

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

OUTPUT:

GNUSim8085 - 8085 Microprocessor Simulator

FileResetAssemblerDebugHelp

Registers

A06

BC0200

DE0000

HL0000

PSW0000

PC421E

SPFFFF

Int-Reg00

Flag

S0

Z1

AC0

P1

C0

Decimal - Hex Conversion

Decimal

0

Hex

0

To Hex

To Dec

I/O Ports

0

-

+

00

Update Port Value

Memory

0

-

+

00

Update Memory

Load me at

1<Program title>

2

3

4jmp start

5

6idata

7

8

9jcode

10start: nop

11LDA 8500

12MOV B, A

13LDA 8501

14MOV C, A

15CPI 00

16JZ LOOP

17XRA A

18LOOP1: ADD B

19DCR C

20JZ LOOP

21JMP LOOP1

22LOOP: STA 8502

23hlt

DataStackKeyPadMemoryI/O Ports

Start8500

OK

Address (Hex)AddressData

213485002

213585013

213685026

213785030

213885040

213985050

213A85060

213B85070

213C85080

213D85090

213E85100

213F85110

214085120

214185130

Line NoAssembler Message

0Program assembled successfully

Simulator: Idle

30°C
Mostly cloudy

Search

ENG
IN

10:06
16-10-2023

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