

## 2. Write an assembly language program for subtraction of two 8-bit data A7 A6 A5 A4 A3 A2 A1 A0 and B7 B6 B5 B4 B3 B2 B1 B0.

**AIM:** To perform the subtraction of two 8 bit numbers using 8085

### ALGORITHM:

1. Start the program by loading the first data into Accumulator.
2. Move the data to a register (B register).
3. Get the second data and load into Accumulator.
4. Subtract the two register contents.
5. Check for carry.
6. If carry is present take 2's complement of Accumulator.
7. Store the value of borrow in memory location.
8. Store the difference value (present in Accumulator) to a memory location.
9. location and terminate the program.

### PROGRAM:

```
LDA 100
MOV B,A
LDA 102
SUB B
STA 104
HLT
```

**GNUSim8085 - 8085 Microprocessor Simulator**

File Reset Assembler Debug Help

Registers

| Register | Value |
|----------|-------|
| A        | 1E    |
| BC       | 14 00 |
| DE       | 00 00 |
| HL       | 00 00 |
| PSW      | 00 00 |
| PC       | 42 0C |
| SP       | FF FF |
| Int-Reg  | 00    |

Flag

| Flag | Value |
|------|-------|
| S    | 0     |
| Z    | 0     |
| AC   | 0     |
| P    | 1     |
| C    | 0     |

Load me at

```
1 LDA 100
2 MOV B,A
3 LDA 102
4 SUB B
5 STA 104
6 HLT
```

Start 100 OK

| Address (Hex) | Address | Data |
|---------------|---------|------|
| 0064          | 100     | 20   |
| 0065          | 101     | 0    |
| 0066          | 102     | 50   |
| 0067          | 103     | 0    |
| 0068          | 104     | 30   |
| 0069          | 105     | 0    |
| 006A          | 106     | 0    |
| 006B          | 107     | 0    |
| 006C          | 108     | 0    |
| 006D          | 109     | 0    |

I/O Ports

0 - + 00

Update Port Value

Memory

0 - + 00

Update Memory

Line No Assembler Message

0 Program assembled successfully

Simulator: Idle

**OBSERVATION:**

INPUT: 20 (100)

50 (102)

OUTPUT: 30(104)

**RESULT:**

Thus the program to subtract two 8-bit numbers was executed.