

16-BIT DIVISION

EXP NO: 8

AIM: To write an assembly language program to implement 16-bit divided by 8-bit using 8085 processor.

ALGORITHM:

- 1) Read dividend (16 bit)
- 2) Read divisor
- 3) count <- 8
- 4) Left shift dividend
- 5) Subtract divisor from upper 8-bits of dividend
- 6) If CS = 1 go to 9
- 7) Restore dividend
- 8) Increment lower 8-bits of dividend
- 9) count <- count - 1
- 10) If count = 0 go to 5
- 11) Store upper 8-bit dividend as remainder and lower 8-bit as quotient
- 12) Stop

PROGRAM:

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

INPUT:

Data	Stack	KeyPad	Memory	I/O Ports
Start 8500				
Address (Hex) Address Data				
2134	8500	2		
2135	8501	4		
2136	8502	2		
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		
Line No Assembler Message				
0	Program assembled successfully			

OUTPUT:

Data	Stack	KeyPad	Memory	I/O Ports
Start 8500				
Address (Hex) Address Data				
2134	8500	2		
2135	8501	4		
2136	8502	2		
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		
Line No Assembler Message				
0	Program assembled successfully			

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