Exception handling

Workshop 07

In this workshop, you'll learn:

- Exception Handling

- Multiple Handlers

- Code Finalization and Cleaning Up

- Custom Exception Classes

Create 2 exception classes named **IllegalTriangleException** and **IllegalRightTriangleException** as customs exception classes.

Write a class named **RightTriangle** with three sides a, b, c is integer numbers.

In the constructor of class RightTriangle:

- If 3 integers is not 3 side of a triangle (The sum of any two sides is greater than the other side) then throw **IllegalTriangleException.**

- If 3 integers is not 3 side of a right triangle (follow **Pythagorean Theorem**) then throw **IllegalRightTriangleException**.

```
class RightTriangle{
       int a, b, c;


       //Constructor
       public RightTriangle(int a, int b, int c)
               throws IllegalTriangleException, IllegalRightTriangleException{
                       //implement it
       }
}
```

Write a Java program to test the RightTriangle class. Three sides are accepted from keyboard and **check input validation**

Sample output:

Enter side a: 6a

Wrong input! Try again!

Enter side a: 1

Enter side b: 2

Enter side c: 8

This is not a triangle!

Continue? (Y/N): Y

Enter side a: 6

Enter side b: 7

Enter side c: 8

This is not a right triangle!

Continue? (Y/N): Y

Enter side a: 3

Enter side b: 4

Enter side c: 5

This is a right triangle!

Continue? (Y/N): N

Main class should be like following:

```java
public class Main {
   public static void main(String[] args) {
int a, b, c;
      Scanner nhap = new Scanner(System.in);
      while (true) {
         //enter integer a here with input validation
         //enter integer b here with input validation
```

```java
        //enter integer c here with input validation


        try {
            //call constructor of RightTriangle class
RightTriangle rt = new RightTriangle(a, b, c);
System.out.println("This is a right triangle!");
        } catch (IllegalTriangleException e1) {
System.out.println("This is not a triangle!");
        } catch (IllegalRightTriangleException e2) {
System.out.println("This is not a right triangle");
        }
        //continue?
System.out.print("Continue?(Y/N):");
        //Enter a character
        char chon = nhap.next().charAt(0);
        if(chon != 'Y')
            break;
    }
  }
}
```