

16-BIT SUBTRACTION

EXP NO: 6

AIM: To write an assembly language program to implement 16-bit subtraction using 8085 processor.

ALGORITHM:

- 1) Start the program by loading a register pair with address of 1st number.
- 2) Copy the data to another register pair.
- 3) Load the second number to first register pair.
- 4) Subtract the two register pair contents.
- 5) Store the value of difference and borrow in memory locations.
- 6) End.

PROGRAM:

```
LHLD 2050
XCHG
LHLD 2052
MVI C,00
MOV A, E
SUB L
STA 2054
MOV A, D
SUB H
STA 2055
HLT
```

INPUT & OUTPUT

The screenshot displays the GNUSim8085 - 8085 Microprocessor Simulator interface. The main window shows the assembly program being executed, with the following instructions: LHLD 2050, XCHG, LHLD 2052, MVI C, 00, MOV A, E, SUB L, STA 2054, MOV A, D, SUB H, STA 2055, and HLT. The program is loaded at address 2050.

The left panel shows the Registers window, displaying the status of the 8085 registers (A, B, C, D, E, H, L, P, S, Z, AC, P, C) and the Flag register. The right panel shows the Memory window, displaying the memory contents at addresses 2050 to 205F. The memory contents are as follows:

Address (Hex)	Address	Data
0802	2050	98
0803	2051	76
0804	2052	54
0805	2053	32
0806	2054	44
0807	2055	44
0808	2056	0
0809	2057	0
080A	2058	0
080B	2059	0
080C	2060	0
080D	2061	0
080E	2062	0
080F	2063	0

The bottom panel shows the I/O Ports window, displaying the status of the I/O ports (0, 1, 2, 3) and the I/O ports (0, 1, 2, 3). The bottom status bar shows the simulator is idle, with a temperature of 32°C and a date of 04-09-2024.

RESULT: Thus the program was executed successfully using 8085 processor simulator.