Lab Experiment #4: Arrays, Memory Copy, and Arithmetic Operations

December 5, 2023

Objective

Become familiar with using arrays, memory copy, and arithmetic operations in 8086 emulator software.

Lab Work

Generate an array that consists of N 8-bit numbers (programmer can assign N). The following function (F_n) produces the elements of the array where $n = 1, 2, ..., N$.

$$F_n = \begin{cases} 0, & \text{if } n = 1 \\ 1, & \text{if } n = 2 \\ F_{n-1} - F_{n-2}, & \text{if } n > 2 \text{ and } n \text{ is odd} \\ F_{n-1} + F_{n-2}, & \text{if } n > 2 \text{ and } n \text{ is even} \end{cases}$$

Where N is an integer number greater than 14 and lower than 26 ($14 < N < 26$). Otherwise, the following error message is displayed: "Please enter a value between 14 and 26".

Example: For $N = 10$:

Index of Array	N	Function F_n value
1	0	0
2	1	1
3	2	1
4	3	2
5	4	1
6	5	3
7	6	2
8	7	5
9	8	3
10	9	8

Hint: You can use the following code block to display the error message.

```
LEA SI, MESSAGE
MOV CX, 38
MOV AH, 0Eh
GO: LODSB
INT 10h
LOOP GO
...
MESSAGE DB 'Please enter a value between 14 and 26', 0
```

Evaluation

You must complete your work until the lab hour. You will be evaluated in the lab session.