Homework Assignment 5

Part A (10%)

1. What's wrong with this scrap of code?

```c
1    #include <stdio.h>
2    int main () {
3    int a[5];
4        for(int i = 1; i <= 5; i++)
5            a[i] = 0;
6    }
```

Part B (90%) Programming Exercises:

1. Write a program to read numbers in an array from your keyboard:
   a. Display it in reverse.
   b. Find the maximum and minimum element in this array.
   c. The expected output:

   ```
   Input the size of the array to store the number:4
   Input 4 number of elements in the array:
   element - 0: 4
   element - 1: 2
   element - 2: 7
   element - 3: 6

   The values stored into the array are: 4 2 7 6
   The values stored into the array in reverse are: 6 7 2 4
   The maximum element is: 7
   The minimum element is: 2
   ```

   Hint: You can assign values to array elements from your keyboard by:

   ```c
   for(int i=0; i<n; i++)
       {
           printf("element - %d : ",i);
           scanf("%d",&a[i]);
       }
   ```

2. Write a program to read two square matrices of same size in 2-D arrays from your keyboard:
   a. Display addition of the two matrices.

      b. Display subtraction of the two matrices.

      c. The expected output:

```
Input the size of the square matrix (less than 5): 2
Input elements in the first matrix :
element - [0],[0] : 1
element - [0],[1] : 2
element - [1],[0] : 3
element - [1],[1] : 4
Input elements in the second matrix :
element - [0],[0] : 5
element - [0],[1] : 6
element - [1],[0] : 7
element - [1],[1] : 8

The First matrix is :
1 2
3 4
The Second matrix is :
5 6
7 8
The Addition of two matrices is :
6 8
10 12
The Subtraction of two matrices is :
-4 -4
-4 -4
```

3. Write a program to read a string from the keyboard:

      a. Find the frequency of a specific character.

      b. The expected output:

```
Input the string: This is a test string
Input the character to find frequency: i
The frequency of 'i' is: 3
```

Hint: You can use the fgets() function to read a line of string. And, you can use puts() to display the string.

Please reference the assignment submission guide on the iLearn for submission.