CSCI 400

LotW Common Assignment - Pythagorean Triples

Some right triangles have sides that are all integers. A set of three integers for the sides of a right triangle is called a Pythagorean Triple. These three sides still must satisfy the relationship that the sum of the squares of the two sides is equal to the square of the hypotenuse (see Figure 1).

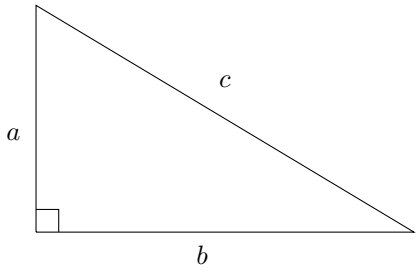

Figure 1: A right triangle with sides a, b and hypotenuse. For all right triangles, $a^2 + b^2 = c^2$. If a, b, and c are all integers, they are said to be a *Pythagorean Triple*.

Assignment

Write a program that reads an integer n from the keyboard and then finds all Pythagorean Triples for sides a, b, c, where $a < b < c <= n$.

When $n = 30$, the program would produce the following output.

```
3, 4, 5
5, 12, 13
6, 8, 10
7, 24, 25
8, 15, 17
9, 12, 15
10, 24, 26
12, 16, 20
15, 20, 25
18, 24, 30
20, 21, 29
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