

EXPERIMENT -2

AIM: To add 5 numbers parallelly from 2 different locations and storing the result sequentially in memory.

CODE:

ORG 0000H

MOV R0,#10H

MOV R1,#20H

MOV R3,#05H

**L1: MOV A,@R0
 MOV B, A
 MOV A, @R1
 ADD A, B
 MOV @R1, A
 INC R0
 INC R1
 DJNZ R3, L1
 END**

INPUT:

Memory 1							
Address: i:0020h							
I:0x20:	06	07	08	09	0A	00	00
I:0x43:	00	00	00	00	00	00	00
I:0x66:	00	00	00	00	00	00	00
I:0x89:	00	00	00	00	00	00	00
I:0xAAC:	00	00	00	00	00	00	00
I:0xCF:	00	00	00	00	00	00	00
T:0xF2:	00	00	00	00	00	00	00
 Call Stack + Locals  Memory 1							

Memory 1							
Address: i:0010h							
I:0x10:	01	02	03	04	05	00	00
I:0x33:	00	00	00	00	00	00	00
I:0x56:	00	00	00	00	00	00	00
I:0x79:	00	00	00	00	00	00	00
I:0x9C:	00	00	00	00	00	00	00
I:0xBF:	00	00	00	00	00	00	00
T:0xF2:	00	00	00	00	00	00	00
 Call Stack + Locals  Memory 1							

OUTPUT:

Memory 1							
Address: i:0020h							
I:0x20:	07	09	0B	0D	0F	00	C
I:0x43:	00	00	00	00	00	00	C
I:0x66:	00	00	00	00	00	00	C
I:0x89:	00	00	00	00	00	00	C
I:0xAAC:	00	00	00	00	00	00	C
I:0xCF:	00	00	00	00	00	00	C
T:0xF2:	00	00	00	00	00	00	C
 Call Stack + Locals  Memory 1							

EXPERIMENT -3

AIM: To find the determinant of 2 X 2 Matrix.

MATRIX:

$$\begin{bmatrix} AB & AA \\ BB & FF \end{bmatrix}$$

CODE:

ORG 0000H

```
MOV R0,#10H
MOV R1,#13H
MOV A,@R0
MOV B,@R1
MUL AB
MOV R2,B
MOV R3,A
INC R0
DEC R1
MOV A,@R0
MOV B,@R1
MUL AB
MOV R4,A
CLR C
MOV A,R3
SUBB A,R4
```

```
MOV R3,A
MOV A,R2
SUBB A,B
MOV R2,A
MOV R0,#14H
MOV A,R2
MOV @R0,A
INC R0
MOV A,R3
MOV @R0,A
END
```

INPUT:

Memory 1						
Address:	D:10H					
D:0x10:	AB	AA	BB	FF	00	00
D:0x34:	00	00	00	00	00	00
D:0x58:	00	00	00	00	00	00

OUTPUT:

Memory 1										
Address:	D:10H									
D:0x10:	AB	AA	BB	FF	2E	27	00	00	00	00
D:0x2C:	00	00	00	00	00	00	00	00	00	00
D:0x48:	00	00	00	00	00	00	00	00	00	00
D:0x64:	00	00	00	00	00	00	00	00	00	00
D:0x80:	FF	07	00	00	00	00	00	00	00	00
D:0x9C:	00	00	00	00	FF	00	00	00	00	00
D:0xB8:	00	00	00	00	00	00	00	00	00	00
D:0xD4:	00	00	00	00	00	00	00	00	00	00
D:0xF0:	7C	00	00	00	00	00	00	00	00	00

RESULT:

Determinant of above matrix is: (2E27)H

EXPERIMENT - 4

AIM:- TO PERFORM SORTING ON NUMBERS STORED IN MEMORY LOCATION.

CODE:-

ORG 0000H

CLR C

MOV R4,#09H

MOV R0,#31H

MOV R6,#0AH

LABEL3:DEC R6

MOV A,R6

MOV R5,A

MOV A,R0

MOV R1,A

INC R1

LABEL1:MOV A,@R0

SUBB A,@R1

MOV A,@R0

JC LABEL2

MOV B,@R1

MOV @R1,A

MOV @R0,B

LABEL2:INC R1

CLR C

DJNZ R5,LABEL1

INC R0

DJNZ R4,LABEL3

END

INPUT:-

Memory 1												
Address: I:0031H												
I:0x31:	0A	09	08	07	06	05	04	03	02	01	00	00
I:0x54:	00	00	00	00	00	00	00	00	00	00	00	00
I:0x77:	00	00	00	00	00	00	00	00	00	00	00	00
I:0x9A:	00	00	00	00	00	00	00	00	00	00	00	00
I:0xBD:	00	00	00	00	00	00	00	00	00	00	00	00
I:0xE0:	00	00	00	00	00	00	00	00	00	00	00	00
I:0x03:	00	00	00	01	00	00	00	00	00	00	00	00
T:0x26:	00	00	00	00	00	00	00	00	00	00	0A	09

OUTPUT:-

Memory 1												
Address: I:0031H												
I:0x31:	01	02	03	04	05	06	07	08	09	0A	00	00
I:0x54:	00	00	00	00	00	00	00	00	00	00	00	00
I:0x77:	00	00	00	00	00	00	00	00	00	00	00	00
I:0x9A:	00	00	00	00	00	00	00	00	00	00	00	00
I:0xBD:	00	00	00	00	00	00	00	00	00	00	00	00
I:0xE0:	00	00	00	00	00	00	00	00	00	00	00	00
I:0x03:	00	00	00	01	00	00	00	00	00	00	00	00
T:0x26:	00	00	00	00	00	00	00	00	00	00	01	02

RESULT:

BEFORE SORTING: 0A 09 08 07 06 05 04 03 02 01

AFTER SORTING: 01 02 03 04 05 06 07 08 09 0A

EXPERIMENT - 5

AIM:- TO COUNT FREQUENCY OF A NUMBER PRESENT IN AN ARRAY OF NUMBERS STORED IN MEMORY LOCATION.

CODE:-

ORG 0000H

MOV R0,#30H

MOV R5,#0AH

MOV B,#00H

LABEL3:MOV A,@R0

CJNE A,#03H,LABEL1

INC B

INC R0

DJNZ R5,LABEL3

LABEL1: INC R0

DJNZ R5,LABEL3

END

INPUT:-

Memory 1										
Address: I:0030H										
I:0x30:	01	02	03	03	04	03	70	08	03	02
I:0x4C:	00	00	00	00	00	00	00	00	00	00
I:0x68:	00	00	00	00	00	00	00	00	00	00
I:0x84:	00	00	00	00	00	00	00	00	00	00
I:0xA0:	00	00	00	00	00	00	00	00	00	00
I:0xBC:	00	00	00	00	00	00	00	00	00	00
I:0xD8:	00	00	00	00	00	00	00	00	00	00
I:0xF4:	00	00	00	00	00	00	00	00	00	00
I:0x10:	00	00	00	00	00	00	00	00	00	00
I:0x2C:	00	00	00	00	01	02	03	03	04	03
T:0x48:	00	00	00	00	00	00	00	00	00	00



Call Stack + Locals

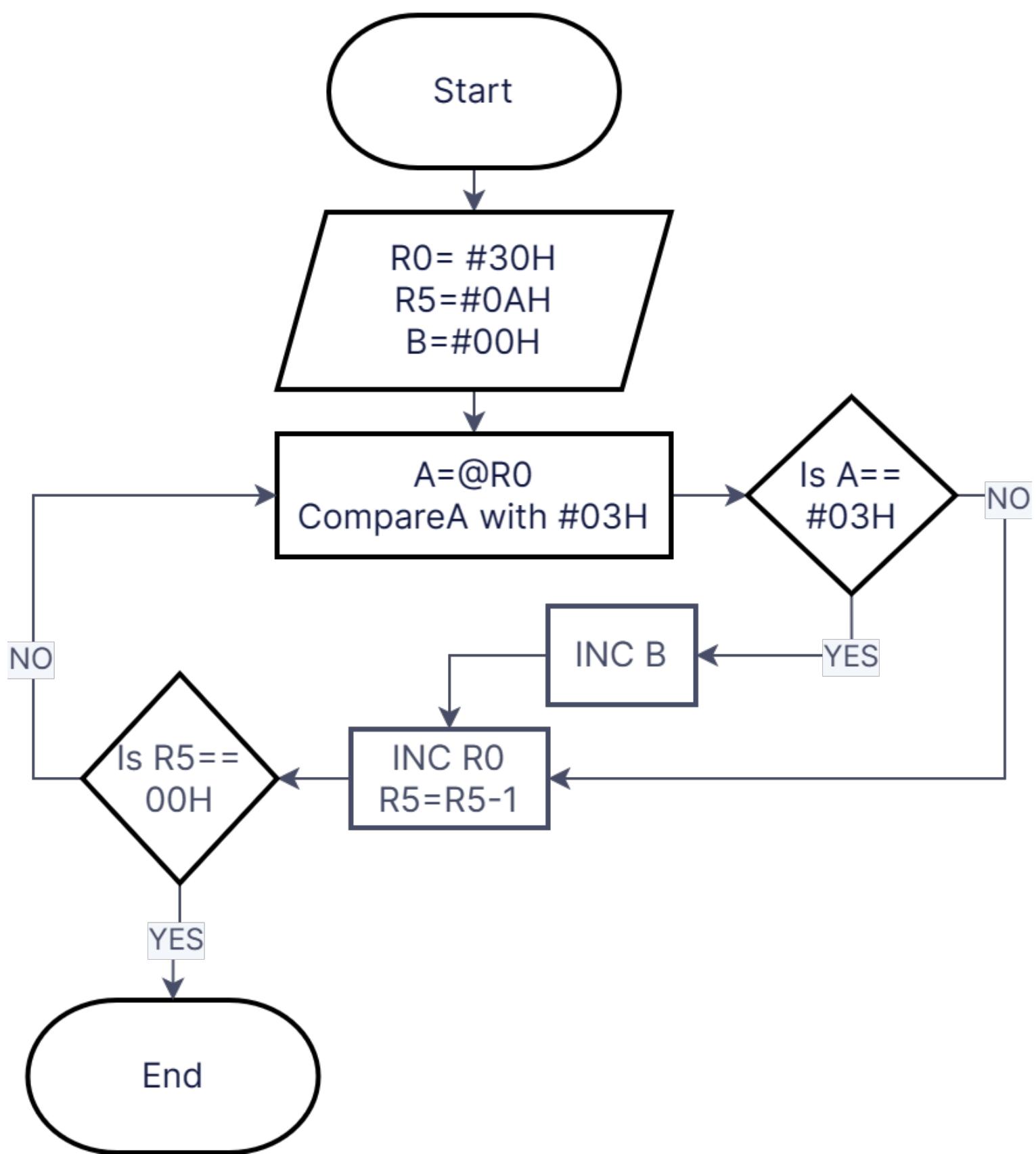


Memory 1

OUTPUT:-

Register	Value
Regs	
r0	0x3a
r1	0x00
r2	0x00
r3	0x00
r4	0x00
r5	0x00
r6	0x00
r7	0x00
Sys	
a	0x02
b	0x04
sp	0x07
sp_max	0x07
dptr	0x0000
PC \$	C:0x0013
states	68
sec	0.000034...
psw	0x81

RESULT: FREQUENCY OF 03H IN THE GIVEN ARRAY OF NUMBERS IS 4 (OUTPUT STORED IN REGISTER B).



EXPERIMENT - 6

AIM:- TO PRINT FIBONACCI SERIES.

CODE:-

ORG 0000H

```
MOV R0,#30H
MOV R1,#31H
MOV R5,#0AH
LABEL:MOV A,@R0
INC R0
ADD A,@R1
INC R1
MOV @R1,A
DJNZ R5,LABEL
END
```

OUTPUT:-

Memory 1	
Address:	I:0030H
I:0x30:	00 01 01 02 03 05 08 0D 15 22 37 59 00 0
I:0x4B:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 0
I:0x66:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 0
I:0x81:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 0
I:0x9C:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 0
I:0xB7:	00 00 00 00 00 00 00 00 00 00 00 00 00 00 0

RESULT:THE FIRST 12 NUMBERS OF FIBONACCI SEQUENCE IS STORED FROM (0030)H LOCATION IN MEMORY.

Start

RO=#30H
R1=#31H
R5=#0AH

A=@R0
RO=RO+1

A=A+@R1
R1=R1+1

A=@R1
R5=R5-1

NO

is R5=0?

YES

END

EXPERIMENT - 7

AIM:- TO PRINT FACTORIAL OF 5.

CODE:-

ORG 0000H

MOV R3,#05H

MOV R0,#01H

MOV R1,#02H

LABEL: MOV A,R0

MOV B,R1

INC R1

MUL AB

MOV R0,A

DJNZ R3,LABEL

MOV R0,#30H

MOV @R0,B

INC R0

MOV @R0,A

END

OUTPUT:-

Memory 1	
Address:	I:0030H
I:0x30:	02 D0 00 00 00 00 00 00
I:0x4B:	00 00 00 00 00 00 00 00
I:0x66:	00 00 00 00 00 00 00 00
I:0x81:	00 00 00 00 00 00 00 00
I:0x9C:	00 00 00 00 00 00 00 00
I:0xB7:	00 00 00 00 00 00 00 00

RESULT: FACTORIAL OF 5 IS (02D0)H.

