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 `Occurrences()` 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 total number of occurrences of the double parameter.

Part B: Take home

Your objective is to define the class named **Ellipse** 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 radius of the ellipse.

☐ 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 ellipse.

☐ A public overridden `Area()` method. It returns the area of the ellipse.

☐ A public overridden `ToString()` method. It returns a string of all the radii enclosed in curly braces. The radii most have two decimal places.

☐ A friend overloaded ostream operator. It displays the elements of the field in the same format as `ToString()`.