**Exception handling  
Workshop 09**

**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**.

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| 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**

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| 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:**

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| public class Ex1\_Ws2 {  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  //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;  }  }  } |