CSE 215L: Programming language II Lab
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Lab - 05 [Arrays]
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Objective:

- Introduction to Arrays
- Use of Arrays to solve problems
- Single and Multi-Dimensional Arrays

- **One Dimensional Array:**
  1) double [ ] myList; (or) double myList [ ];
  2) double [ ] myList = new double[3];
  3) double [ ] myList = {1.9, 2.9, 3.4, 3.5};

- **Two Dimensional Array:**
  1) dataType[ ] [ ] arrayRefVar; (or)
  2) dataType [ ] [ ] arrayRefVar; (or)
  3) dataType arrayRefVar [ ] [ ];
  int [ ] [ ] arr = new int [3] [3]; //3 rows and 3 columns
  declaring and initializing 2D array:

```
int arr [ ] [ ] = { {1,2,3}, {2,4,5}, {4,4,5} };
```

Output:
```
1 2 3
2 4 5
4 4 5
```

Tasks:

1. Read 10 integers from the user and store them in an array. Take another integer from the user and check whether it is in the array (print “Found” in that case) or not (print “Not found”).

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. In this task, you will find the summation of two matrices. Read two integers, m, and n from the user. These are the dimensions of the matrices you have to find

the summation of. Next, read the elements of the matrices from the user. Then print the two matrices you read and finally, find the sum of two matrices and print it.

Sample run:

Input			Output	
Enter rows:2 Enter columns: 3	Enter first matrix elements: 2 3 1 10 4 6	Enter second matrix elements: 7 2 4 6 8 4	First matrix: 2 3 1 10 4 6 Second matrix: 7 2 4 6 8 4	Sum: 9 5 5 16 12 10

4. In this task, you will find the transpose of a matrix. Read two integers, m, and n, from the user. These are the dimensions of the matrix. Next, read the elements of the matrix from the user. Then, print the transpose of the matrix.

Sample run:

Input		Output
Enter rows:3 Enter columns: 4	Enter Matrix Elements: 2 3 6 7 4 8 1 5 9 0 7 2	Transpose: 2 4 9 3 8 0 6 1 7 7 5 2