CAO LAB

Experiment : 2

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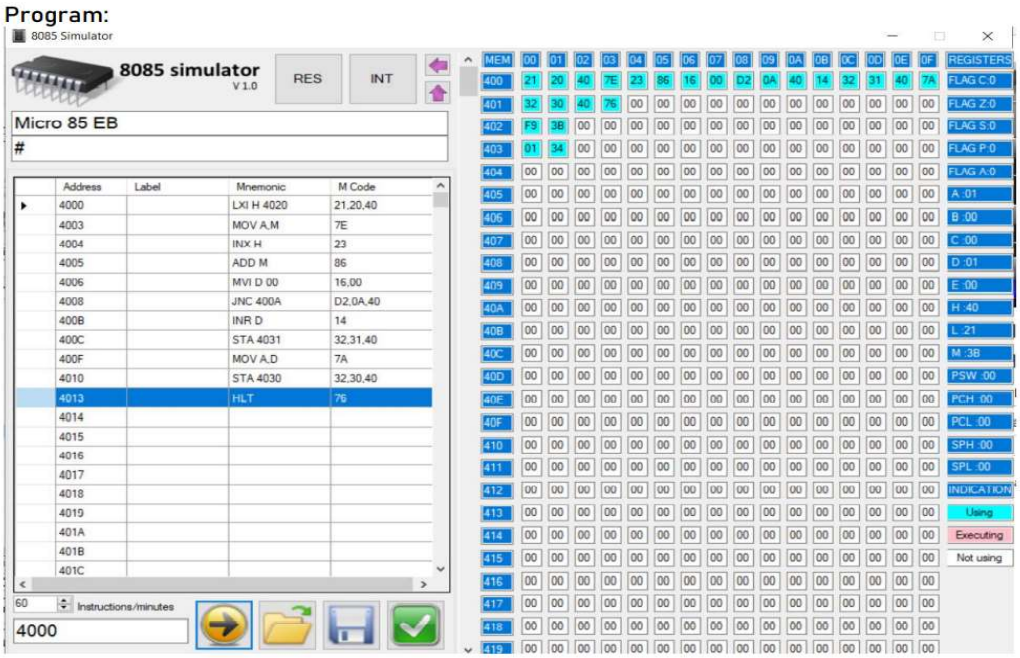
1. Addition of two 8 bit numbers using Memory Location (With Carry)

Algorithm:

1. Load data from memory into register or register pair.
2. Move data from register into accumulator.
3. Add the data to accumulator.
4. Initialize one register with 00 for carry.
5. Jump the next step if no carry.
6. Increment carry register by 1.
7. Store data from accumulator in separate memory location.
8. Move carry to accumulator and Store data from accumulator in separate memory location.
9. Terminate the program.

Program:



Observation:

Input: F9(in 4020), 3B(in 4021)

Output: 34(stored in 4031) and carry 01(stored in 4030).

Result:

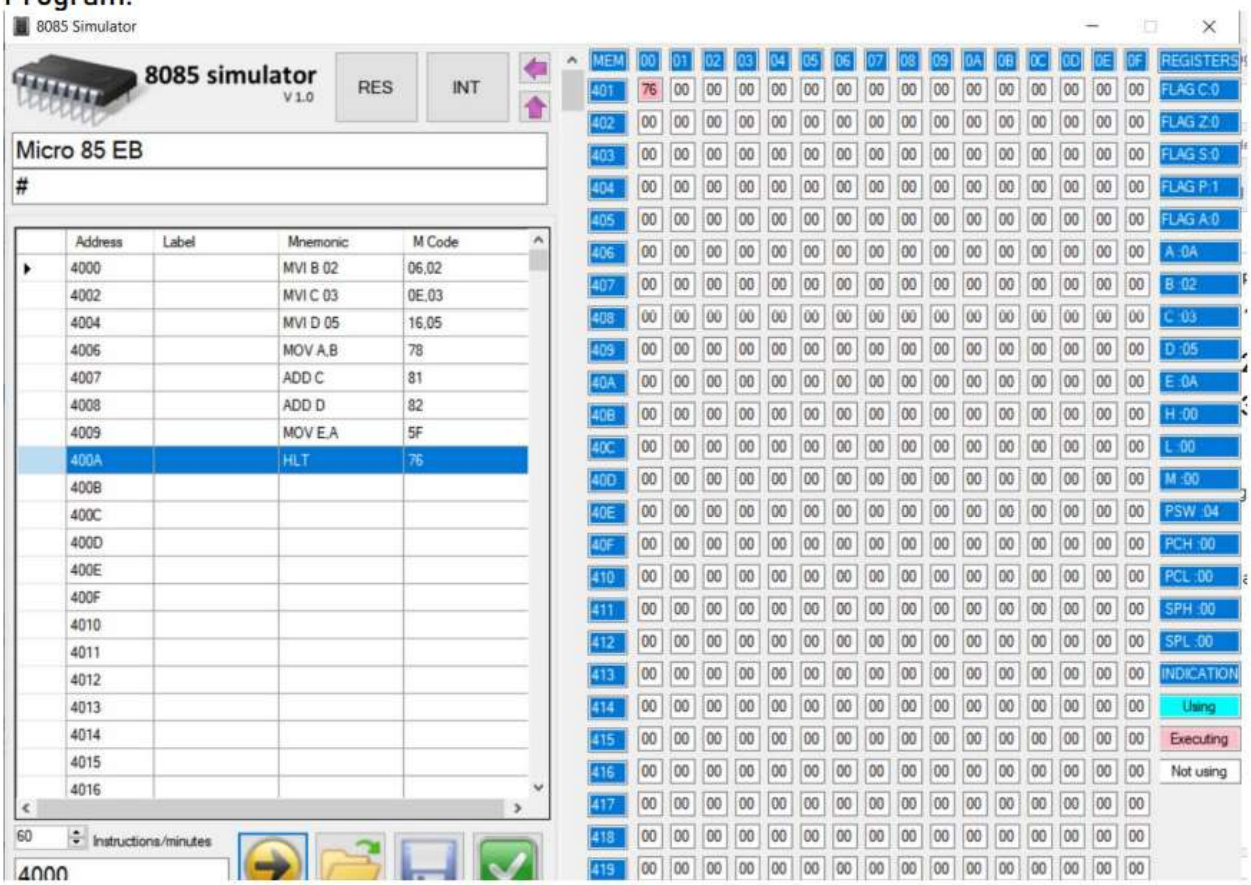
Thus the addition of two 8 bit numbers from memory with carry is executed.

2. Addition of two 8 bit numbers using Register (With Carry)

Algorithm :

1. Initialize data into two registers.
2. Move data from one register to accumulator.
3. Add the other register to accumulator.
4. Store date from accumulator in seperate register.
5. Terminate the program.

Program:



Observaions :
Input: 02(in B) and 03(in C)
Output : 0A(stored in A and E)

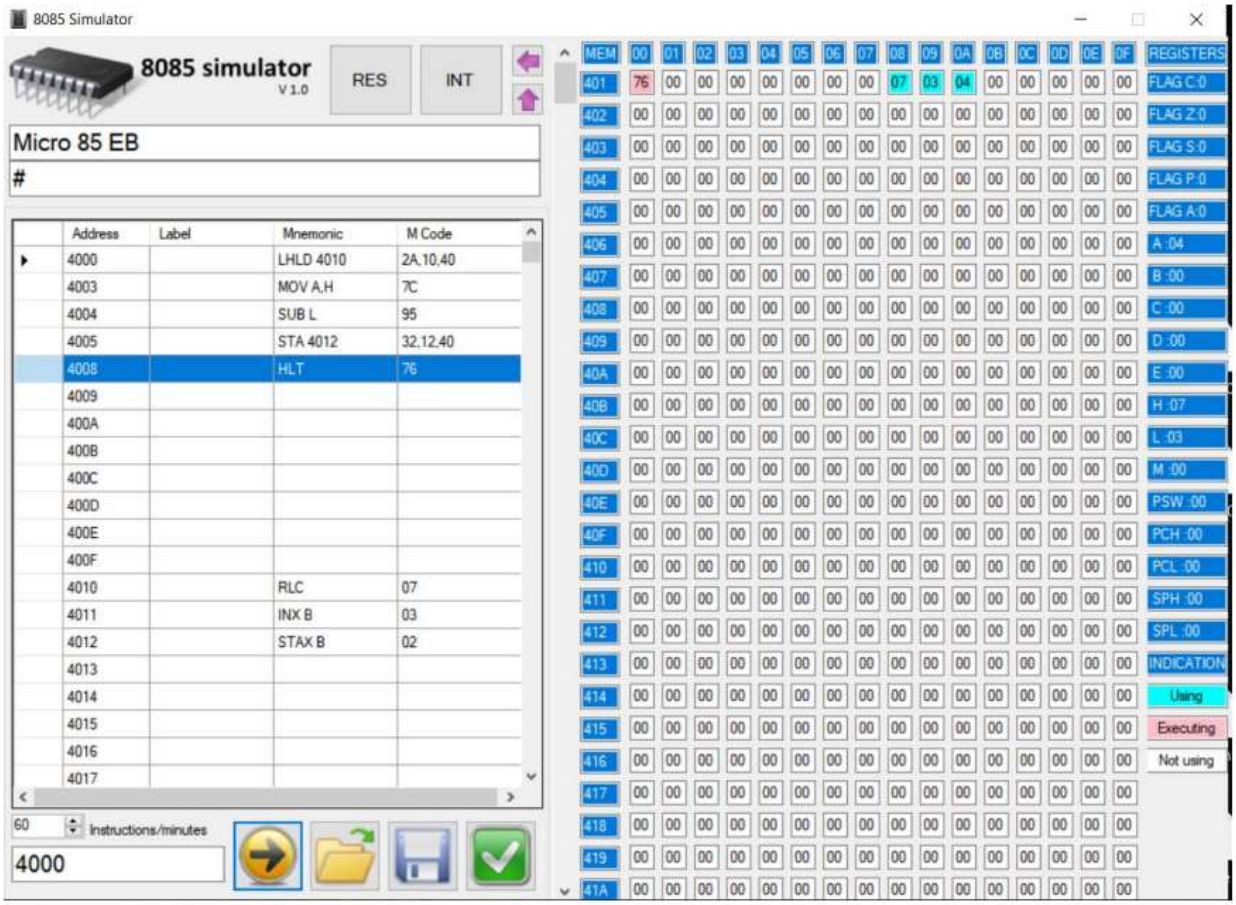
Result:
Thus the addition of two 8 bits numbers in register is executed.

3. Write a program to subtract two 8-bit numbers using Memory location

Algorithm:

1. Load data from memory into register or register pair.
2. Move data from one register into accumulator.
3. Subtract the other register from accumulator.
4. Store data from accumulator in separate memory location.
5. Terminate the program.

Program:



Observation:
Input: 07(in 4010), 03(in 4011)
Output: 04(stored in 4012)

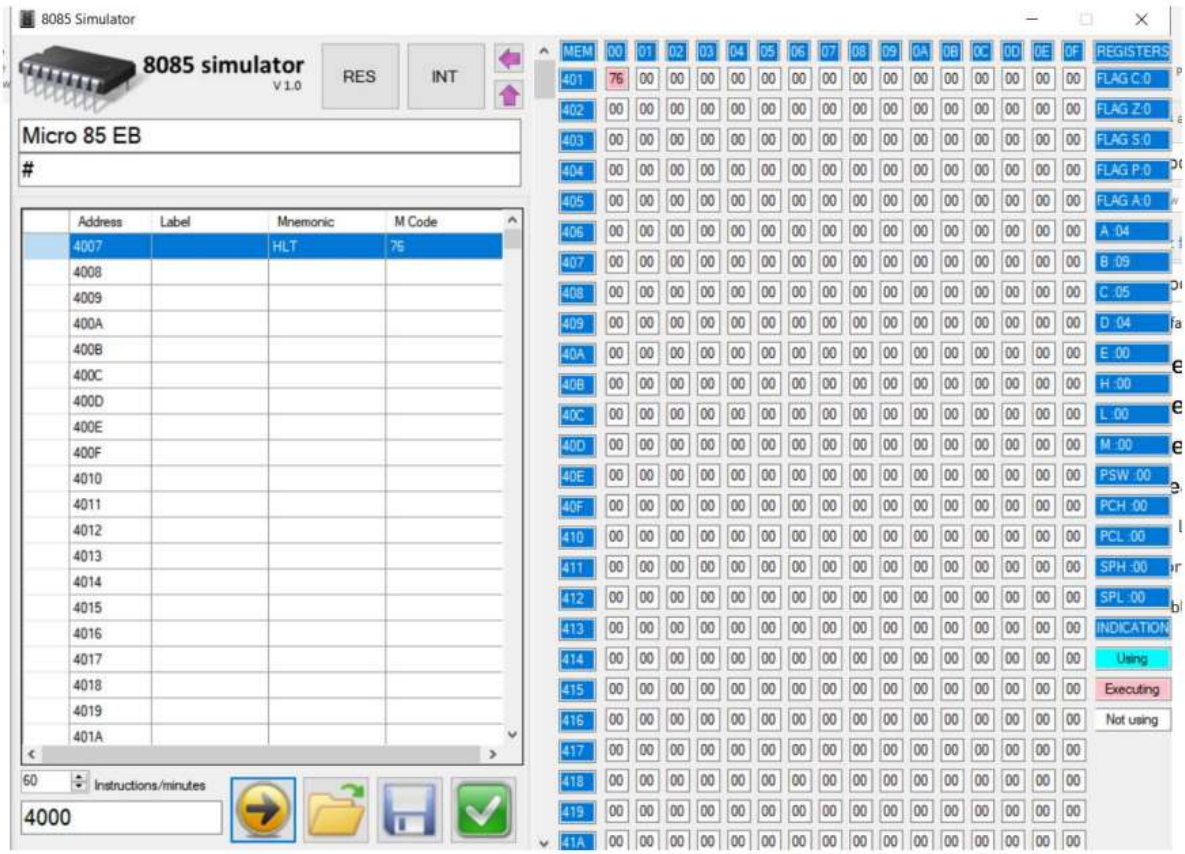
Result:
Thus the subtraction of two 8 bit numbers from memory is executed.

4. Write a program to subtract two 8-bit numbers using Register.

Algorithm:

1. Initialize data into two registers.
2. Move data from one register into accumulator.
3. Subtract the other register from accumulator.
4. Store data from accumulator in separate register.
5. Terminate the program.

Program:



Observation:
Input: 09(in B), 05(in C)
Output: 04(stored in A and D)

Result:
Thus the subtraction of two 8 bit numbers from registers is executed.