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Programming Languages In Practice Part II C++

Practice 3

Marta Kustra

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Task 1
Comparing two numbers

Write a program to verify that enetered number x is less, greater or equal to enetered number y.

```
Enter two integer numbers x and y: 4 7
4 is less than 7
```

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Task 2
Even and odd numbers

Write a program to verify that integer number enetered by user is even or odd. Use modulo operation to do that.

```
Enter an integer number: 11
11 is odd number
```

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Task 3
Unit converter

Write a program to convert units of length (mm, cm, m). Use switch function to ask the user what lenght unit is being used.

1m = 100 cm = 1000mm

```
***** Lenght unit converter *****
Enter length: 500
What unit?
 0-mm
 1-cm
 2-m
0
500 mm = 50 cm = 0.5 m
```
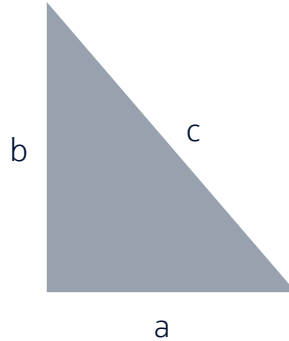
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Task 4
Triangle

Write a program that checks that it can build a triangle for the three user-defined segments a, b, c.

$a + b > c$

$b + c > a$

$c + a > b$


```
Enter three segments a, b and c: 3 4 5
From length segments 3 4 5 triangle could be build
```

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Task 5
Quadratic equation

Write a program that solves a quadratic equation for real numbers (Δ≥0). Load coefficients a, b and c (remeber that a must be other than 0). Please use a below quations:

$$ax^2 + bx + c = 0$$

$$\Delta = b^2 - 4ac$$

$$x_1 = \frac{-b - \sqrt{\Delta}}{2a} \qquad x_2 = \frac{-b + \sqrt{\Delta}}{2a}$$

To find a roots (solver of quadratic equations) use a sqrt() function.

```
----- Quadric equation ax^2 + bx + c = 0 -----
Enter coefficients a b c:
5 6 1
x1 = -1
x2 = -0.2
```

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