

# NAME : MD WASIF || ENROLL : 19UICS002

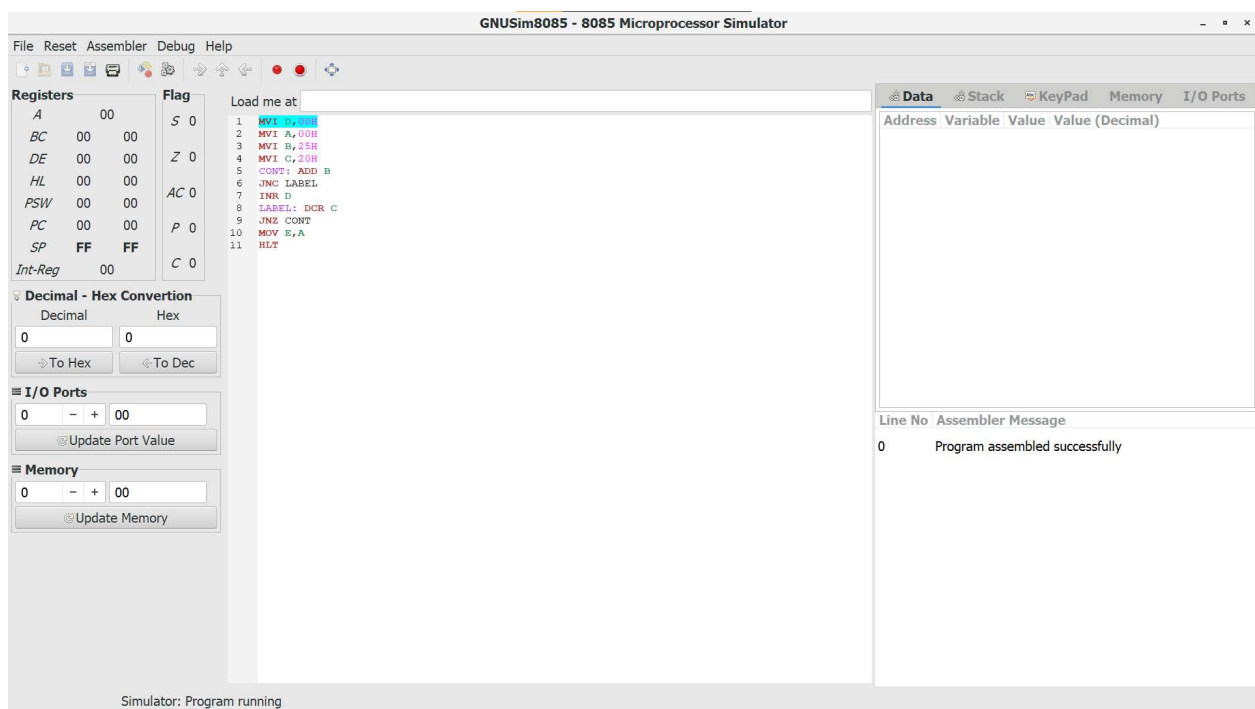
## SUB : CAO LAB || ASSIGNMENT : 4

### 1. Write a program in 8085 for Multiplication of two 8-bit numbers (with carry)

**Aim :** Multiplication of two 8-bit numbers(with carry)

**Algorithm:**

- 1) Initialize the accumulator with 0 and register with 0
- 2) Load the numbers to be multiplied in separate registers.
- 3) Add either of the numbers in the accumulator.
- 4) Check for any carry, if carry is generated , add/increment content of register D.
- 5) If no carry, then decrement the other number.
- 6) Keep repeating step 3-5 unless the number being decremented becomes zero.
- 7) Move the result to desired register/location
- 8) Terminate



**Observation :**

**FF (4150)**

**Input:**

**FF (4151)**

**01 (4152)**

**Output:**  
**FE (4153)**

**Result:**

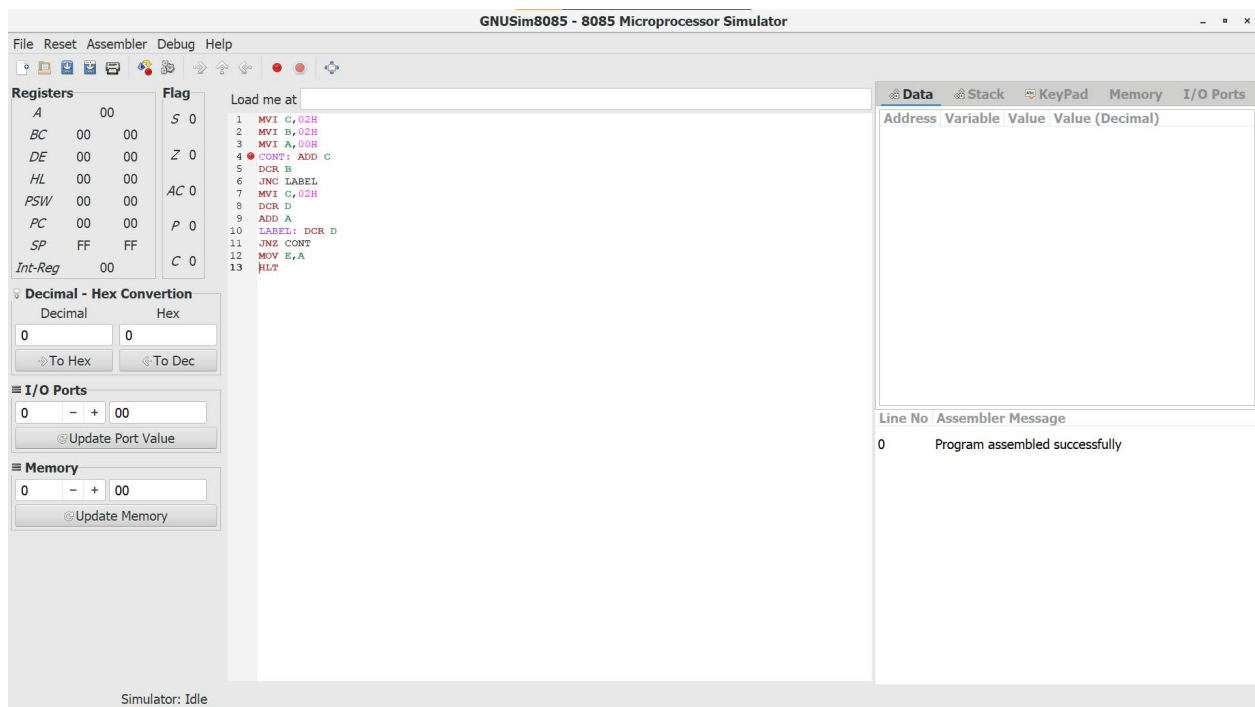
Thus, the multiplication of two 8-bit numbers without carry was executed.

**2. Write a program in 8085 for Multiplication of three 8-bit numbers (without carry)**

**Aim: Multiply three 8-bits numbers(without carry)**

**Algorithm:**

- 1) Initialize accumulator with 0.
- 2) Multiply the first two data values like the first case.
- 3) Load the third data value in another register.
- 4) Decrement the value of the third data at the same time keep adding the contents of the accumulator with itself  $(A) \leftarrow (A) + (A)$ .
- 5) Repeat step 4 until the third data value becomes zero.
- 6) Move the result to the desired location.
- 7) Terminate the program.



### Observation:

Input :	B	C	D	output :	A	B	C	D	E
	02	02	02		08	00	02	00	08

### Result:

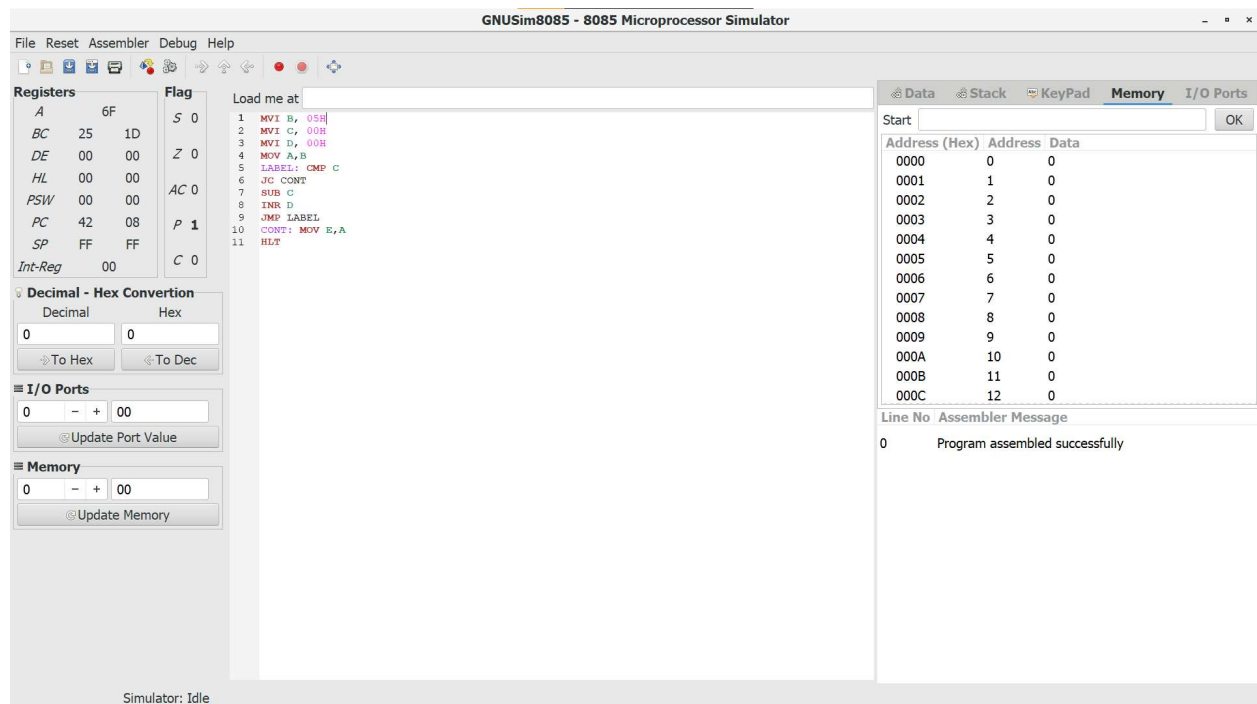
Thus, multiplication of three 8 bit numbers was executed.

### 3. Write a program in 8085 for Division of two numbers using registers.

**Aim:** Division of 2 numbers using registers.

#### Algorithm:

- 1) Load the two numbers in separate registers.
- 2) Initialize another register to 0, which will store the result.
- 3) Move the first data to the accumulator.
- 4) Compare it with the other data.
- 5) If no carry is generated, subtract the second data value and at the same time increment register that will store the result.
- 6) Repeat the step 5 until a carry/borrow is generated.
- 7) The result is generated.
- 8) Terminate the program.



**Observation:**

**Input:**

F (4150)

FF (4251)

**Output:**

01 (4152) ---- Remainder

FE (4153) ---- Quotient

**Result:**

Thus , the division of two 8 -bit numbers was executed successfully.