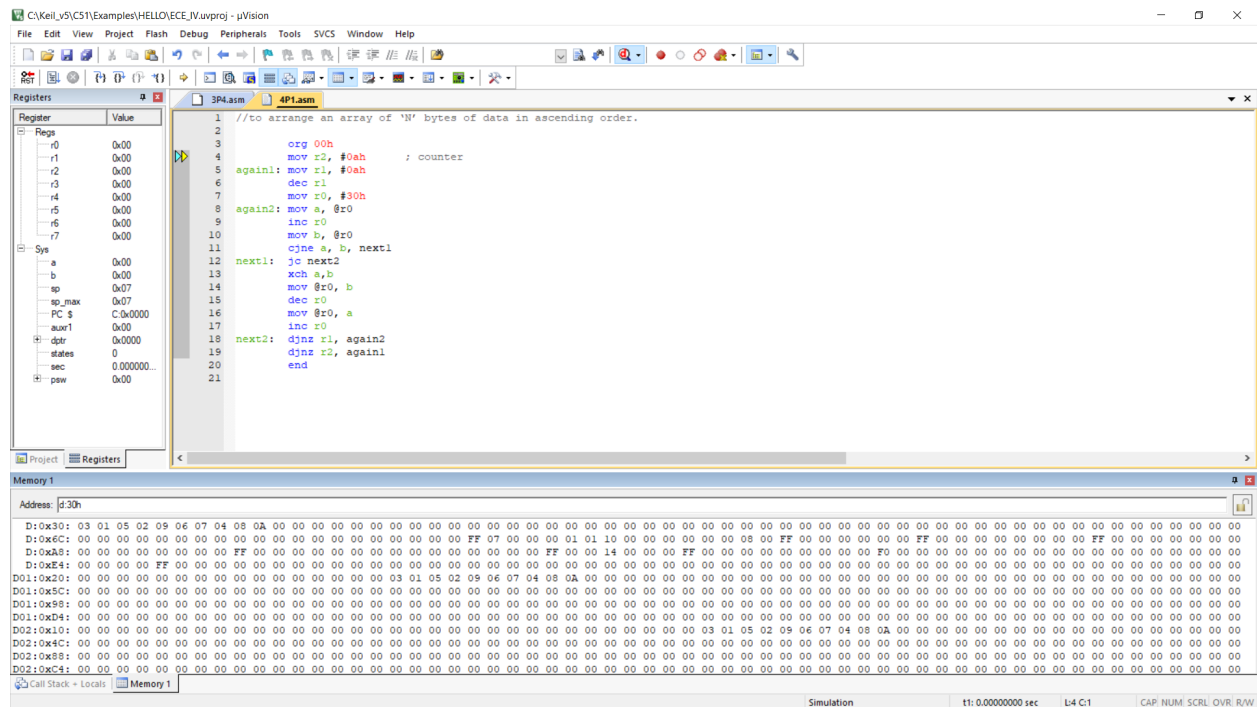


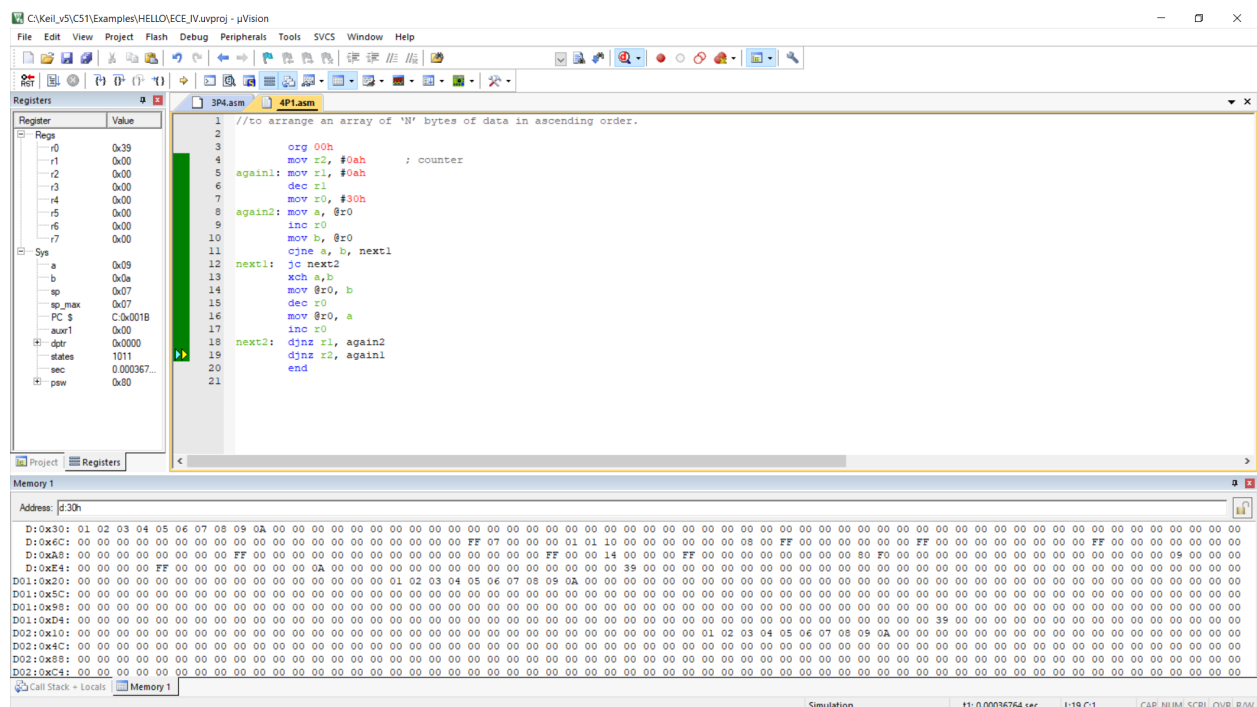
## SET 4

Write an 8051 assembly level program to arrange an array of 'N' bytes of data in ascending order.

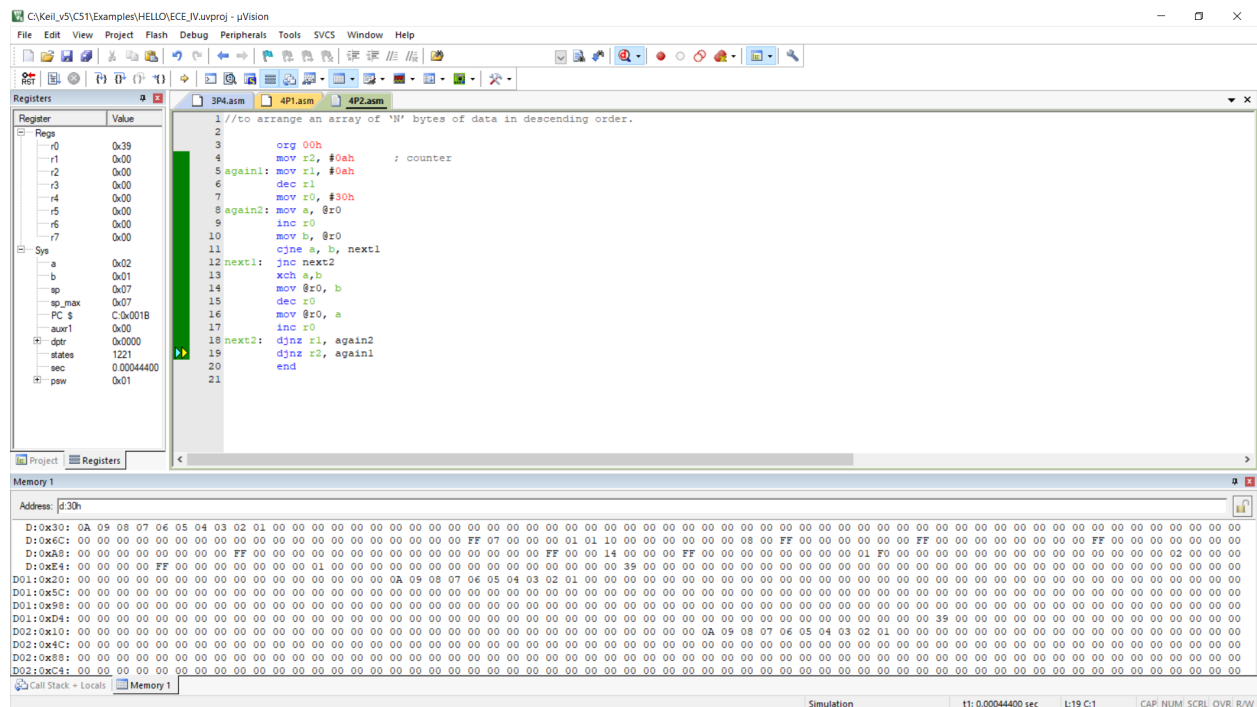
Before execution:



After execution:

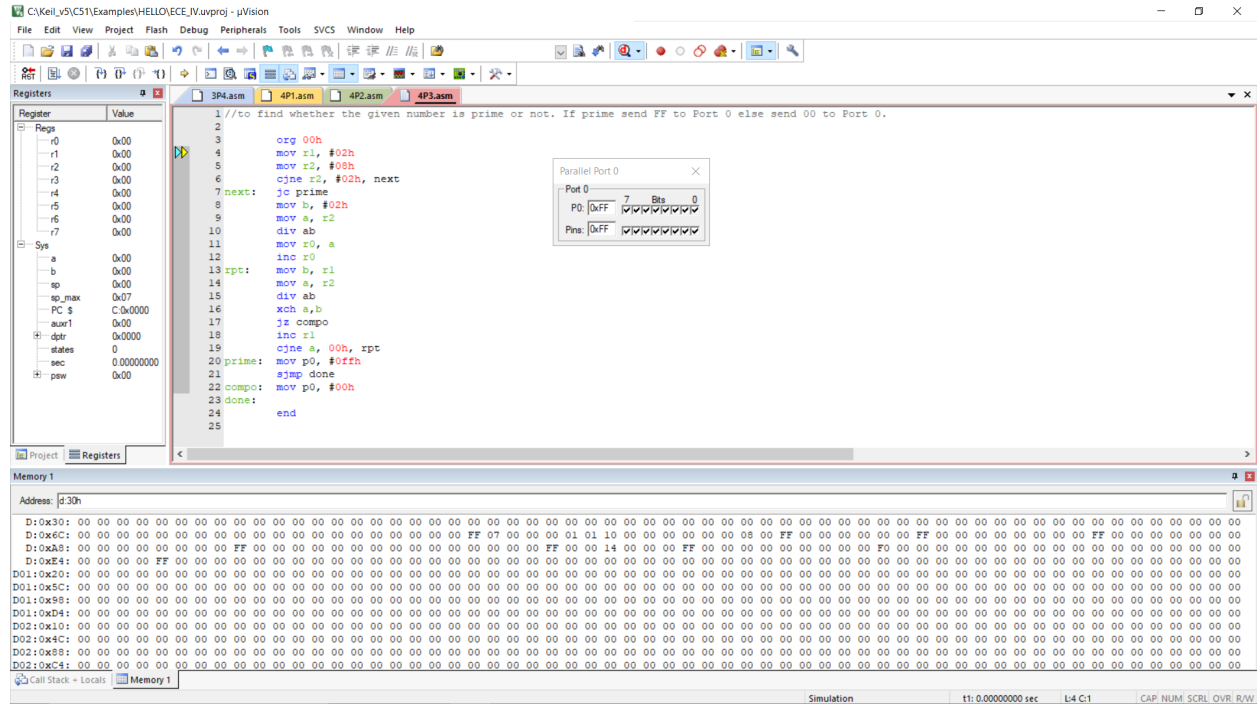


Before execution:

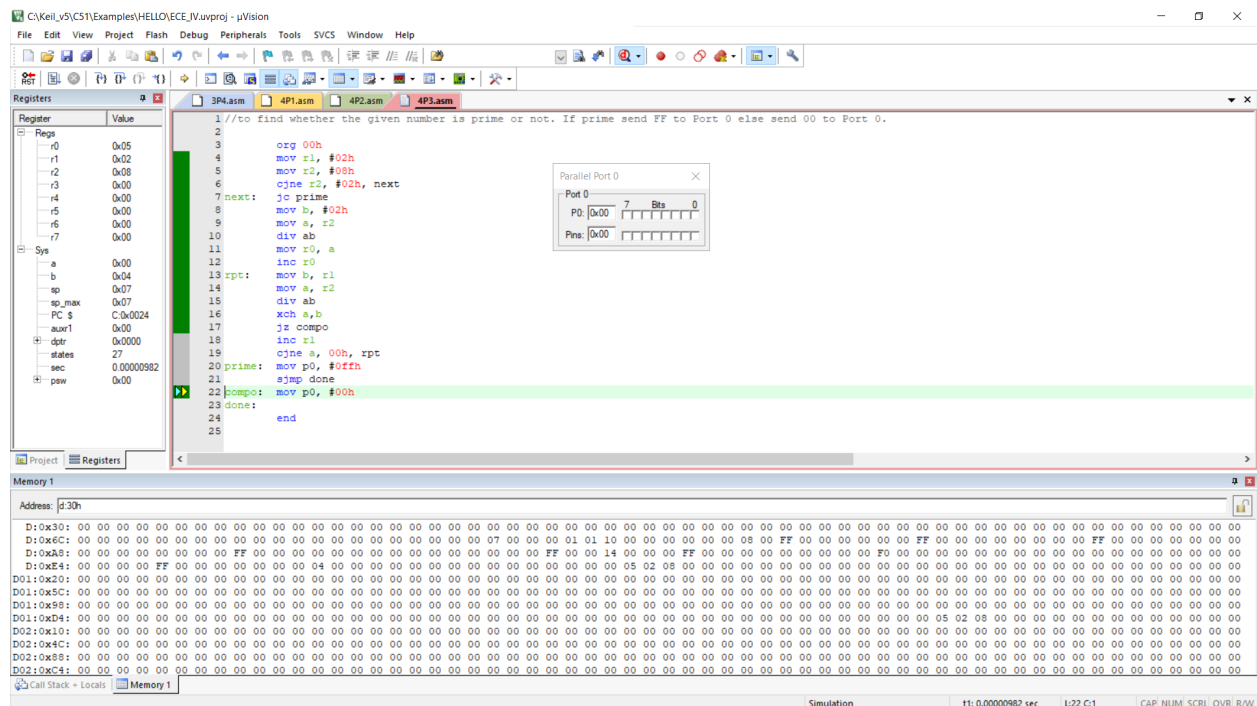


Write an 8051 assembly level program to find whether the given number is prime or not. If prime send FF to Port 0 else send 00 to Port 0.

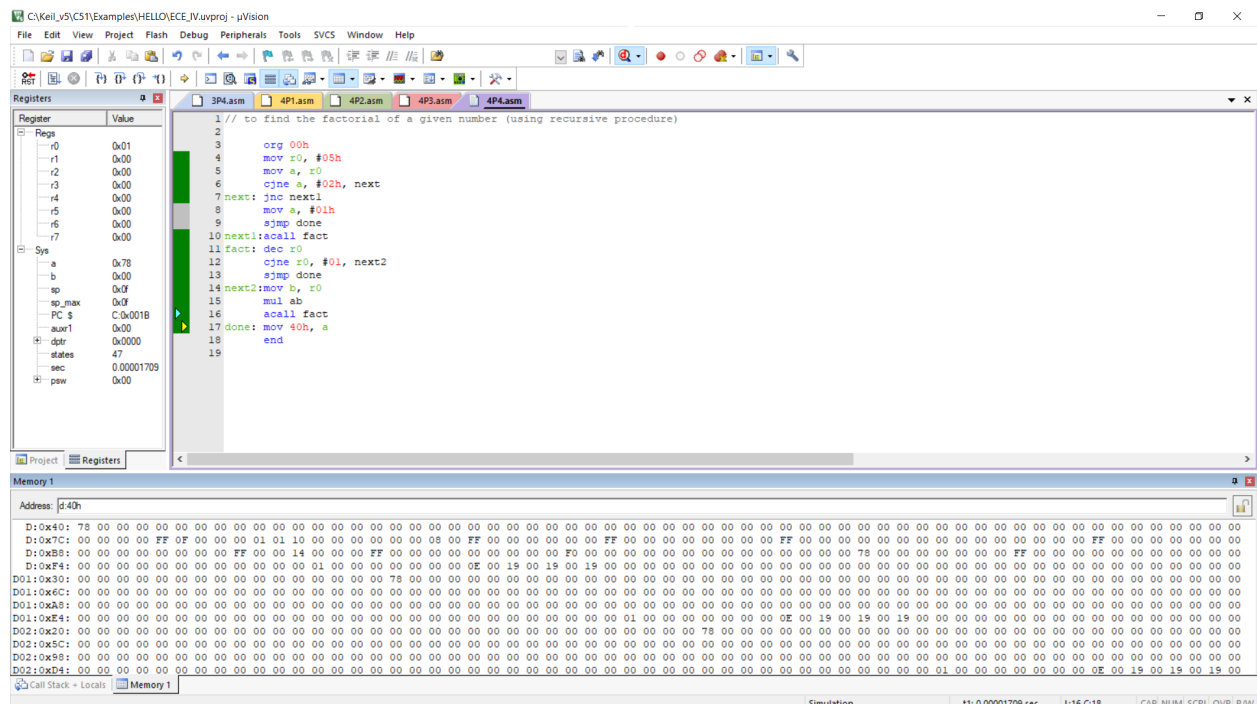
Before execution:



After execution:



Before execution:



Write an 8051 assembly level program for BCD up counter. Show each count in Port 0 with appropriate delay.

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

- Registers:** A list of 8051 registers (R0-R7, SFRs) with their current values. R0-R7 are 0x00. PC is 0x0000. DPTR is 0x0000. STATUS is 0. SEC is 0. PSW is 0x00.
- Assembly Code (4P5.asm):**

```

1 // program for BCD up counter. Show each count in Port 0 with appropriate delay
2 org 00h
3 mov a, #00h
4 mov r3, #0ffh
5 repeat: mov p0, a
6 acall delay
7 add a, #01h
8 da a
9 djnz r3, repeat
10 delay: mov r0, #0ffh
11 repeat2: mov r1, #0ffh
12 repeat1: djnz r1, repeat1
13 djnz r0, repeat2
14 ret
15
16 end
17

```
- Memory 1:** A memory dump starting at address 0x30h. It shows the contents of memory locations from 0x30 to 0x89. The dump shows the program code and data being stored in memory.
- Simulation Status:** The status bar at the bottom indicates "Simulation" mode, with a time of 0.00000000 sec and L3 C:1.

Write an 8051 assembly level program for BCD down counter. Show each count in Port 0 with appropriate delay.

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

- Registers:** A list of 8051 registers (R0-R7, SFRs) with their current values. R0-R7 are 0x00. PC is 0x0000. DPTR is 0x0000. STATUS is 0. SEC is 0. PSW is 0x00.
- Assembly Code (4P5.asm):**

```

1 // program for BCD down counter. Show each count in Port 0 with appropriate delay
2 org 00h
3 mov a, #99h
4 mov r3, #0ffh
5 repeat: mov p0, a
6 acall delay
7 add a, #99h
8 da a
9 djnz r3, repeat
10 delay: mov r0, #0ffh
11 repeat2: mov r1, #0ffh
12 repeat1: djnz r1, repeat1
13 djnz r0, repeat2
14 ret
15
16 end
17

```
- Memory 1:** A memory dump starting at address 0x30h. It shows the contents of memory locations from 0x30 to 0x89. The dump shows the program code and data being stored in memory.
- Simulation Status:** The status bar at the bottom indicates "Simulation" mode, with a time of 0.00000000 sec and L3 C:20.