Introduction to Computers and Programming

Homework 2

2022/09/20

1. Deadline

You have one week to complete the homework. Hand in your homework via E3 before 2022/09/26 23:55. Note that late submissions will not be accepted. In addition, make sure that your code can be executed onVisual Studio Community 2019.

2. Problems

2 .1 Triangle classification

As we all know, there are some basic triangle properties, such as:

- The sum of the length of the two sides of a triangle is greater than the length of the third side.
- If c denotes the length of the hypotenuse and a and b denote the two lengths of the legs of a right triangle, then the Pythagorean theorem can be expressed as the Pythagorean equation:
  $a^2 + b^2 = c^2$

In this assignment, you need to input three positive integers representing three sides. And based on the properties mentioned above, do the following steps:

- Check if the three sides can form a triangle.

If the inputs can form a triangle:

- Check whether the triangle is right, obtuse or acute.
- Check whether the triangle is equilateral, isosceles or scalene.

Input

The line contains three **positive integers**, representing three sides.

Output

Print out lines to tell **if the inputs can form a triangle**, and also check **which kinds of triangle they can form**. Note that some of the categories may be overlapping.

Example 1:

Input
10 10 10

Output
10 10 10 can form a triangle.
10 10 10 can form an acute triangle.
10 10 10 can form an equilateral triangle.
10 10 10 can form an isosceles triangle.

Example 2:

Input
1 2 3

Output
1 2 3 cannot form a triangle.