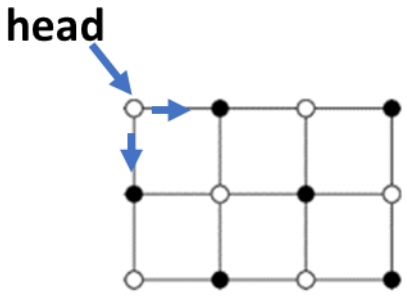
Name/Surname:
Number:

EHB208E **Data Structures & Programming** **Autumn 2023**

1st Homework

1) Write a "C" program that reads the matrix data (integer numbers) from a given file (input.csv) and builds this matrix using a linked-list data structure as shown below. The size of the matrix is not known. **Do not use an array to define and store this matrix. Directly define the linked list from the given input.csv file.** Each node can have a maximum of three members in your linked list.



(a) Print the matrix defined by a linked list to the "output_print.txt" file.
(b) Print the diagonal elements of the matrix from the defined linked list to the "output.txt" file as the first line of the file.
(c) Visit all the notes of this link list column by column and from top to bottom. Print the visiting result as a second line in the output.txt file as shown below.

The content of "input.csv" should be (*we will test your code by different input.csv files*):
2,9,4
0,4,0
9,0,12
The content of the "output_print.txt" file should be:
2,9,4
0,4,0
9,0,12
The content of the "output.txt" file should be:
2,4,12
2,0,9,9,4,0,4,0,12

Note 1: Turnitin can be used to check for any cheating. Please submit your own work!
Note 2: The **text** in the output files and **names of the output files** should be correctly typed. Not even extra spaces and characters are allowed. In such cases, you may not get any grade.
Note 3: "C" language code is expected. **C++ codes will be graded out of 50 points.**
Note 4: A single "C" code file is allowed to upload Ninova.
Note 5: Your code should be properly commented on. Uncommented code will get partial credit.

Important: You have to do your assignment alone. Code sharing among students or using code from any other sources are not allowed.

Upload your project's C source files to "EHB208E Homework" field in your Ninova system.