

Lab 2 (Due: May 19)

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_Lab2**

Exercise 1

Create an **int array** of size 5. The size of the array should be defined as a **preprocessor directive**. Ask user to enter values into the array. Print contents of array

Exercise 2

Similarly to Ex. 1 above, create now a 2D array of size 3×3 (use **preprocessor** for the size of rows and columns). Ask user to enter values into the array. Print the contents of the array as a 2D matrix

Exercise 3

Similarly to Ex. 2 above, create a 3D array of size $[3][2][2]$ (z, x, y); the numbers entered should be in the range of 0...255. Find the mean value (average) of each x, y cell across the three different matrices. The resulting array will be a two-dimensional array containing the averages of the three-dimensional array (this is an example of an RGB2Gray conversion). Use **preprocessor** for the sizes of the arrays

Note: See next page the a plot of a 3D matrix. The mean (i.e., average) of the 3 green circles should be computed. The same goes with the 3 red circles and so on so forth resulting in a 2D array

See overleaf

Average1=(38+36+35)/3
Average2=(253+252+250)/3

The diagram shows a 3D grid of data points. The first column of the grid is highlighted with green circles and labeled 'Average1'. The second column is highlighted with red circles and labeled 'Average2'. The grid is organized into three rows, labeled Fr₁, Fr₂, and Fr₃ on the left. The data points are as follows:

	Fr ₃	Fr ₂	Fr ₁
1	38	36	35
2	253	252	250
3	129	128	130
4	141	139	138
5	18	19	17
6	72	11	18
7	18	0	0
8	150	10	19
9	190	11	250
10	189	249	255
11	24	250	252
12	248	178	

Note: Submit through **Canvas**