

Micro-Controller

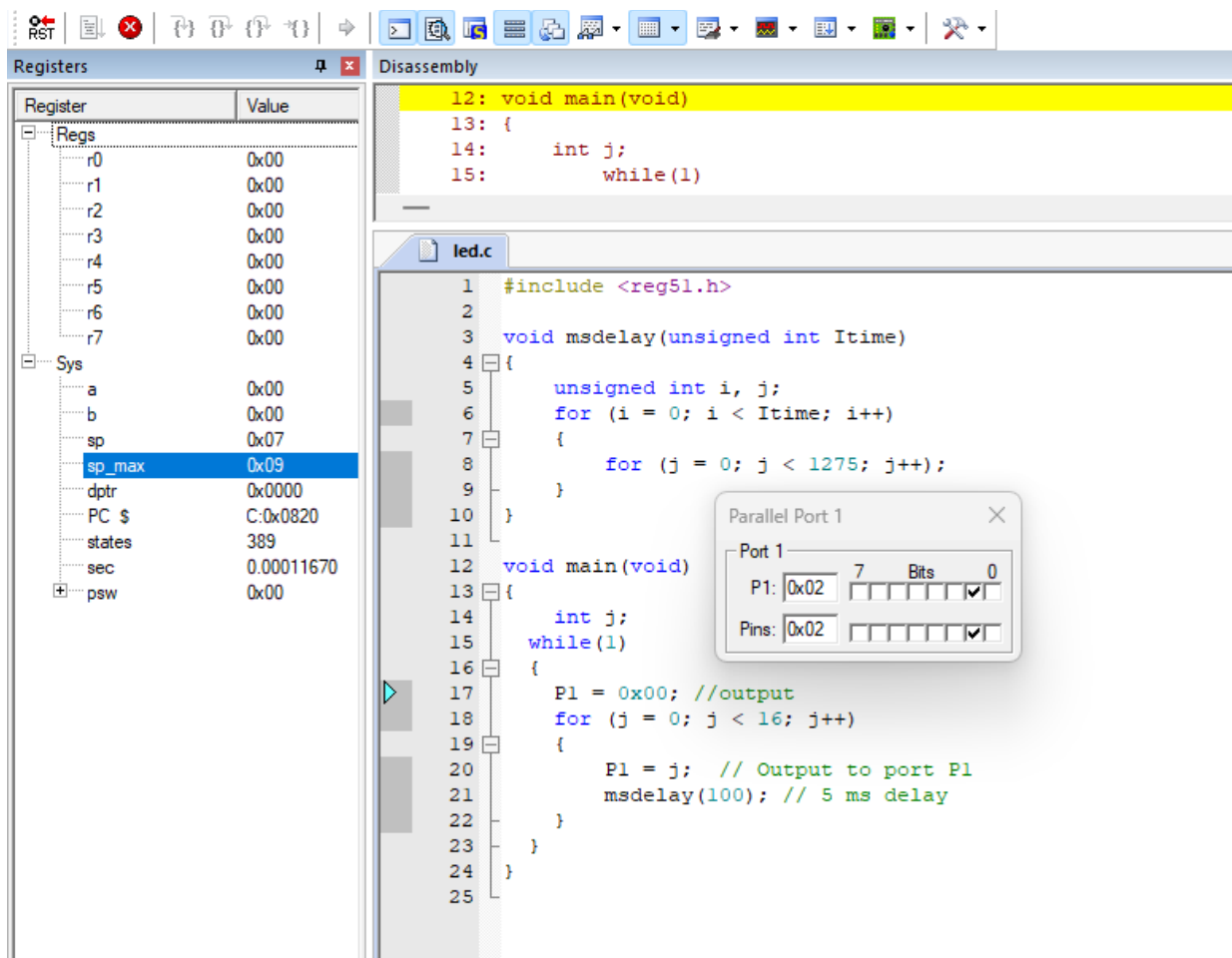
Experiment No. 2

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Roll No.: **24**

1] Microcontroller-based LED Pattern Generator:



2] Microcontroller-based LED Pattern Generator (Right Shift):

Registers

Register	Value
r0	0x00
r1	0x02
r2	0x01
r3	0xb8
r4	0x00
r5	0x43
r6	0x00
r7	0x64
a	0x00
b	0x00
sp	0x09
sp_max	0x09
dptr	0x0000
PC	0x0812
states	225347518
sec	67.60426216
psw	0x40

Disassembly

```
6:      for (j = 0; j < 1275; j++);
C:0x080A E4      CLR      A
C:0x080B FB      MOV      R3,A
C:0x080C FA      MOV      R2,A
```

ledrolling.c

```
1  #include <reg51.h>
2
3  void delay(unsigned int count) {
4      unsigned int i, j;
5      for (i = 0; i < count; i++)
6          for (j = 0; j < 1275; j++);
7  }
8
9  void main(void) {
10     unsigned char led_pattern = 0x80;
11
12     while (1) {
13         P0 = led_pattern;
14         delay(100);
15
16         led_pattern >>= 1;
17
18         if (led_pattern == 0x00)
19             led_pattern = 0x80;
20     }
21 }
22
```

Parallel Port 0

Port 0: 0x04 7 Bits 0

Pins: 0x00