

Assignment No. 4

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Batch: B-3

Problem Statement

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

- a. divide by zero
- b. Array index out of bounds exception
- c. Null pointer Exception

Develop a menu driven program for handle the above listed exception.

Sample Input and Output

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!!

Program:

```
import java.util.Scanner;

public class Assignment4 {

    public static void main(String[] args) {
        int choice;

        Scanner sc = new Scanner(System.in);

        do {

            System.out.println("\n1. Arithmetic Exception\n2. ArrayIndexOutOfBoundsException\n3. NullPointerException\n0. Exit\nEnter your choice");
            choice = sc.nextInt();
```

```

        switch (choice) {
            case 1:
                int a, b;
                System.out.println("Enter the first number: ");
                a = sc.nextInt();
                System.out.println("Enter the second number: ");
                b = sc.nextInt();
                try {
                    System.out.println("The answer is : " + a / b);
                } catch (ArithmeticException e) {
                    System.out.println("You shouldn't divide the number by
zero");
                }
                break;
            case 2:
                int[] arr = { 10, 20, 30 };
                int ind;
                System.out.println("Enter the index for which the element
is to be accessed");
                ind = sc.nextInt();
                try {
                    System.out.println("The element in the array at index
" + ind + " is " + arr[ind]);
                } catch (ArrayIndexOutOfBoundsException e) {
                    System.out.println("OOPs!!!Array Index " + ind + " out
of bounds for length " + arr.length);
                }
                break;
            case 3:
                String str = null;
                try {
                    System.out.println(str.length());
                } catch (NullPointerException e) {
                    System.out.println("Null Pointer Exception Arises as t
he string is null");
                }
                break;
            case 0:
                break;
        }
    } while (choice != 0);
}
}

```

Actual Output

```
PS B:\VIT\2. Object Oriented Programming (Java)\LAB\Assignment No.4> & 'C:\Patil\AppData\Roaming\Code\User\workspaceStorage\f76351b42678f9da706cb6c8'
```

```
1. Arithmetic Exception
2. ArrayIndexOutOfBoundsException
3. NullPointerException
0. Exit
Enter your choice
1
Enter the first number:
24
Enter the second number:
0
You shouldn't divide the number by zero
```

```
1. Arithmetic Exception
2. ArrayIndexOutOfBoundsException Exception
3. NullPointerException
0. Exit
Enter your choice
2
Enter the index for which the element is to be accessed
5
OOps!!!Array Index 5 out of bounds for length 3
```

```
1. Arithmetic Exception
2. ArrayIndexOutOfBoundsException
3. NullPointerException
0. Exit
Enter your choice
3
Null Pointer Exception Arises as the string is null
```

```
1. Arithmetic Exception
2. ArrayIndexOutOfBoundsException Exception
3. NullPointerException
0. Exit
Enter your choice
0
```

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