Homework 1 *(Due: May 22)*
C++ Programming - COSC 2321

Department of Computer Science and Electrical Engineering

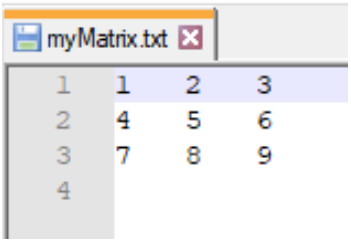
Summer Session I, 2022

Exercises

*Create a **New Project** for every exercise. Take a screenshot of the source code along with its output and place the **source code** and the **screenshot** in a **zipped folder** named **LastNameFirstName_HW1***

Exercise 1

Open a file for **writing** and ask user to enter 9 **int** values into it (3 rows and 3 columns) forming a matrix as shown in the figure below



Use a **tab** among **int** values and a **newline** character at the end of each row

Exercise 2

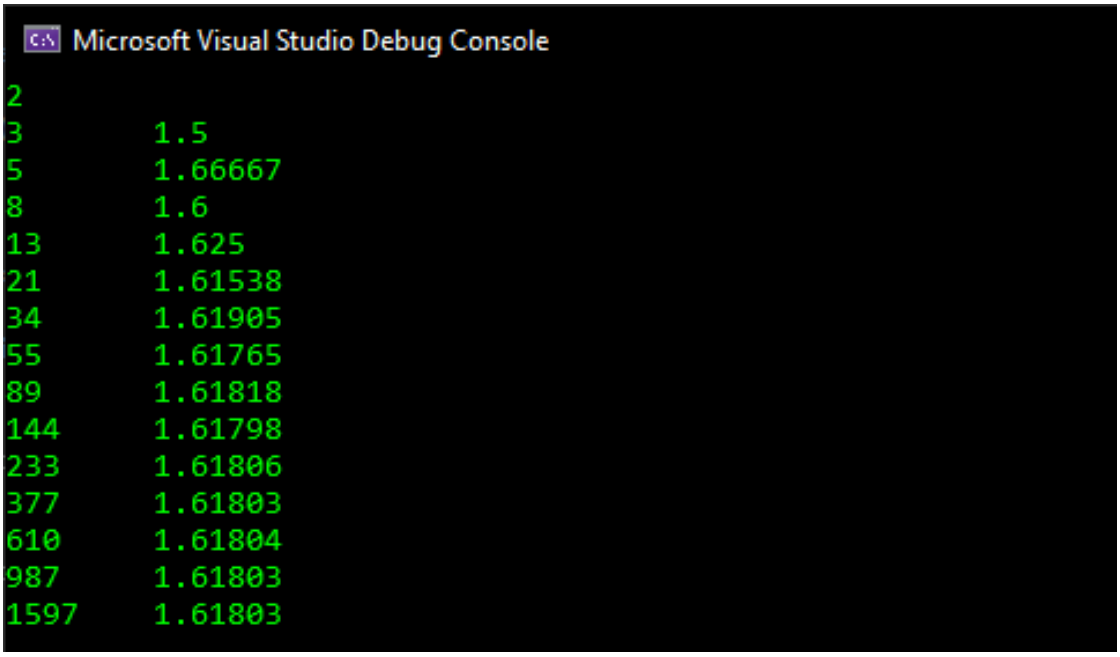
Based on Ex. 1, read the **int** values from the array/matrix and print their **sum**. Before you open the file for **reading**, ask user to type in the **filename** instead of you hard-coding it into the source file.

Note: You do not have to worry about **tab** or **newline** characters, C++ will read one **int** at a time (row-wise)

Exercise 3

Print the sequence of **Fibonacci** numbers, starting from 2. You can print the first 15 numbers in the sequence. In addition, print the ratio between all consecutive numbers in the sequence, that is: 5/3, 8/5, 13/8, etc. The ratio that you get is called the **golden ratio**, that is, the number ϕ (*phi*). See figure below of a proposed output

Note: Submit through **Canvas**


Microsoft Visual Studio Debug Console
2
3 1.5
5 1.66667
8 1.6
13 1.625
21 1.61538
34 1.61905
55 1.61765
89 1.61818
144 1.61798
233 1.61806
377 1.61803
610 1.61804
987 1.61803
1597 1.61803