Assignment no 2
Experiment No.1

OBJECTIVE:

Write a program to add two hexadecimal numbers.

Statement:

add two number 05H and 13H and display result in output port 18H.

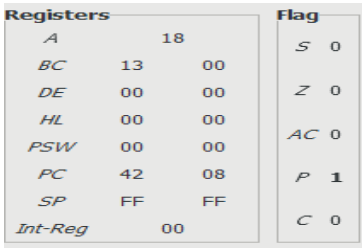
Steps:

- The MVI command moves the 05H and 13H to their respective destination A and B.
- Store the added number (new number) and display in the output port 18H.
- Terminate the program.

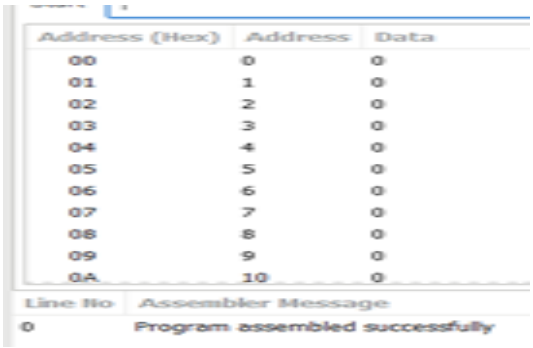
Program: -

```
1   MVI A,05H
2   MVI B,13H
3   ADD B
4   OUT 18H
5   HLT
```

Register: -



Output port:-



Experiment 2

Objectives

Write a program to add two 8-bit hexadecimal numbers.

Statement:

Add numbers from memory location 2050H & 2051H and store result in memory location 2055H.

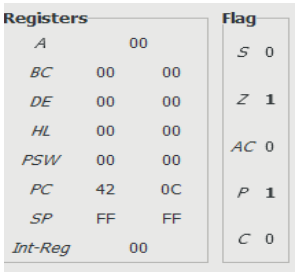
Steps:

- Load the data from the memory location 2051H
- Transfer the data
- Load to accumulator
- Store in 2055H memory location

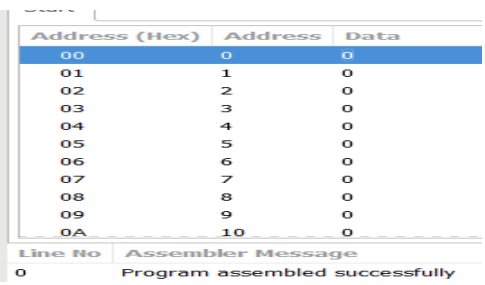
Program:

```
1   LDA 2051H
2   MOV B,A
3   LDA 2050H
4   ADD B
5   STA 2055H
6   HLT
```

Register:



Output port:



Experiment 3

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Objectives

Subtract numbers 25H & 12H and display result in output port o01H.

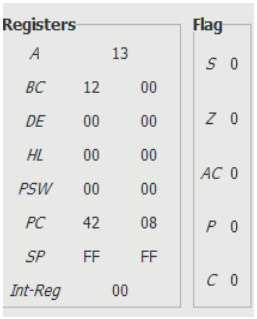
Steps:

- Transfer the data from memory location 25H and 12H respectively in A and B.
- Subtract
- Store the subtracted number (new number) in 01H port.

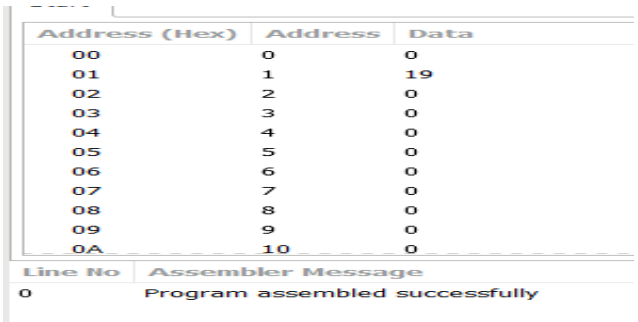
Program:

```
1   MVI A,25H
2   MVI B,12H
3   SUB B
4   OUT 01H
5   HLT
```

Register:



Output port:



Address (Hex)	Address	Data
00	0	0
01	1	19
02	2	0
03	3	0
04	4	0
05	5	0
06	6	0
07	7	0
08	8	0
09	9	0
0A	10	0

Line No	Assembler Message
0	Program assembled successfully

Experiment 4

Objectives

Write a program to subtract two 8-bit numbers.

Statement:

Subtract numbers from memory location 2050H & 2051H and store result in memory location 2055H.

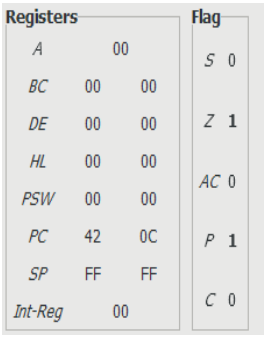
Steps:

- Same as Experiment 1 (only difference is the addition and subtraction).

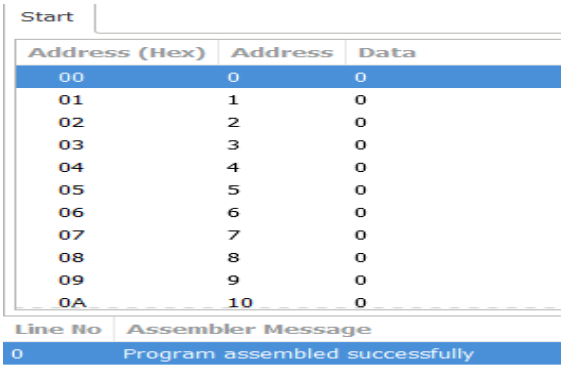
Program:

```
1   LDA 2051H
2   MOV B,A
3   LDA 2050H
4   SUB B
5   STA 2055H
6   HLT
```

Register:



Output port:



Experiment 5

Objectives

Write a program to find 1's complement of a number.

Statement:

Input number from memory location 2013H and store result in memory location 2055H.

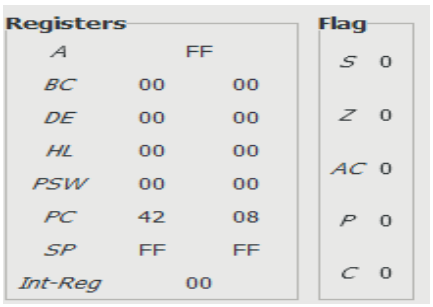
Steps:

- Transfer data from memory location 2013H to Accumulator.
- Complement the contents in the accumulator.
- Store in 2052H memory location.

Program:

```
1    LDA 2013H
2    CMA
3    STA 2052H
4    HLT
```

Register:



Output port: