

16-BIT MULTIPLICATION

EXP NO: 7

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

ALGORITHM:

- 1) Load the first data in HL pair.
- 2) Move content of HL pair to stack pointer.
- 3) Load the second data in HL pair and move it to DE.
- 4) Make H register as 00H and L register as 00H.
- 5) ADD HL pair and stack pointer.
- 6) Check for carry if carry increment it by 1 else move to next step.
- 7) Then move E to A and perform OR operation with accumulator and register D.
- 8) The value of operation is zero, then store the value else go to step 3.

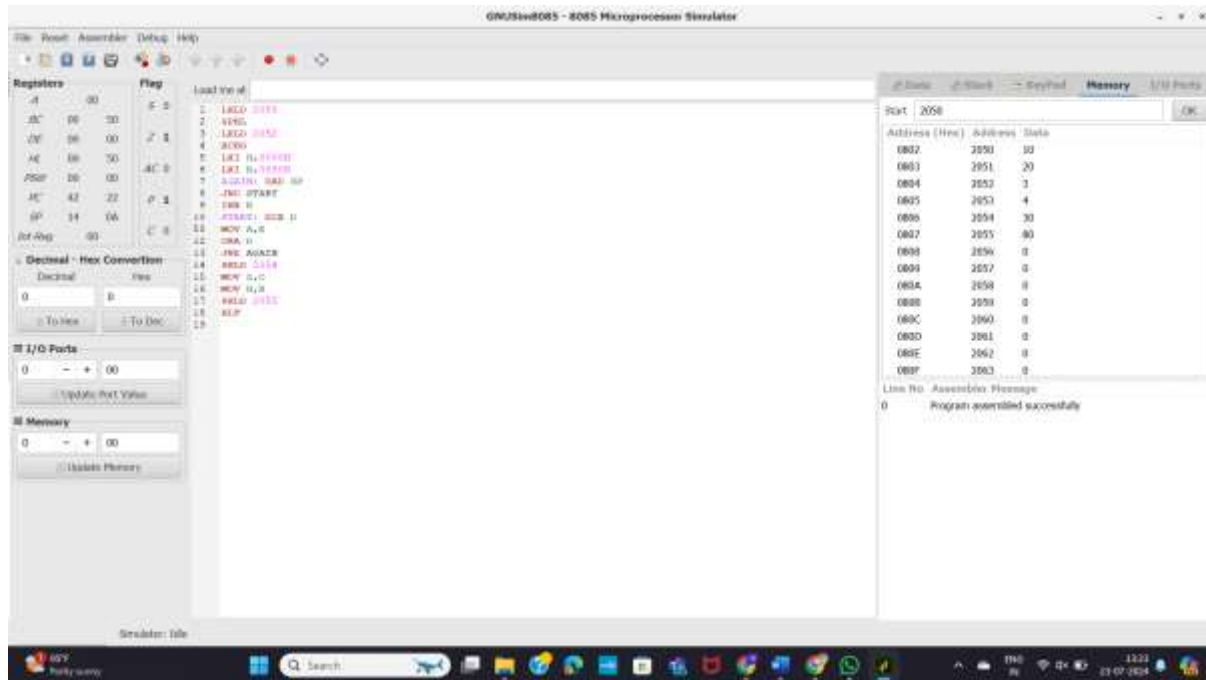
PROGRAM:

```
LHLD 2050
SPHL
LHLD 2052
XCHG
LXI H,0000H
LXI B,0000H
AGAIN: DAD SP
JNC START
INX B
START: DCX D
MOV A,E
ORA D
JNZ AGAIN
SHLD 2054
MOV L,C
MOV H,B
SHLD 2055
HLT
```

INPUT:

Address (Hex)	Address	Data
0802	2050	10
0803	2051	20
0804	2052	3
0805	2053	4
0806	2054	30
0807	2055	80
0808	2056	0

OUTPUT:



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