EXPERIMENT 4

Aim :

Write a program to Generate Fibonacci Series.

Requirements :

8085 Simulator IDE Software.

Procedure :

1. Go to the tools and select assembler.
2. Write the code in assembler window.
3. Go to the tools and select assemble & load in assembler window or press F8.
4. Check for errors and fix them.
5. Go to 8085 Simulator IDE and open simulation and start or press F1.
6. Open memory editor from tools option to observe the Fibonacci Series.

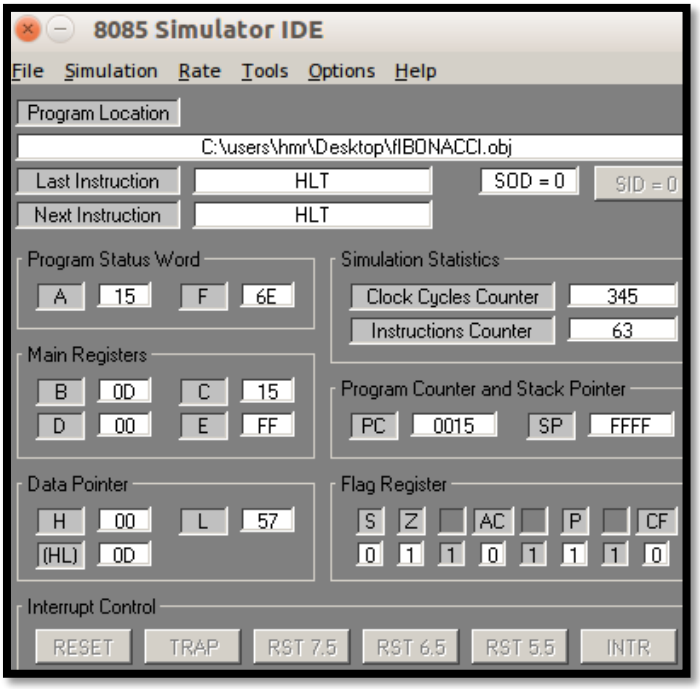
Program to Generate Fibonacci Series :

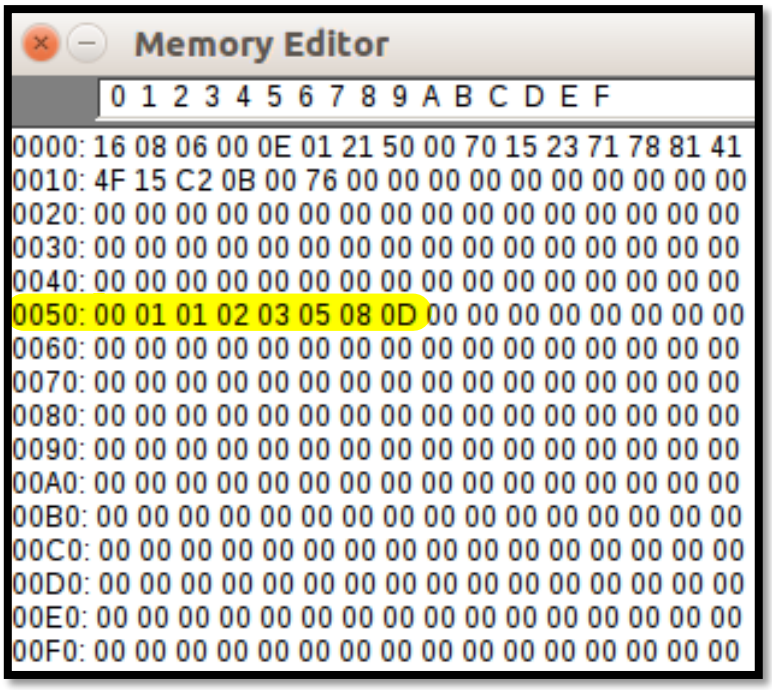
Address	Mnemonics	Operands	Comments
0000H	MVI D	08H	Initialize register D with 08H (Counter)
0002H	MVI B	00H	Initialize register B with 00H (Previous Number)
0004H	MVI C	01H	Initialize register C with 01H (Current Number)
0006H	LXI H	0050H	Initialize H-L pair to point to memory location 0050H
0009H	MOV M , B		Move the content of register B to Memory
000AH	DCR D		Decrement register D (Counter)
000BH	LOOP | INX H		Increment H-L pair
000CH	MOV M , C		Move the content of register C to Memory
000DH	MOV A , B		Move the content of register B to Accumulator
000EH	ADD C		Add C to A & store the result in Accumulator
000FH	MOV B , C		Move the content of register C to register B
0010H	MOV C , A		Move the content of Accumulator to register C
0011H	DCR D		Decrement register D (Counter)
0012H	JNZ LOOP		Jump to LOOP (000BH) if D (Counter) is not Zero
0015H	HLT		End of program

Screenshots :

```
0001          MVI D , 08H
0002          MVI B , 00H
0003          MVI C , 01H
0004          LXI H , 0050H
0005          MOV M , B
0006          DCR D
0007 LOOP     INX H
0008          MOV M , C
0009          MOV A , B
0010          ADD C
0011          MOV B , C
0012          MOV C , A
0013          DCR D
0014          JNZ  LOOP
0015          HLT
```

```
0001 0001  0000 16 08          MVI D , 08H
0002 0002  0002 06 00          MVI B , 00H
0003 0003  0004 0E 01          MVI C , 01H
0004 0004  0006 21 50 00       LXI H , 0050H
0005 0005  0009 70             MOV M , B
0006 0006  000A 15             DCR D
0007 0007  000B 23       LOOP  INX H
0008 0008  000C 71             MOV M , C
0009 0009  000D 78             MOV A , B
0010 0010  000E 81             ADD C
0011 0011  000F 41             MOV B , C
0012 0012  0010 4F             MOV C , A
0013 0013  0011 15             DCR D
0014 0014  0012 C2 0B 00       JNZ  LOOP
0015 0015  0015 76             HLT
0016 0016  0016
0017 Number of errors = 0
```





Output :

Before Execution	**After Execution**

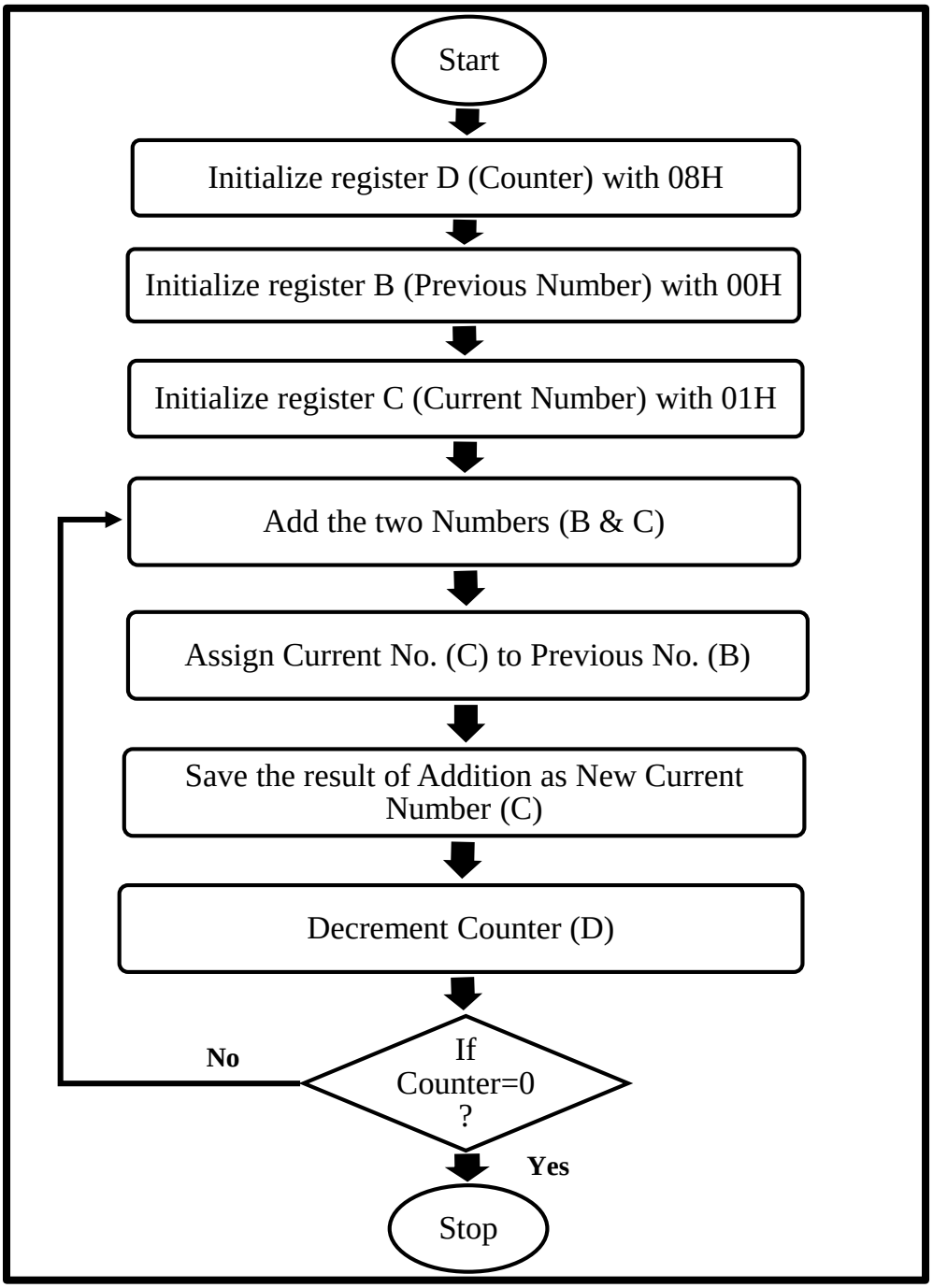
D (Counter)
08H

B (Previous Number)
00H

C (Current Number)
01H

0050H	**00H**
0051H	**01H**
0052H	**01H**
0053H	**02H**
0054H	**03H**
0055H	**05H**
0056H	**08H**
0057H	**0DH**

Flow Chart :



Result :

Program to Generate Fibonacci Series was implemented successfully.