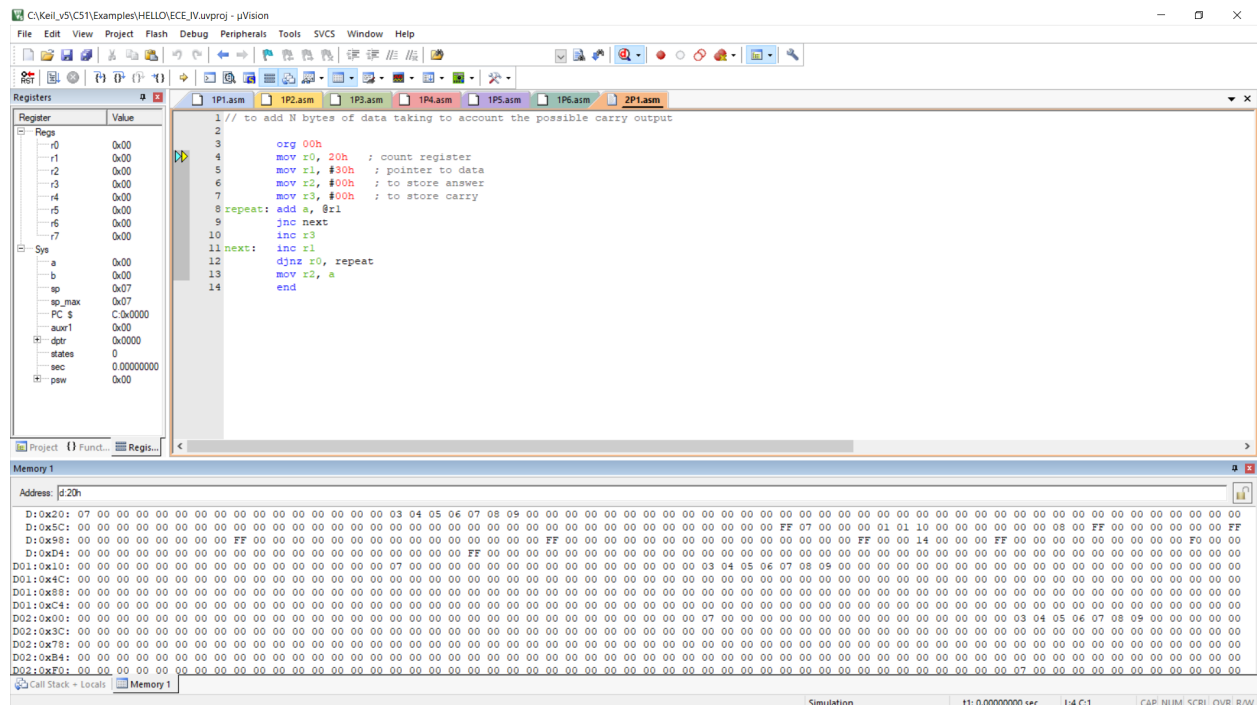


## SET 2

Write an 8051 assembly level program to add 'N' bytes of data taking into account the possible carry output

Before execution:

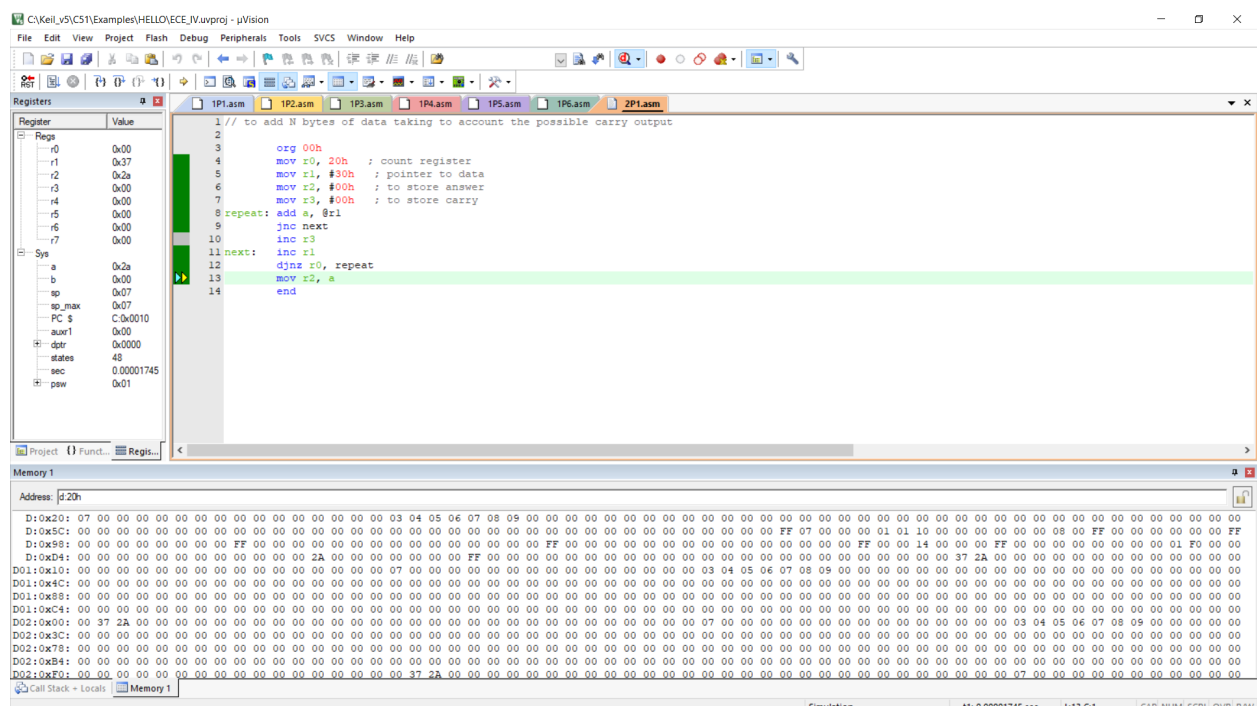


The screenshot shows the Keil uVision IDE with the following details:

- Registers:** The register window on the left shows the initial state of the 8051 registers. Notable values include PC: 00000000, SP: 00000000, and the carry flag (CY) at bit 7 of the PSW register.
- Assembly Code:** The main window displays the following assembly code:

```
1 // to add N bytes of data taking into account the possible carry output
2
3 org 00h
4 mov r0, 20h ; count register
5 mov r1, #30h ; pointer to data
6 mov r2, #00h ; to store answer
7 mov r3, #00h ; to store carry
8 repeat: add a, @r1
9 jnc next
10 inc r3
11 next: inc r1
12 djnz r0, repeat
13 mov r2, a
14 end
```
- Memory:** The memory window at the bottom shows the initial state of memory, with most locations containing 00h.

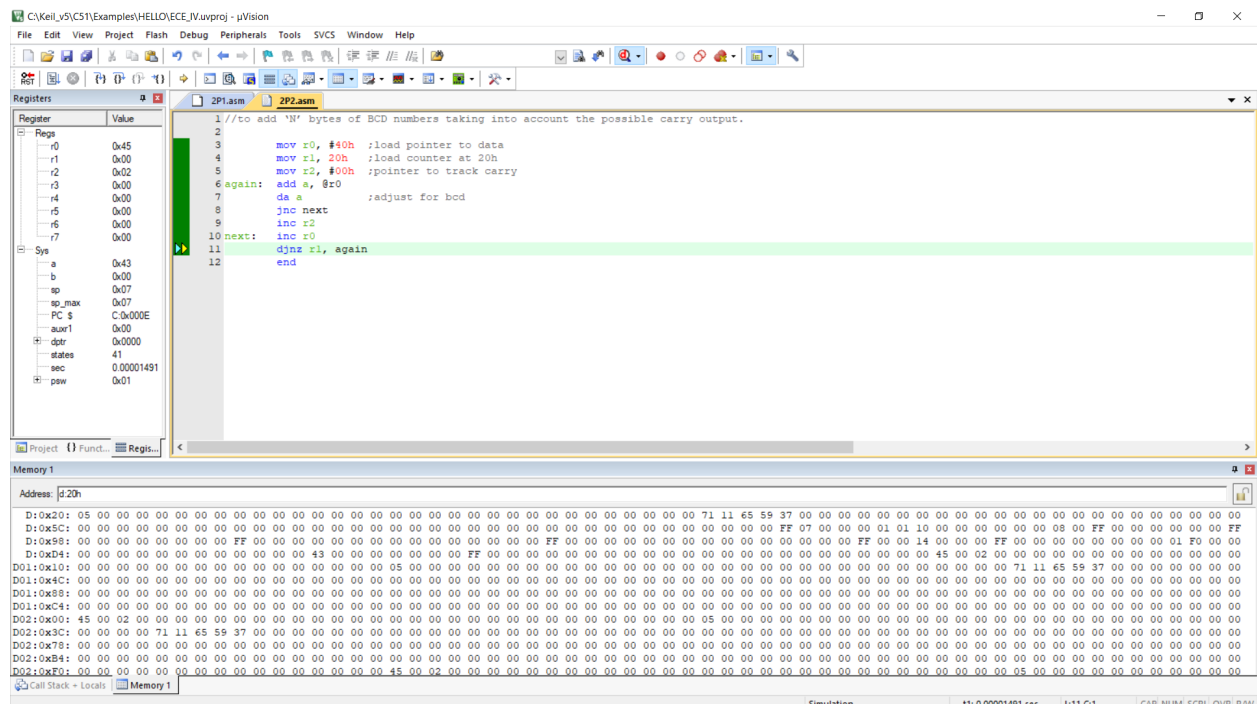
After execution:



The screenshot shows the Keil uVision IDE after the assembly program has been executed. The state of the registers and memory is as follows:

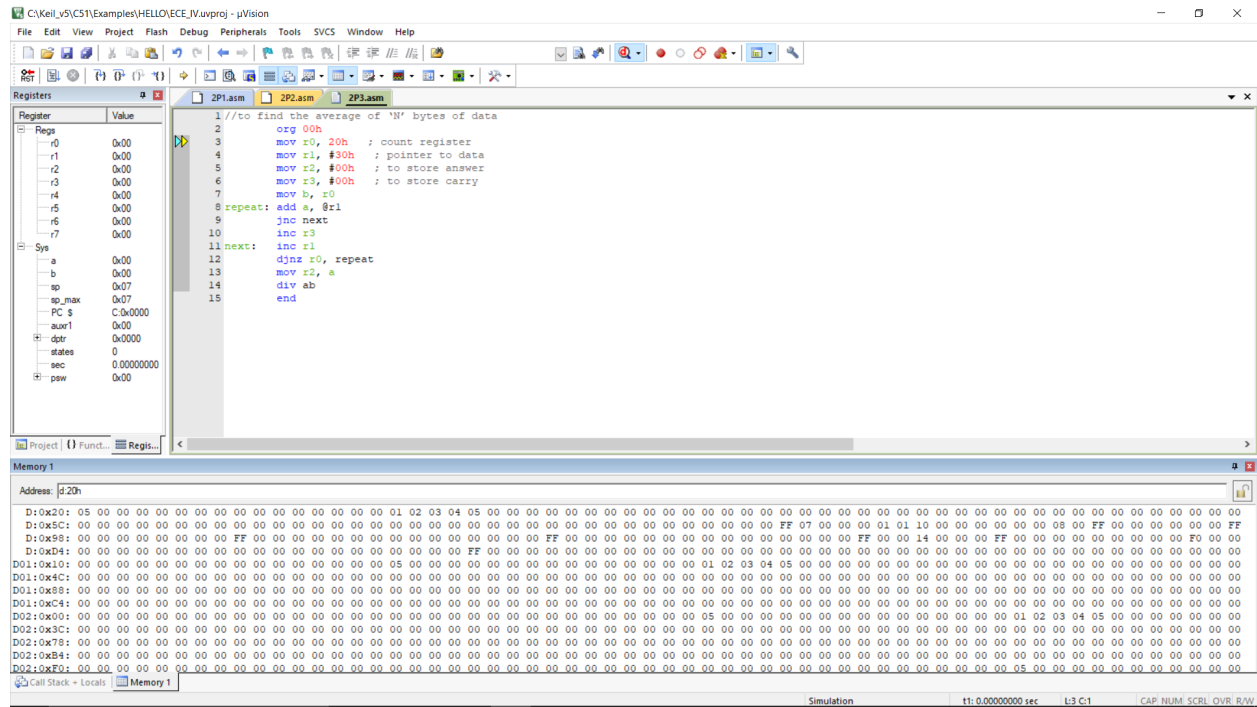
- Registers:** The register window shows the state after execution. The PC register is now 00000010, and the SP register is 00000010. The carry flag (CY) at bit 7 of the PSW register is now 1.
- Assembly Code:** The assembly code is the same as in the previous screenshot.
- Memory:** The memory window shows the state after execution. The memory location 00000010 now contains 00h, and the memory location 00000011 now contains 00h.

Before execution:



Write an 8051 assembly level program to find the average of 'N' bytes of data

Before execution:

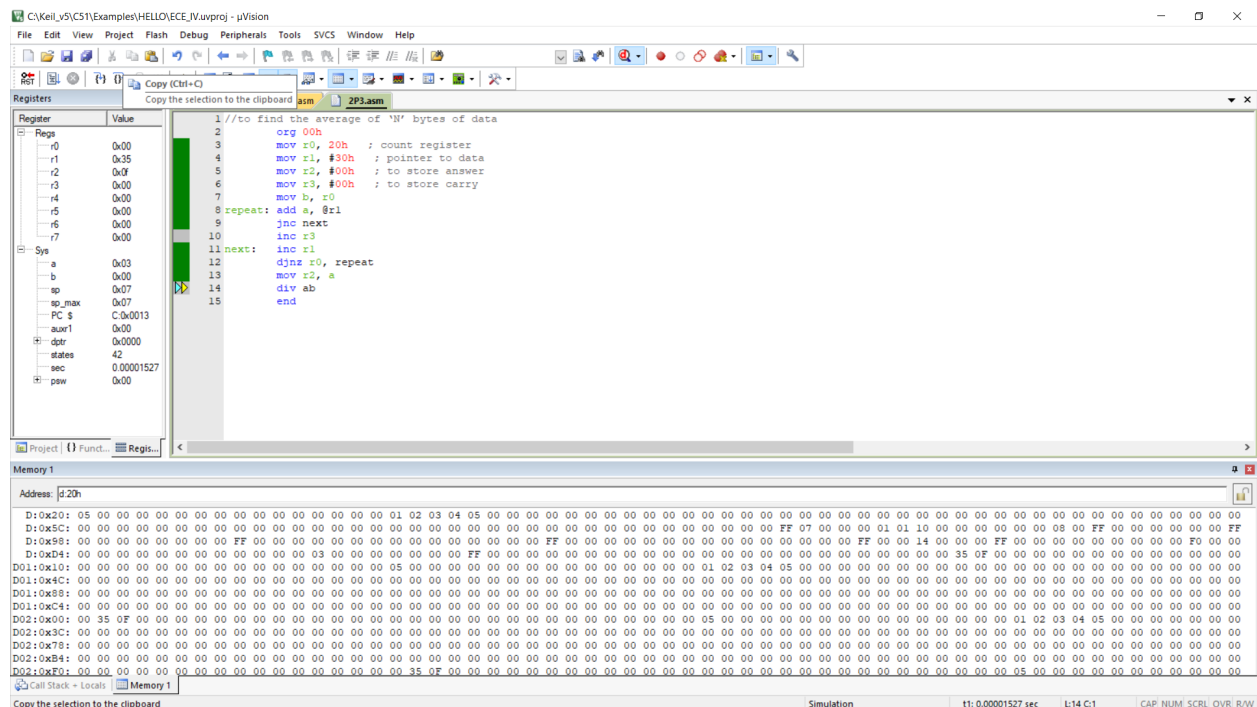


The screenshot shows the Keil uVision IDE with the assembly program 2P3.asm loaded. The assembly code is as follows:

```
1 //to find the average of 'N' bytes of data
2
3 org 00h
4 mov r0, 20h ; count register
5 mov r1, #00h ; pointer to data
6 mov r3, #00h ; to store carry
7 mov b, r0
8 repeat: add a, @r1
9 jnc next
10 inc r3
11 next: inc r1
12 djnz r0, repeat
13 mov r2, a
14 div ab
15 end
```

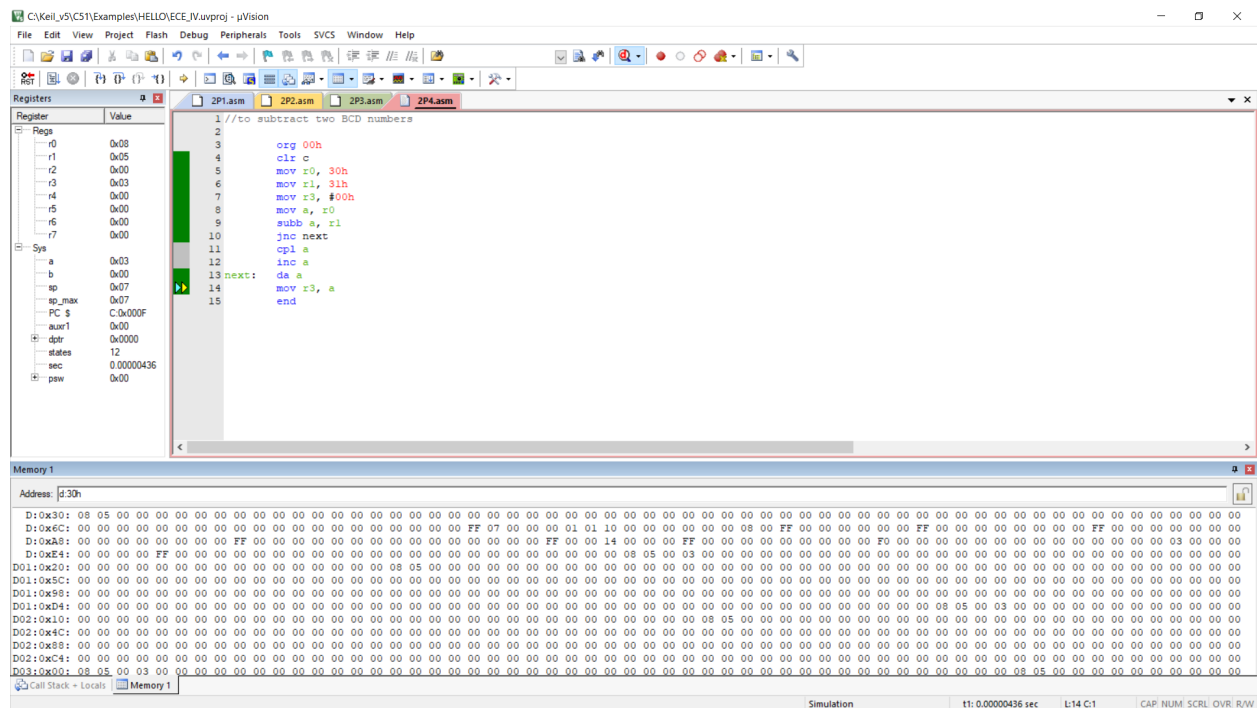
The registers window shows the initial state of the registers. The memory dump shows the initial state of memory, with the first 20h bytes of memory containing the data to be averaged.

After execution:



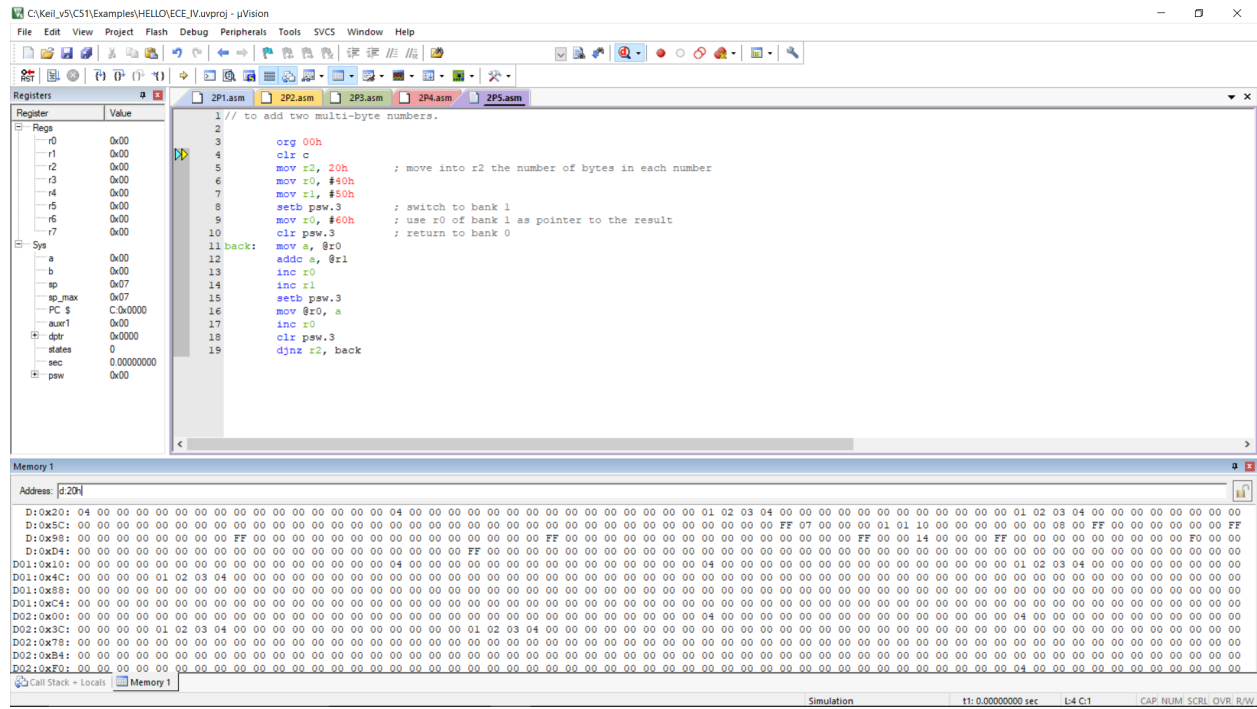
The screenshot shows the Keil uVision IDE with the assembly program 2P3.asm loaded. The assembly code is the same as in the previous screenshot. The registers window shows the final state of the registers after execution. The memory dump shows the final state of memory, with the first 20h bytes of memory containing the data to be averaged.

Before execution:



Write an 8051 assembly level program to add two multibyte numbers.

Before execution:



After execution:

