **Add your code here**  **import java.util.Scanner;**  **public class ExceptionDemo {**  **public static void main(String[] args) {**  **Scanner scanner = new Scanner(System.in);**  **// Scenario a: Divide by zero exception**  **try {**  **System.out.print("Enter a numerator: ");**  **int numerator = scanner.nextInt();**  **System.out.print("Enter a denominator: ");**  **int denominator = scanner.nextInt();**  **int result = numerator / denominator;**  **} catch (ArithmeticException e) {**  **System.out.println("You shouldn’t divide a number by zero.\n");**  **}**  **// Scenario b: Array index out of bounds exception**  **try {**  **System.out.print("Enter an array size: ");**  **int size = scanner.nextInt();**  **int[] arr = new int[size];**  **System.out.print("Enter an index to access: ");**  **int index = scanner.nextInt();**  **arr[index] = 10;**  **} catch (ArrayIndexOutOfBoundsException e) {**  **System.out.println("OOPs!!!Array Index out of bounds.\n");**  **}**  **// Scenario c: Null pointer exception**  **try {**  **String str = null;**  **System.out.println("Tyring to print length of null string");**  **System.out.println(str.length());**  **} catch (NullPointerException e) {**  **System.out.println("Null Pointer Exception arises!!");**  **}**  **}**  **}**  **Expected Output:** |