# Lab 02 - Array Counting Problems

**Direction: Submit typed work in the Labs directory of your github repository and/or dropbox. Each part should be a separate files. The files named should be `"lab2A.cpp"` and `"lab2B.h"` respectively. Do not inlude any additional libraries than the ones included in the accompanying `"Shapes.h"`.**

## Part A: In class

Your objective is to write a program that defines the following function

- ☐ Define an int function named `SecondToLastOccurrence()` that takes a double array parameter, an int parameter and a double parameter respectively. Given that the int parameter represents the size of the array parameter, the function returns the index of the second to last occurrence of the double parameter if the parameter appears at least twice in the array parameter; otherwise, the function returns -1.

## Part B: Take home

Your objective is to define the class named **Parallelogram** that publicly inherits the **Shape** interface from the accompanying header file `Shape.h`. For the class, you must include the following:

- ☐ A private double array field for each of the side of the parallelogram.
- ☐ A public default constructor that assigns 1 to each element of the field.
- ☐ A public overloaded constructor that takes two double parameters. It assigns the parameters to their respective elements of the field.
- ☐ A public copy constructor.
- ☐ A public assignment operator.
- ☐ A public empty destructor.
- ☐ A public overridden `Perimeter()` method. It returns the perimeter of the parallelogram.
- ☐ A public overridden `Area()` method. It returns the area of the parallelogram with an acute angle of 30°.
- ☐ A public overridden `ToString()` method. It returns a string of all the sides enclosed in curly braces. The sides most have two decimal places.
- ☐ A friend overloaded ostream operator. It displays the elements of the field in the same format as `ToString()`.