## CSE 331/EEE 332 (Microprocessor Interfacing & Embedded System Lab)

**Lab 05 :** **Practice Class**
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1. A palindrome is a word that is same when read from both ends. Example: 'RACECAR'. Write a program that will take a string from a user and determine whether the word is a palindrome. The output may be a 'Yes' or a 'No'.

| Sample Input | Sample Output |
|---|---|
| racecar | Yes |
| hellyeah | No |

2. Write an ASM program to find 23rd Fibonacci number. Create a procedure that will store first two values (0 and 1) in the first two location of the memory (00000H and 00002H). Inside the main procedure, retrieve these values from memory and calculate the subsequent Fibonacci number by adding these values together and store it in the next memory location. Hints: use *loop* instruction.

   Output: 23rd value = 28657d = 6FF1H
   [0000:002E] => F1 [lower byte]
   [0000:002F] => 6F [higher byte]

3. Write a program to find the minimum and maximum element in an array. [Create an array of size 10 and read the elements as user input].

4. You are given two arrays loaded with random numbers. You must add the content of each array and the sum will be stored in another array. You must print the contents of the sum array. Ex:

| | | | | | |
|---|---|---|---|---|---|
| **Array 1** | 1 | 2 | 3 | 4 | 5 |
| **Array 2** | 5 | 4 | 3 | 2 | 1 |
| **Sum Array** | 6 | 6 | 6 | 6 | 6 |

   Hints: Create the three arrays. Load values of your wish in the first two. Place the sum of each of the element in the two arrays into the third array.

5. Write a program that searches for a character inside a string. Both the string and the search character should be taken from the user. Once the character is found, your program should output the location (index) of the character. If there are multiple instances of the same character, then take only the first one into consideration.

| Sample Input | Sample Output |
|---|---|
| Enter a string: racecar<br>Enter a character: a | Index: 1 |
| Enter a string: racecar<br>Enter a character: b | Not Found |