CL1002 – Programming Fundamentals Lab

Exercise # 08

Note:

- Submit a pdf file containing all of your C code with all possible screenshots of every task outputs on Google Classroom.
- Copied task will be awarded **zero** marks.
- Note that these lab task marks could be graded through a viva in lab.
- Please submit your file with this naming convention (roll-no-name) i.e (22P-8743-Zain.pdf).

Problem: 1 | 2d Array

Write a program which input a 2-Dimensional array of size 3x4, find the largest element in it

Problem: 2 | 2d Array

Write a C Program to Find the Transpose of a Matrix.

The program takes a matrix and prints the transpose of the matrix. In a transpose matrix, rows become columns and vice versa.

Expected Output :

The matrix is :

1 2

3 4

The transpose of a matrix is :

1 3

2 4

Problem: 3 | 2d Array

Write a program which input a 2-Dimensional array of size 3x3, find the sum of diagonals of a matrix.

Expected Output :

The matrix is :

1 2 5

3 4 7

6 3 8

Addition of the Diagonal elements is :13

Problem: 4 | Array 1 Dimensional

Write a function find_small_val(int A[]) that given an array A of N integers, returns the smallest positive integer (greater than 0) that does not occur in A.

For example, given A = {1, 3, 6, 4, 1, 2}, the function should return 5.

Given A = {1, 2, 3}, the function should return 4.

Given A = {-1, -3}, the function should return 1.

Write a program for the following assumptions.

Each element of array A is an integer within the range

[-1,000,000...1,000,000].

Additional Task

Problem: 5 | 2d Array

Write a C Program to Perform Matrix Multiplication.

1. The program takes two matrices and multiplies them

2. If number of columns of matrix A is not equal to number of rows of matrix B, then matrices cannot be added.

3. The program is exited.

4. Else they are multiplied and the result is printed.

5. Exit.