Name: ID: Sec:

CSE 115L : Section 14 (Practice Problems: 2D Array)

1. Ask user for number of rows and number of columns. Based on input, declare two 2-dimensional arrays M and N. Now implement the following tasks:

   i) Take input for both arrays
   ii) Output the arrays as form of matrix
   iii) Calculate the sum and store it in another 2D array of same dimension. Display the sum.

Row: 2 Column: 3	Enter first array elements: 2 3 1 10 4 6	Enter second array elements: 7 2 4 6 8 4	First array: 2 3 1 10 4 6 Second array: 7 2 4 6 8 4	Sum: 9 5 5 16 12 10

2. Take input of a 3x3 matrix and display the sum of its main diagonal element. For the following matrix, your program should display 12. (Because 5+3+4 = 12)

   5 2 1
   0 **3** 7
   6 8 **4**

3. Take input of a matrix of MxN dimension, where M and N are user inputs. Now display the transpose of it. You can get the transpose matrix by interchanging row and column of the original matrix. Complete this task in both the following ways:
   i) Use a second matrix to store the transposed values
   ii) Modify the original matrix to its transpose matrix (assume M=N)

Original matrix	Transpose matrix
4 6 2 1 3 8	4 1 6 3 2 8

4. Ask user for a positive integer n and then display a nxn identity matrix as follows:

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Enter n: 4
1 0 0 0
0 1 0 0
0 0 1 0
0 0 0 1
```