

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

Address (Hex)	Address	Data
2134	8500	10
2135	8501	4

OUTPUT

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers

A	28	S	0
BC	0A 00	Z	1
DE	00 00	AC	0
HL	00 00	P	1
PSW	00 00	C	0
PC	42 1E		
SP	FF FF		
Int-Reg	00		

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: jmp start
3: ;data
4: ;code
5: start: nop
6: LDA 8500
7: MOV B, A
8: LDA 8501
9: MOV C, A
10: CPI 00
11: JZ LOOP
12: XRA A
13: LOOP1: ADD B
14: DCR C
15: JZ LOOP
16: JMP LOOP1
17: LOOP: STA 8502
18: RST 1
19: hlt
```

Start: 8500

Address (Hex)	Address	Data
2134	8500	10
2135	8501	4
2136	8502	40
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

Simulator: Idle

30°C Mostly cloudy

Search

ENG IN

09:40 AM 16-10-2023

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