

Lab 2 preparation

Assignment 1: Reading

Assignment 2: Triangle Test

Specification

Triangle. The main function takes 3 positive whole-number lengths to be typed in as command line arguments. The program responds with a description of the triangle, as follows:

- **equilateral** - if all three sides have equal length
- **isosceles** - if two sides have equal length
- **right-angled** - if one angle is a right angle
- **scalene** - all sides different lengths, no right angles
- **impossible** - if the given side lengths do not form a triangle

Area and perimeter of the triangle are calculated, too.

Output

One set of equivalence classes covering valid and invalid cases

Equivalence Class Partitioning:

- Split input/output into classes which the software handles equivalently.
- Select test cases to represent each class.

Side length set

Input : 3 positive whole-number lengths

Output: description of the triangle

- **equilateral** - if all three sides have equal length
- **isosceles** - if two sides have equal length
- **right-angled** - if one angle is a right angle
- **scalene** - all sides different lengths, no right angles
- **impossible** - if the given side lengths do not form a triangle

Classes

Class	Type	Description
C1	Input	3 sides of equal length
C2	Input	2 sides of equal length

Class	Type	Description
C3	Input	All sides of different lengths
C4	Input	Lengths does not form a triangle
C5	Input	Lengths forms a right angle
C6	Input	Triangle with negative sides
C7	Input	String as side length
C8	Output	-1
C9	Output	Area of the triangle [number]
C10	Output	Perimeter of the triangle [number]
C11	Output	Triangle
C12	Output	3 sides' length [string]
C13	Output	true
C14	Output	false

Test Cases EP

EP Test Case Equilateral	Input	Output
TC1	C1	true
TC2	C2	false
TC3	C6	??
EP Test Case Isosceles	Input	Output
TC1	C2	true
TC2	C3	false
TC3	C6	??
EP Test Case Scalene	Input	Output
TC1	C3	true
TC2	C1	false
TC3	C6	??
EP Test Case Impossible	Input	Output
TC1	C4	true
TC2	C1	false
TC3	C6	??

EP Test Case Right-Angled	Input	Output
TC1	C5	true
TC2	C1	false
TC3	C6	??

EP Test Case Area	Input	Output
TC1	C5	[0-inf]
TC2	C4	-1
TC3	C6	??
TC4	C7	??

EP Test Case Parameter	Input	Output
TC1	C5	[0-inf]
TC2	C4	-1
TC3	C6	??
TC4	C7	??

Test Cases BVA

In this case the BVA equivalent would be pretty much the same but with values specified closer to the different borders.