



CSE 331L: Microprocessor Interfacing & Embedded System Lab

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EEE 332/ CSE 331

Lab-5

Topic-Series

A very well-known series to us is Fibonacci Series:

0,1,1,2,3,5,8,13,21.....

Base Condition: [will be provided with the question]

$F_0=0, F_1=1$

Main Function: [will be provided with the question]

$F_n = F_{n-1} + F_{n-2}$

So if we are told to find 10th Fibonacci Number or A Fibonacci Series up to 10th position we can solve it very easily, can't we?

Steps:

- I. Set the counter register/variable value to 10
- II. Set the base variables into its position of the array
- III. Update counter register according to your coding procedure
- IV. Finally set and execute the function $F_n = F_{n-1} + F_{n-2}$ for each variables in the array.

<pre>org 100h lea si,arr1 mov cl,10 mov [si],0 mov [si+1],1 add si,2 sub cl,2</pre>	<pre>loop1: mov al,[si-1] mov bl,[si-2] add al,bl mov [si],al inc si dec cl cmp cl,0 jnz loop1 ret arr1 db 10 dup (0)</pre>
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Practice

Series: 1,3,5,7,9,.....

- 1. Find the 50th number of this series and save into a variable.**
- 2. Take the value of “n” from the user and build the series into an array upto nth position.
e.g. if n=10, arr1: 1,3,5,7,9,11,13,15,17,19**
- 3. Find the sum of the 1st 10 values of the series and save the sum into a variable named “sum”.**
- 4. Take the value of “n” and build the series up to nth position then find the sum of the series and save into a variable.**

**** Imagine a series with an interval of 5. Starts with value 3. What will be the 5th value of this series?****

Series: 3,8,13,18,23

Ans: 23

****If starting value is not mentioned in the question, by default it will be 1.**

e.g. A series with an interval of 3 is : 1,4,7,10.....