

Assignment-8(Part_1)

CODE:

```
/*
Name: Aniket Singh
Prn: 21070126013
Problem Statetment:Part 1:
Write a Java Program to find the factorial of 'n' integers (as command line arguments CLA). Write you
r own exception "FactorialException" to validate integer values to be in certain range. Sample call:
java ExceptionDemo 8 - 6 14 abcd 5
1) Static main method invokes another method "factorial()"
2) CLA which are strings but interpreted as integer values.
3) The user-defined exception class
*/
package Com.College;
// custom exception class that extends the Exception class
import java.util.*;
class MyExcep extends Exception {
    MyExcep(String message) {
        super(message);
    }
}
// main class
public class Assignment_8_Part_1 {
    public static void main(String[] args) {
        // iterate through the command line arguments provided
        for (String arg : args) {
            try {
                // convert the argument to an integer
                int n = Integer.parseInt(arg);
                // if the argument is out of range, throw a custom exception
                if (n < 1 || n > 10) {
                    throw new MyExcep("Value out of range (1 to 10) for " + n);
                }
                // print the factorial of the argument if it is within the range
                System.out.println("Factorial of " + n + " is " + factorial(n));
            } catch (NumberFormatException e) {
                // handle the case where the argument cannot be parsed as an integer
                System.out.println("Invalid input: " + e.getMessage());
            } catch (MyExcep e) {
                // handle the custom exception thrown when the argument is out of range
                System.out.println(e.getMessage());
            }
        }
    }

    // helper function to compute the factorial of a number
    private static int factorial(int n) {
        int result = 1;
        for (int i = 1; i <= n; i++) {
            result *= i;
        }
        return result;
    }
}
```

OUTPUT:

```
PS C:\Users\ANIKET\Desktop\CODE\Java> cd "c:\Users\ANIKET\Desktop\CODE\Java\" ; if ($?) { javac Assignment_8_part_1.java } ; if ($?) { java Assignment_8_part_1 }
PS C:\Users\ANIKET\Desktop\CODE\Java> 8 -6 abc 5 2
```

```
Factorial of 8 is 40320
Value out of range (1 to 10) for -6
Invalid input: For input string: "abc"
Factorial of 5 is 120
Value out of range (1 to 10) for 20
```

Assignment-8(Part_2)

CODE:

```
/*
Name: Aniket Singh
Prn: 21070126013
Problem Statement: Part 2:
Define an exception class called "NOMATHEXCP" that is thrown when the string from the keyboard is not equal to "India". Write a Demo program using try-catch block that shows the use of this user-defined exception. Class NOMATHEXCP should have a parameterized constructor and the exception message generated should show the line number and the erroneous String that was inputted by the user.
*/

// package declaration
package Com.College;
import java.util.Scanner;
// main class
public class Assignment_8_Part_2 {
    public static void main(String[] args) {
        // create a Scanner object to read user input from the console
        Scanner scanner = new Scanner(System.in);
        try {
            // prompt the user to enter a string
            System.out.print("Enter a string: ");
            String input = scanner.nextLine();

            // check if the input string is equal to "India", throw a custom exception otherwise
            if (!input.equals("India")) {
                throw new NOMATHEXCP(8, input); // assuming this line number is where the user input
is taken
            }

            // print a message if the input string matches "India"
            System.out.println("Input string matches \"India\"");
        } catch (NOMATHEXCP e) {
            // handle the custom exception thrown when the input string does not match "India"
            System.out.println(e.getMessage());
        }
    }
}
```

```
}  
// custom exception class that extends the Exception class  
class NOMATCHEXCP extends Exception {  
    NOMATCHEXCP(int line, String input) {  
        super("Error on line " + line + ": Input string \"" + input + "\" does not match \"India\"");  
    }  
}
```


OUTPUT:

```
Enter a string: India  
Input string matches "India"
```

```
Enter a string: Aniket  
Error on line 8: Input string "Aniket" does not match "India"
```

java_Assignments/Assignment_8 at main · AniketSingh1m/java_Assignments

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 https://github.com/AniketSingh1m/java_Assignments/tree/main/Assignment_8

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