8-BIT MULTIPLICATION

EXP NO: 3

AIM: To write an assembly language program to implement 8-bit multiplication using 8085 processor.

ALGORITHM:

1) Start
the program by loading a register pair with the address of memory location.

2) Move
the data to a register.

3) Get
the second data and load it into the accumulator.

4) Add
the two register contents.

5) Increment
the value of the carry.

6) Check
whether the repeated addition is over.

7) Store
the value of product and the carry in the memory location.

8) Halt.

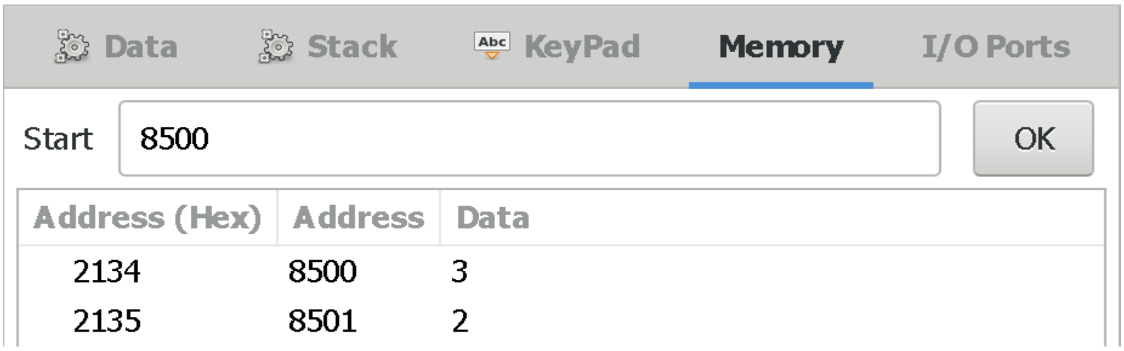
PROGRAM:

```
LDA 8500
MOV B, A
LDA 8501
MOV C, A
CPI 00
JZ LOOP
XRA A
LOOP1: ADD B
DCR C
JZ LOOP
JMP LOOP1
```

LOOP: STA 8502

RST
1

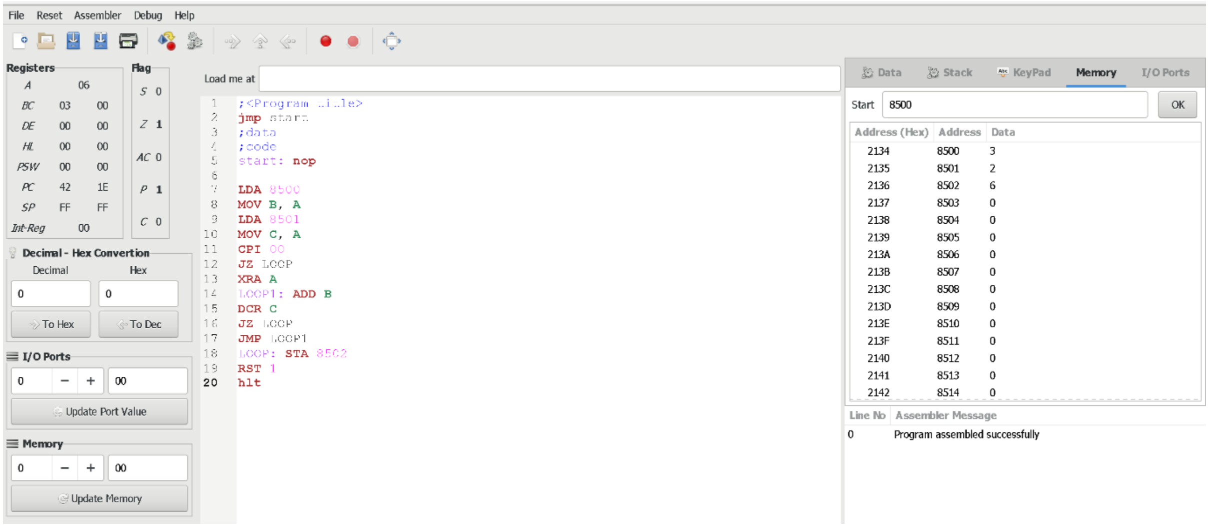
INPUT:



Start 8500

Address (Hex)	Address	Data
2134	8500	3
2135	8501	2

OUTPUT:



Registers

A	06	
BC	03	00
DE	00	00
HL	00	00
PSW	00	00
PC	42	1E
SP	FF	FF
Int-Reg	00	

Flag

S	0
Z	1
AC	0
P	1
C	0

Decimal - Hex Convertion

Decimal 0 Hex 0

I/O Ports 0 00

Memory 0 00

Load me at

```
;<Program title>
jmp start
;data
;code
start: nop

LDA 8500
MOV B, A
LDA 8501
MOV C, A
CPI 00
JZ LOOP
XRA A
LOOP1: ADD B
DCR C
JZ LOOP
JMP LOOP1
LOOP: STA 8502
RST 1
hlt
```

Start 8500

Address (Hex)	Address	Data
2134	8500	3
2135	8501	2
2136	8502	6
2137	8503	0
2138	8504	0
2139	8505	0
213A	8506	0
213B	8507	0
213C	8508	0
213D	8509	0
213E	8510	0
213F	8511	0
2140	8512	0
2141	8513	0
2142	8514	0

Line No	Assembler Message
0	Program assembled successfully

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