

8-BIT DIVISION

EXP NO: 4

AIM: To write an assembly language program to implement 8-bit division 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) Subtract the two register contents.
- 5) Increment the value of the carry.
- 6) Check whether the repeated subtraction is over.
- 7) Store the value of quotient and the remainder in the memory location.
- 8) Halt.

PROGRAM:

```
LDA 8501
MOV B, A
LDA 8500
MVI C,00
LOOP:  CMP B
      JC LOOP1
      SUB B
      INR C
      JMP LOOP
LOOP1: STA 8502
      MOV A, C
      STA 8503
      RST 1
```

INPUT & OUTPUT:

Start	8500	OK
Address (Hex)	Address	Data
2134	8500	44
2135	8501	34
2136	8502	10
2137	8503	1
2138	8504	0
2139	8505	0
213A	8506	0
213B	8507	0
213C	8508	0
213D	8509	0
213E	8510	0
213F	8511	0

GNUSim8085 - 8085 Microprocessor Simulator

File Reset Assembler Debug Help

Registers

A	01
BC	22 01
DE	00 00
HL	00 00
PSW	00 00
PC	42 1A
SP	FF FF
Int-Reg	00

Flag

S	1
Z	0
AC	0
P	1
C	1

Load me at:

```

1  LDA 8501
2      MOV B, A
3      LDA 8500
4      MVI C, 00
5  LOOP:  CMP B
6          JC LOOP1
7          SUB B
8          INR C
9          JMP LOOP
10 LOOP1: STA 8502
11          MOV A, C
12          STA 8503
13          RST 1

```

Memory

Start:

Address (Hex)	Address	Data
2134	8500	44
2135	8501	34
2136	8502	10
2137	8503	1
2138	8504	0
2139	8505	0
213A	8506	0
213B	8507	0
213C	8508	0
213D	8509	0
213E	8510	0
213F	8511	0

I/O Ports

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Memory

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Line No Assembler Message

0 Program assembled successfully

Simulator: Idle

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