Lab 9: C programming **Due date:** Nov/30/2021

In this lab assignment we will be practicing with C programming. Most of the features used in this assignment are explained in the textbook and slides but there might be a few things that you will need to learn from other sources. You can always use a search engine to get more information on commands or ways to do certain things.

List of Tasks

Use vi to create a file named **lab9.c** containing a C program that reads integer numbers from a file, prints them on the screen, and calculates their average. Make sure your name and course are at the top of the file.

Your **main( )** function must read the values, accumulate and count them, and pass these last two values to a function named **avg( )** that returns the resulting average. Since the input might be empty, your main( ) function must avoid division by zero. Thus, it should display "The average is: 0" if no values were read from the file. Test my solution with an empty file to see how it works. Your program must read the numbers from a file named **input9.txt** available from **/files/labs/lab9**. Each number is an integer. For each integer in the input, display it preceded by its order in the file. After displaying all the numbers, display their average.

Function **avg( )** must be defined in a separate file named **lab9fun.c**. It calculates the average as an integer division.

You must create a makefile named **make_lab9** that defines the rules for creating the object codes for both source files and for creating an executable file named **lab9**. I should be able to put in a directory your three files (lab9.c, lab9fun.c, and make_lab9) along with the input file, run the make utility with make_lab9 to create the executable, and then run it to test your solution.

You have to open the file in main(), check for errors when opening the file, and close it at the end of your program. Test my solution without the input file being present in the directory where the executable is to see how it works.

Example: for the values in the provided input file, the output should look like the one below.

The values read from the file are:

1: 100
2: 90
3: 85
4: 0
5: 78
6: 0
7: 90

The average is: 63

Run my sample solution to see how your program should work. If you have any questions, please do not hesitate ask.

Put a comment at the top of your files indicating your team number and the name of the members of the team that worked on the solution please.

When done, put lab9.c, lab9fun.c, and make_lab9 in a compressed folder named lab9_2344_t# and submit it through Blackboard using the "Assignments" tool. Do Not email it.

Notice this time the only file that must have the team number in its name is the compressed folder.