

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


INPUT:

 Data

 Stack

 Keypad

Memory

 I/O Ports

Start

OK

Address (Hex)	Address	Data
2134	8500	8
2135	8501	9
2136	8502	72
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

OUTPUT:

File

Reset

Assembler

Debug

Help

Load me at:

Registers

A	48
BC	08 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 Conversion

Decimal

Hex

0

0

To Hex

To Dec

I/O Ports

0

-

+

00

Update Port Value

Memory

0

-

+

00

Update Memory

2134

8500

8

2135

8501

9

2136

8502

72

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

Line No

Assembler Message

0

Program assembled successfully

6

;data

7

8

9

;code

10

start: nop

11

LDA 8500

12

13

14

MOV B, A

15

16

17

LDA 8501

18

19

20

MOV C, A

21

22

23

CPI 00

24

25

26

JZ LOOP

27

28

29

XRA A

30

31

32

LOOP1: ADD B

33

34

35

DCR C

36

37

38

JZ LOOP

39

40

41

JMP LOOP1

42

43

44

LOOP: STA 8502

45

46

47

RST 1

48

49

hlt

2134

8500

8

2135

8501

9

2136

8502

72

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

Line No

Assembler Message

0

Program assembled successfully

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