

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:

The screenshot displays the GNUSim8085 - 8085 Microprocessor Simulator interface. The main window shows the assembly program being executed. The registers window on the left shows the state of the 8085 registers: A (04), BC (10 00), DE (00 00), HL (00 00), PSW (00 00), PC (42 1B), SP (FF FF), and Int-Reg (00). The flag window shows the status of the flags: S (1), Z (0), AC (0), P (0), and C (1). The memory window on the right shows the memory contents at addresses 8500 to 8511. The assembly program is listed in the center, and the output window at the bottom shows the message "Program assembled successfully".

Address (Hex)	Address	Data
2134	8500	4
2135	8501	16
2136	8502	4
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

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