16-BIT MULTIPLICATION

EXP7:

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.

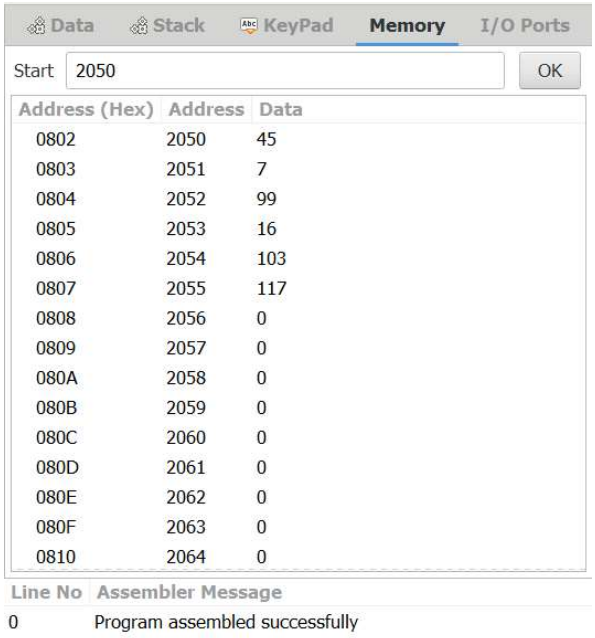
7) Then move E to A and perform OR operation with accumulator and register D.

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:



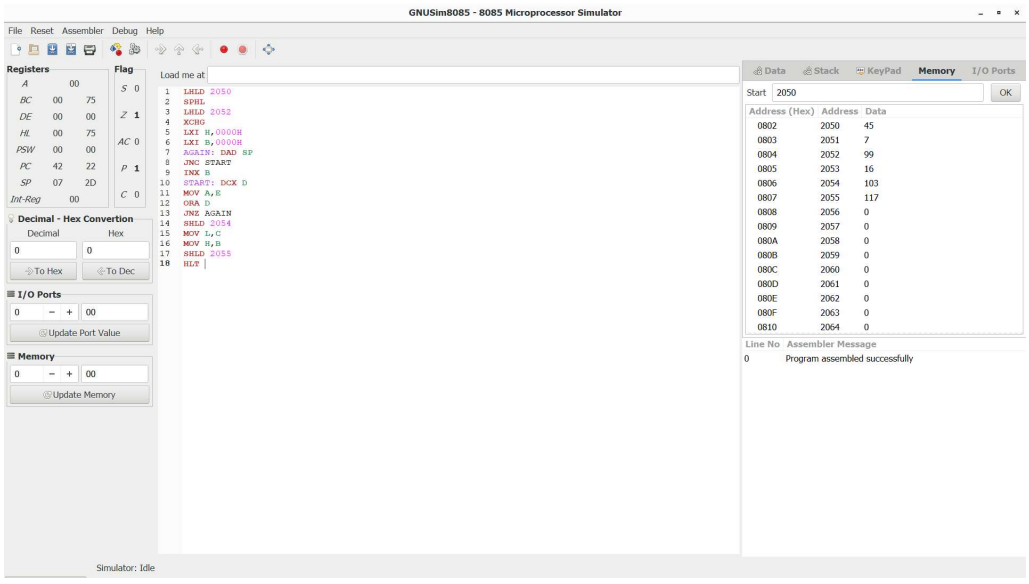
Data | Stack | KeyPad | Memory | I/O Ports

Start 2050 OK

Address (Hex)	Address	Data
0802	2050	45
0803	2051	7
0804	2052	99
0805	2053	16
0806	2054	103
0807	2055	117
0808	2056	0
0809	2057	0
080A	2058	0
080B	2059	0
080C	2060	0
080D	2061	0
080E	2062	0
080F	2063	0
0810	2064	0

Line No	Assembler Message
0	Program assembled successfully

OUTPUT:



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