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

Start	2050		OK

Address (Hex)	Address	Data
0802	2050	25
0803	2051	16
0804	2052	15
0805	2053	9
0806	2054	10
0807	2055	7
0808	2056	0
0809	2057	0
080A	2058	0
080B	2059	0
080C	2060	0
080D	2061	0

File   Reset   Assembler   Debug   Help

Registers
A	07	
BC	22	00
DE	10	19
HL	09	0F
PSW	00	00
PC	42	14
SP	FF	FF
Int-Reg	00	

Flag
S	0
Z	0
AC	0
P	0
C	0

Decimal - Hex Convertion

Decimal   Hex

0   0

To Hex   To Dec

I/O Ports

0   —   +   00

Update Port Value

Memory

0   —   +   00

Update Memory

Load me at

```
1    LHLD 2050
2         XCHG
3         LHLD 2052
4         MVI C,00
5         MOV A, E
6         SUB L
7         STA 2054
8         MOV A, D
9         SUB H
10        STA 2055
11        HLT
```

Data   Stack   KeyPad   Memory   I/O Ports

Start   2050   OK

Address (Hex)	Address	Data
0802	2050	25
0803	2051	16
0804	2052	15
0805	2053	9
0806	2054	10
0807	2055	7
0808	2056	0
0809	2057	0
080A	2058	0
080B	2059	0
080C	2060	0
080D	2061	0

Line No	Assembler Message
0	Program assembled successfully

Simulator: Idle

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