

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:

Address (Hex)	Address	Data
2134	8500	20
2135	8501	10

OUTPUT:

The screenshot displays the GNUSim8085 - 8085 Microprocessor Simulator interface. The main window is divided into several sections:

- Registers:** Shows the state of various registers. The PC (Program Counter) is at 42, and the SP (Stack Pointer) is at FF. The PSW (Program Status Word) is 00.
- Flags:** Shows the status of various flags. The S (Sign) flag is 0, Z (Zero) is 0, AC (Auxiliary Carry) is 0, P (Parity) is 1, and C (Carry) is 0.
- Decimal - Hex Conversion:** A section for converting between decimal and hexadecimal values.
- I/O Ports:** A section for managing I/O ports.
- Memory:** A section for managing memory.
- Assembly Code:** A central area for writing and executing assembly code. The code includes instructions like `jmp start`, `start: nop`, `LDA 8500`, `MOV B,A`, `LDA 8501`, `ADD B`, `STA 8502`, `RST 1`, and `hlt`.
- Memory Dump:** A table showing the memory contents. It lists addresses from 2134 to 213F, corresponding to memory locations 8500 to 8511. The data values are 20, 10, 30, 0, 0, 0, 0, 0, 0, 0, 0, and 0 respectively.
- Assembler Message:** A section for displaying messages from the assembler. It shows a message: "Program assembled successfully".

The simulator is currently in the "Idle" state.

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