

4. Write an assembly language program for subtracting two 16-bit data using 8086 process.

AIM:

To perform addition of two 16 bit numbers using 8086 prosessor.

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
9. location and terminate the program.

PROGRAM:

```
LHLD 2500
XCHG
LHLD 2502
MOV A,E
SUB L
MOV L,A
MOV A,D
ADC H
MOV H,A
SHLD 2504
HLT
```

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers

A	00
BC	00 00
DE	00 1E
HL	00 0A
PSW	00 00
PC	42 11
SP	FF FF
Int-Reg	00

Flag

S	0
Z	1
AC	0
P	1
C	0

Load me at

```

1  LHLD 2500
2  XCHG
3  LHLD 2502
4  MOV A,E
5  SUB L
6  MOV L,A
7  MOV A,D
8  ADC H
9  MOV H,A
10 SHLD 2504
11 HLT

```

Start 250 OK

Address (Hex)	Address	Data
09C4	2500	30
09C5	2501	0
09C6	2502	20
09C7	2503	0
09C8	2504	10
09C9	2505	0
09CA	2506	0
09CB	2507	0
09CC	2508	0
09CD	2509	0

Decimal - Hex Conversion

Decimal 0 Hex 0

To Hex To Dec

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: 30(2500)
20(2052)
Output: 10(2054)

RESULT:

Thus the program to subtraction two 16-bit numbers was executed successfully.