U19CS076 MIT ASSIGNMENT 6

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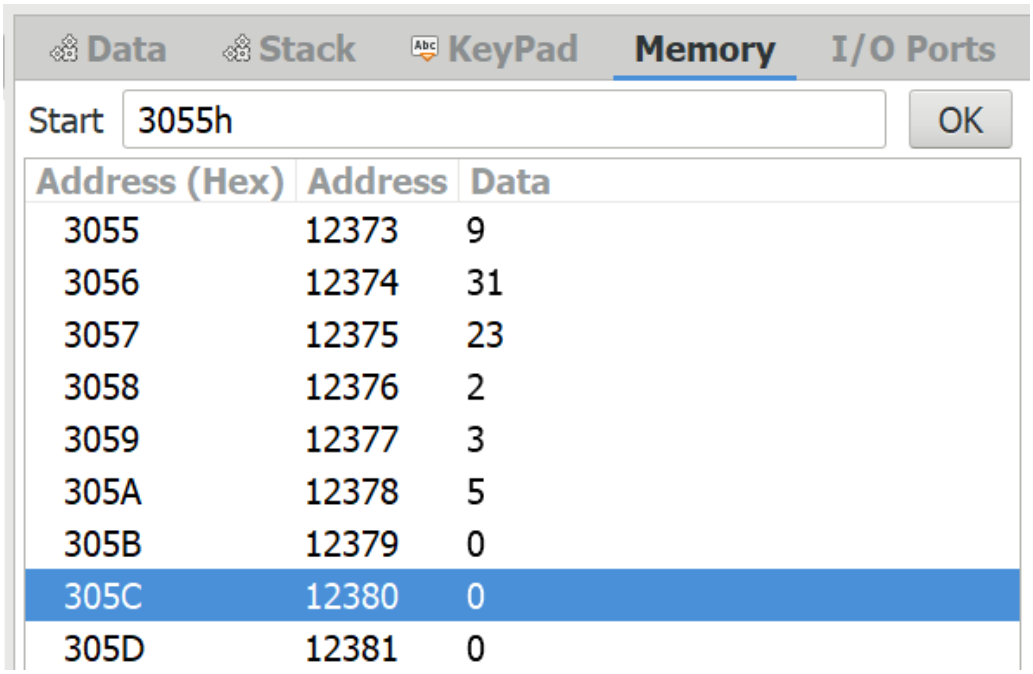
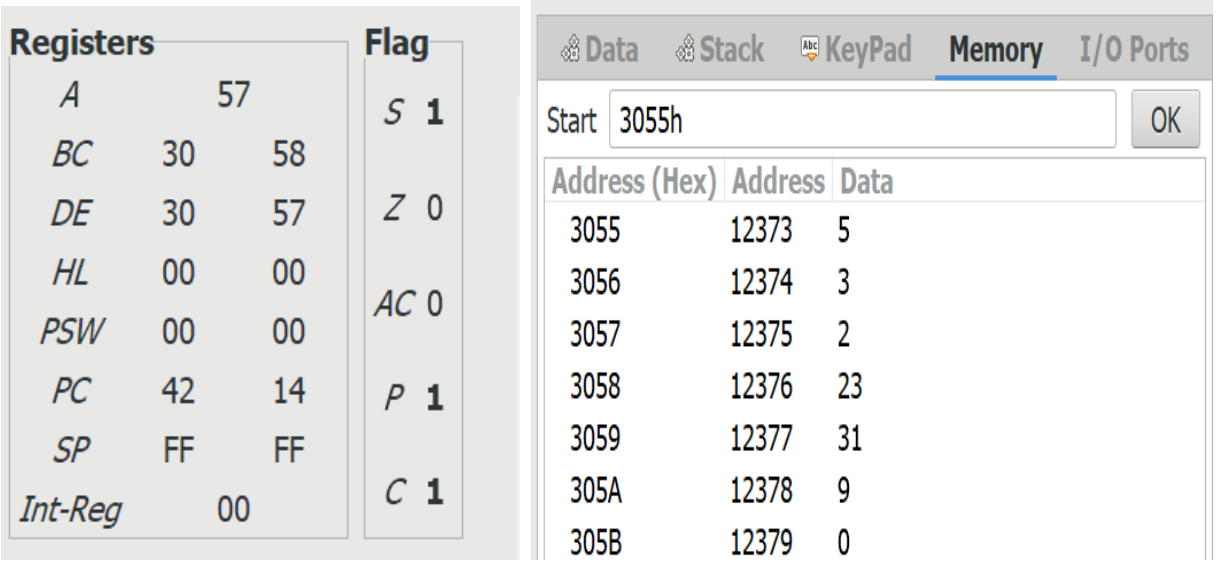
(1) The following block of data is stored in memory locations from 3055H to 305AH. Write a program to transfer the block of data in reverse order at same memory location.

DATA (HEX): 22, A5, B2, 99, 7F, 37

```
lxi b,3055h
lxi d,305Ah
loop: ldax b                    ;BEFORE EXECUTION
mov m,a
ldax d
stax b
mov a,m
stax d
inx b
dcx d
mov a,e
cmp c
jnc loop
hlt
```



AFTER EXECUTION



Registers			Flag	
A		57	S	1
BC	30	58	Z	0
DE	30	57	AC	0
HL	00	00	P	1
PSW	00	00	C	1
PC	42	14		
SP	FF	FF		
Int-Reg		00		

Data | Stack | KeyPad | Memory | I/O Ports

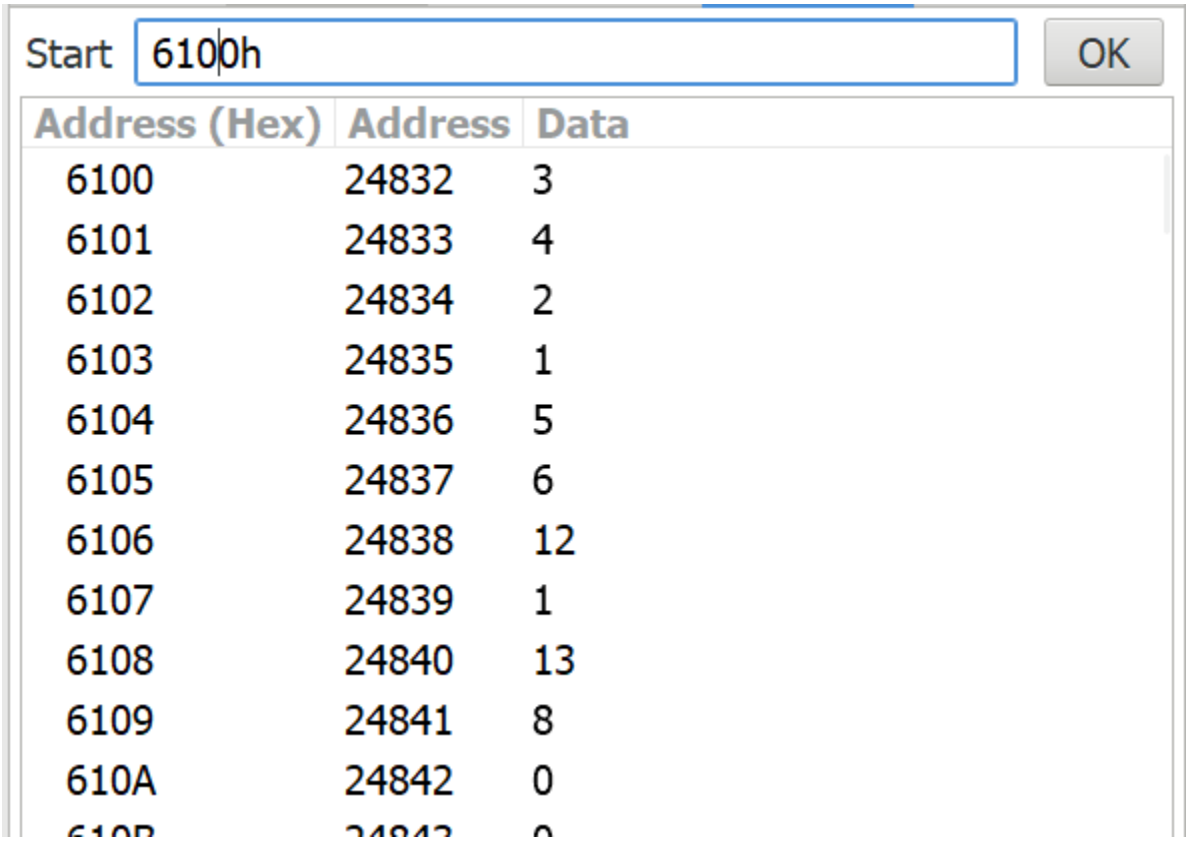
Start 3055h OK

Address (Hex)	Address	Data
3055	12373	5
3056	12374	3
3057	12375	2
3058	12376	23
3059	12377	31
305A	12378	9
305B	12379	0

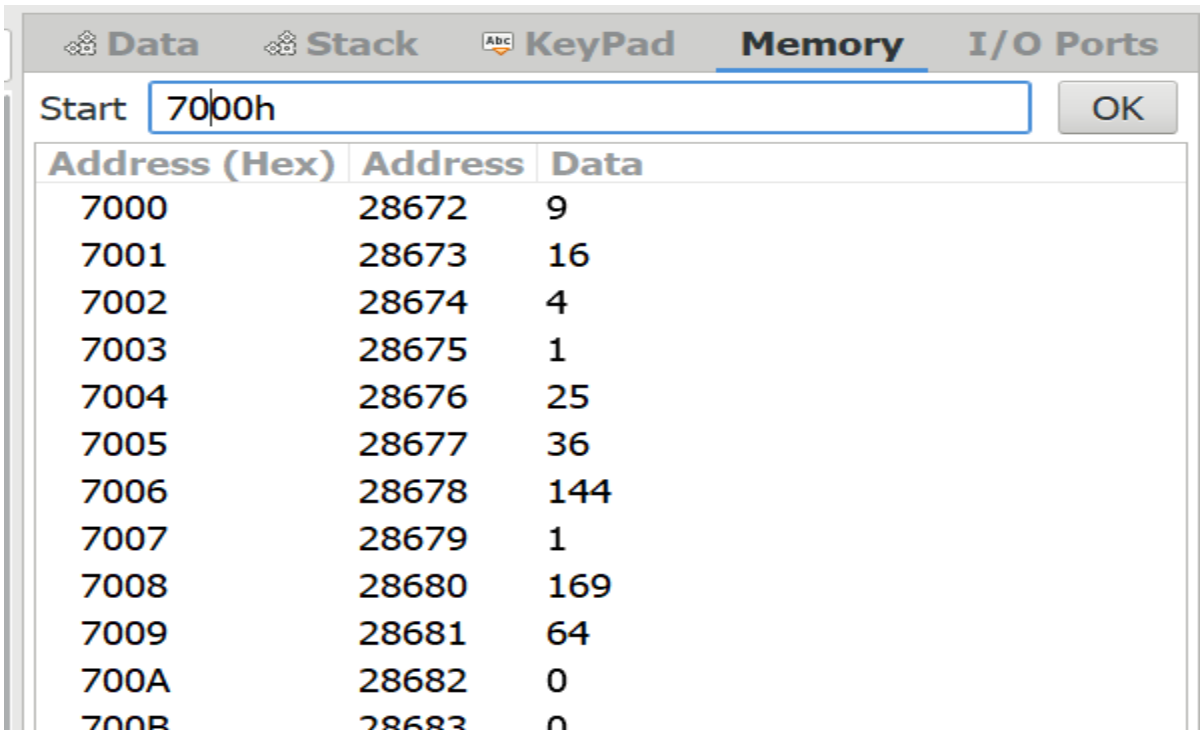
(2) Find the square of the given numbers from memory location 6100H and store the result from memory location 7000H.

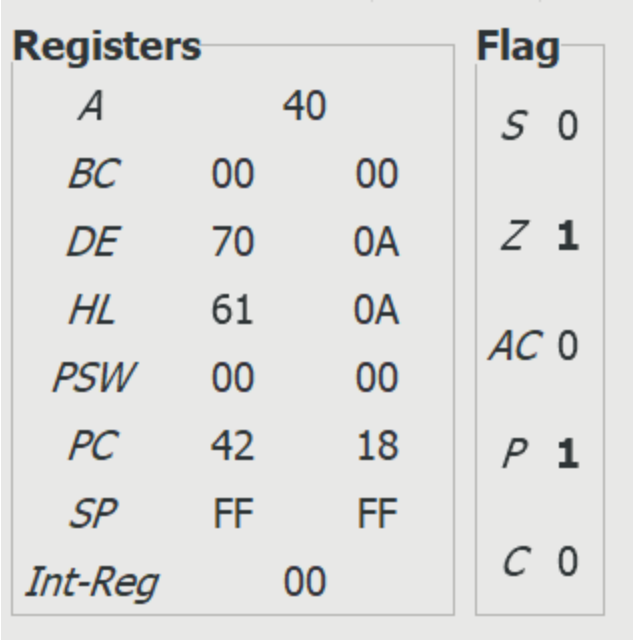
```
LXI H,6100H     ;source address
LXI D,7000H     ;destination address
MVI C,0AH       ;for 10 counts
loop: MVI A,00H
MOV B,M
lp2: ADD M
DCR B
JNZ lp2
STAX D
INX H
INX D
DCR C
JNZ loop
HLT
```

BEFORE EXECUTION



AFTER EXECUTION





(3) WAP to find Factorial of a given number using Call and Subroutine.

```
LDA 3000H

CPI 2H

JC SKIP

MOV E,A

MVI D,00H

DCR A

CALL Factorial

SHLD 3001H

JMP END

SKIP: LXI H,0001H

SHLD 2001H

END: HLT

Factorial: LXI H,0000H

MOV C,A

loop: DAD D
```

DCR C

JNZ loop

XCHG

DCR A

CNZ Factorial

RET

BEFORE EXECUTION

Address (Hex)	Address	Data
3000	12288	5

Input at-3000H

Output at -3001H

AFTER EXECUTION

Data Stack KeyPad **Memory** I/O Ports

Start 3000h OK

Address (Hex)	Address	Data
3000	12288	5
3001	12289	120

Registers

A	00	
BC	00	00
DE	00	78
HL	00	78
PSW	00	00
PC	42	1C
SP	FF	FF
Int-Reg	00	

Flag

S 0

Z **1**

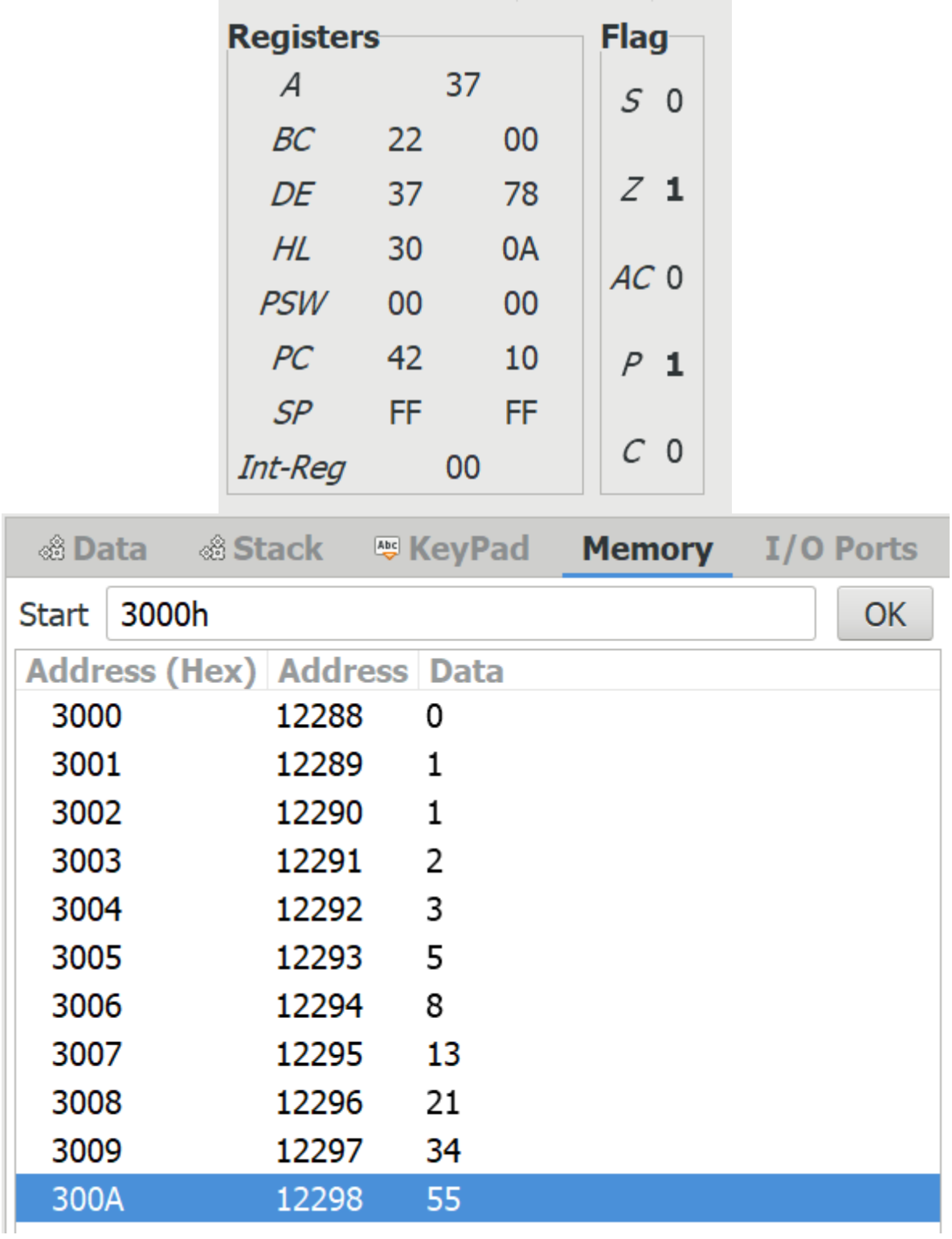
AC 0

P **1**

C 0

(4) WAP for Fibonacci Series using Call and Subroutine.

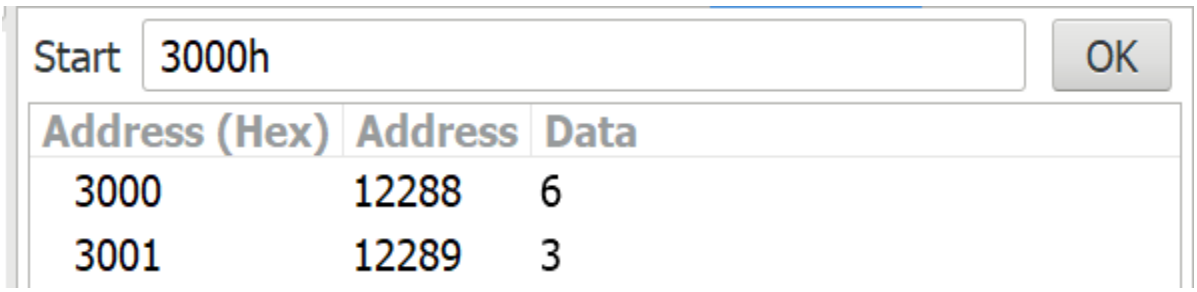
```
LXI H,3000H
MVI C,0AH       ;length of series(till 10 places)
DCR C
MVI B,00H
MVI D,01H
MOV M,B
INX H
CALL FIB
HLT
FIB: MOV M,D
loop: MOV A,B
ADD D
MOV B,D
MOV D,A
INX H
MOV M,A
DCR C
JNZ loop
RET
```



(5) WAP to find Multiplication of Two 8-Bit Numbers using Call and Subroutine.

```
LDA 3000H

MOV B,A

LDA 3001H

MOV D,A

CALL MULT

STA 3002H

MOV A,C

STA 3003H

HLT

MULT: MVI C,00H

MVI A,00H

LOOP: ADD D

JNC lp2

INR C

lp2: DCR B

JNZ LOOP

RET
```

BEFORE EXECUTION



AFTER EXECUTION

Start 3000h OK

Address (Hex)	Address	Data
3000	12288	6
3001	12289	3
3002	12290	18

Registers

A	00	
BC	00	00
DE	03	00
HL	00	00
PSW	00	00
PC	42	13
SP	FF	FF
Int-Reg	00	

Flag

S 0

Z **1**

AC 0

P **1**

C 0