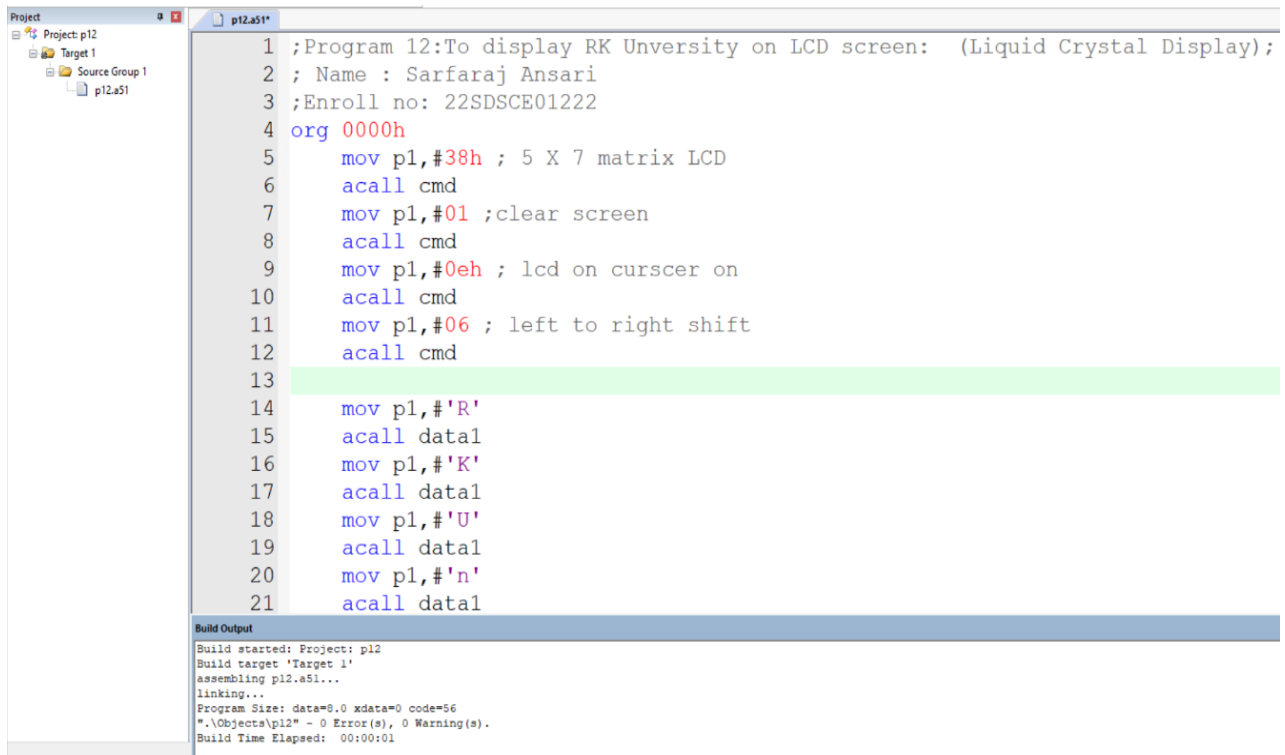


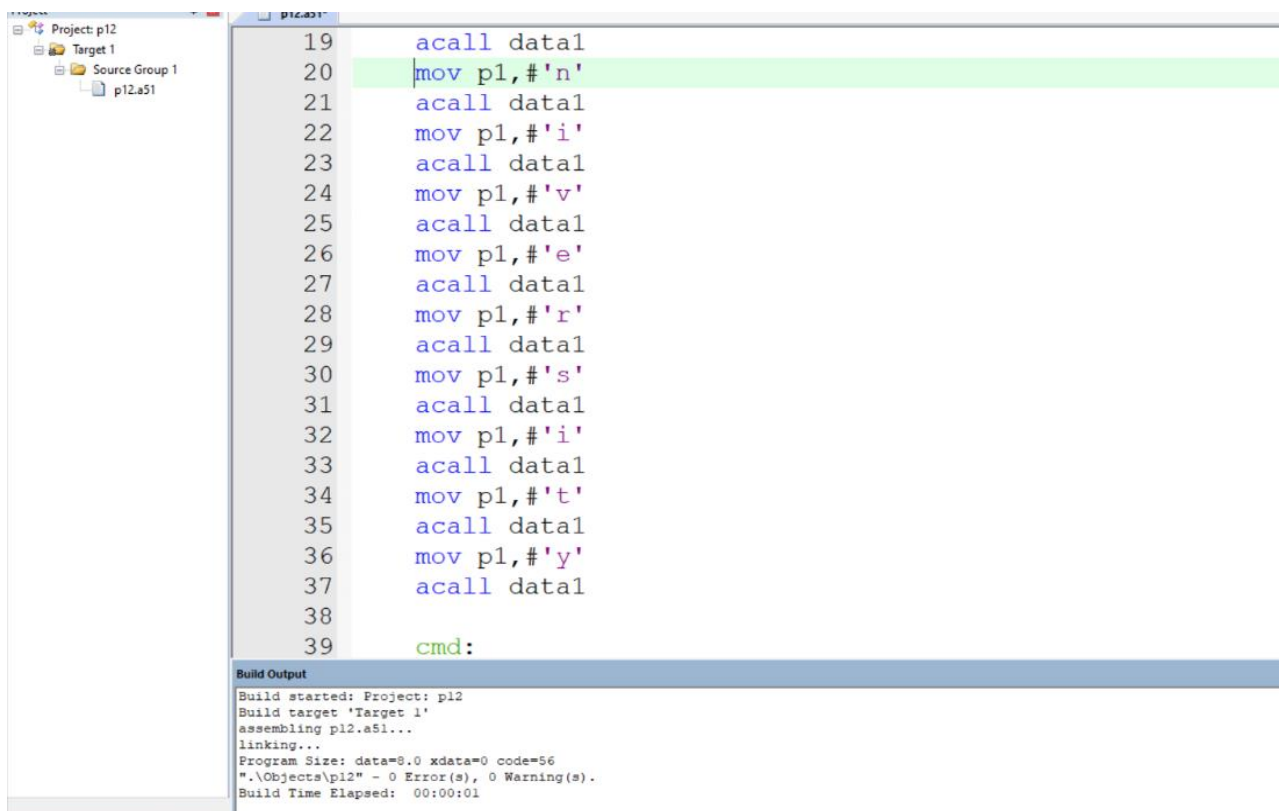
Program 12: To display RK University on LCD screen:



```
1 ;Program 12: To display RK University on LCD screen: (Liquid Crystal Display);
2 ; Name : Sarfaraj Ansari
3 ;Enroll no: 22SDSCE01222
4 org 0000h
5     mov p1, #38h ; 5 X 7 matrix LCD
6     acall cmd
7     mov p1, #01 ; clear screen
8     acall cmd
9     mov p1, #0eh ; lcd on cursor on
10    acall cmd
11    mov p1, #06 ; left to right shift
12    acall cmd
13
14    mov p1, #'R'
15    acall data1
16    mov p1, #'K'
17    acall data1
18    mov p1, #'U'
19    acall data1
20    mov p1, #'n'
21    acall data1
```

Build Output

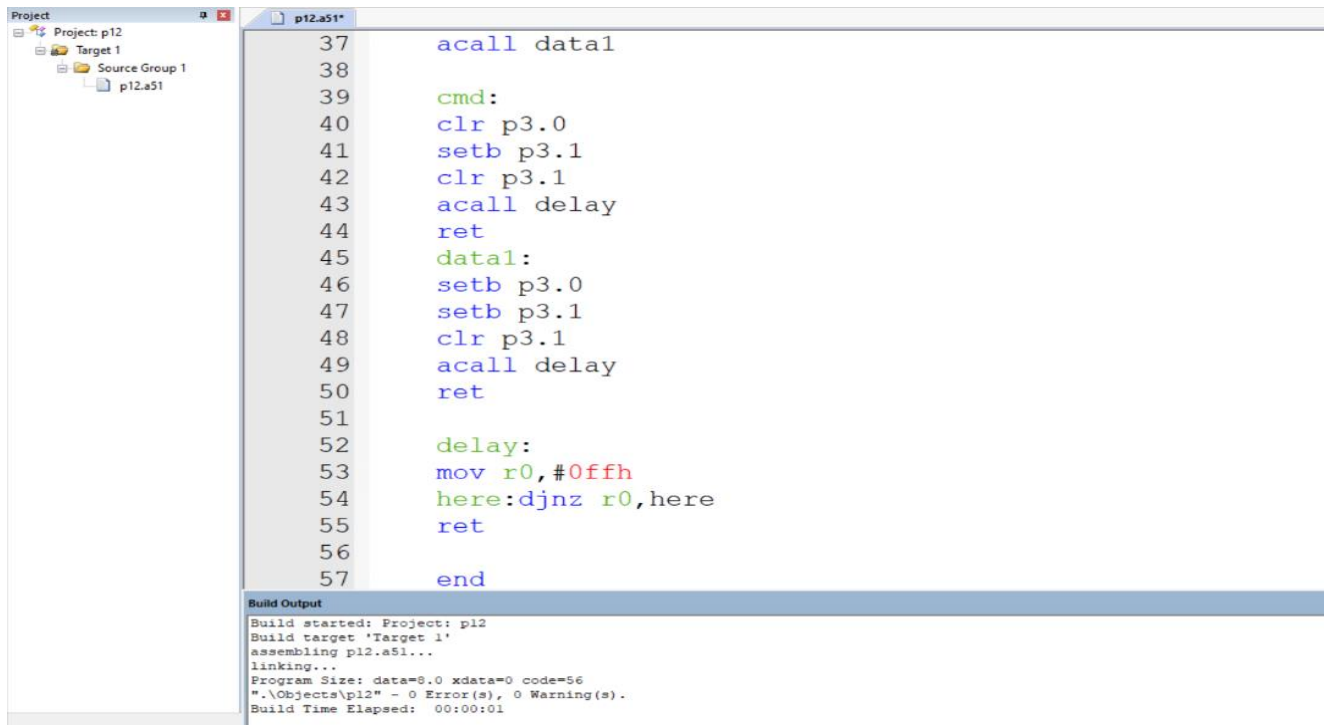
```
Build started: Project: pl2
Build target 'Target 1'
assembling pl2.a51...
linking...
Program Size: data=8.0 xdata=0 code=56
".\Objects\pl2" - 0 Error(s), 0 Warning(s).
Build Time Elapsed: 00:00:01
```



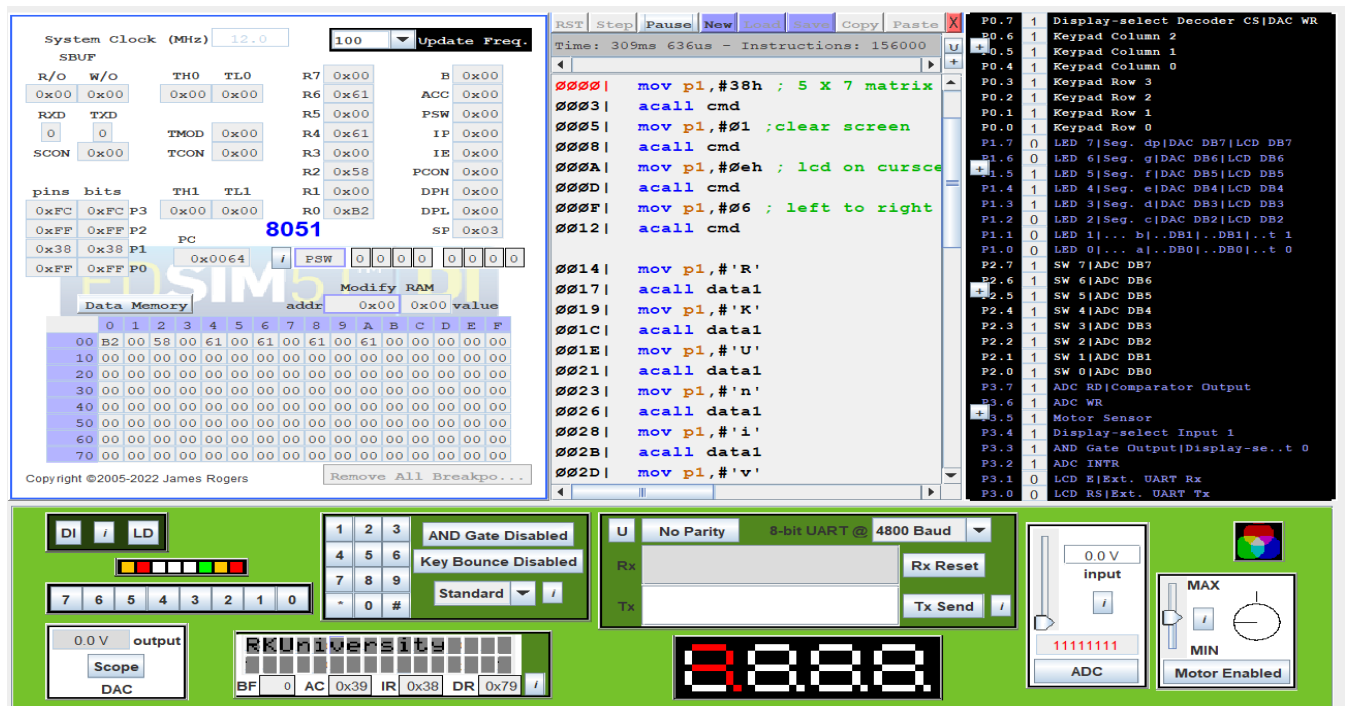
```
19    acall data1
20    mov p1, #'n'
21    acall data1
22    mov p1, #'i'
23    acall data1
24    mov p1, #'v'
25    acall data1
26    mov p1, #'e'
27    acall data1
28    mov p1, #'r'
29    acall data1
30    mov p1, #'s'
31    acall data1
32    mov p1, #'i'
33    acall data1
34    mov p1, #'t'
35    acall data1
36    mov p1, #'y'
37    acall data1
38
39    cmd:
```

Build Output

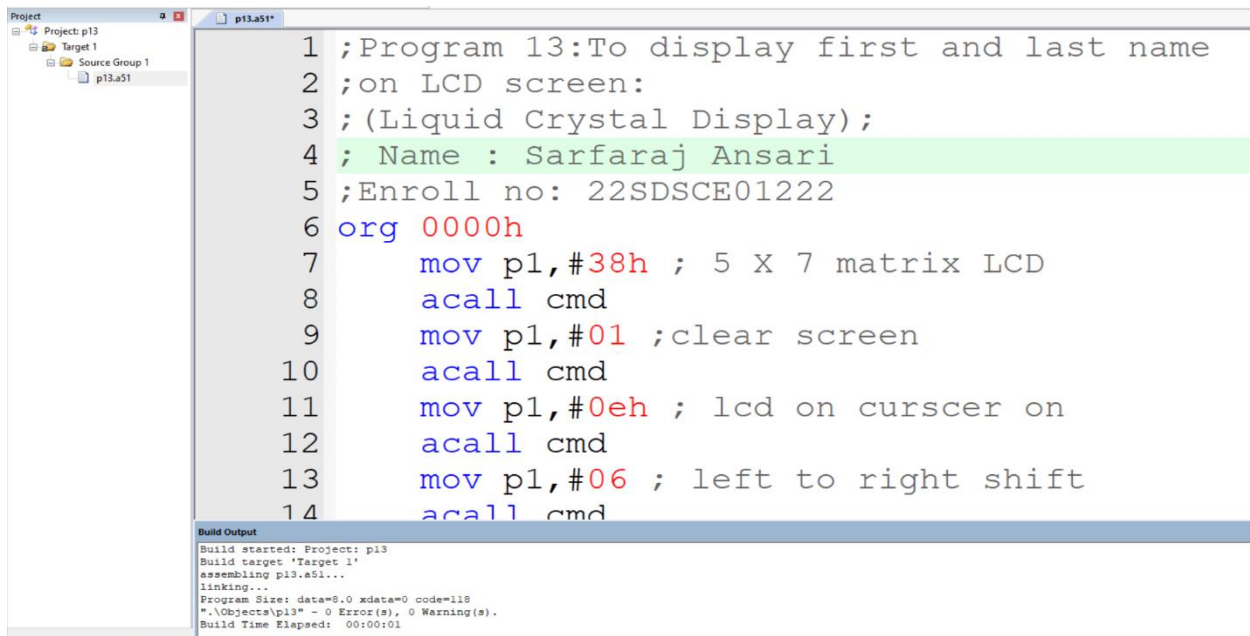
```
Build started: Project: pl2
Build target 'Target 1'
assembling pl2.a51...
linking...
Program Size: data=8.0 xdata=0 code=56
".\Objects\pl2" - 0 Error(s), 0 Warning(s).
Build Time Elapsed: 00:00:01
```



Output:

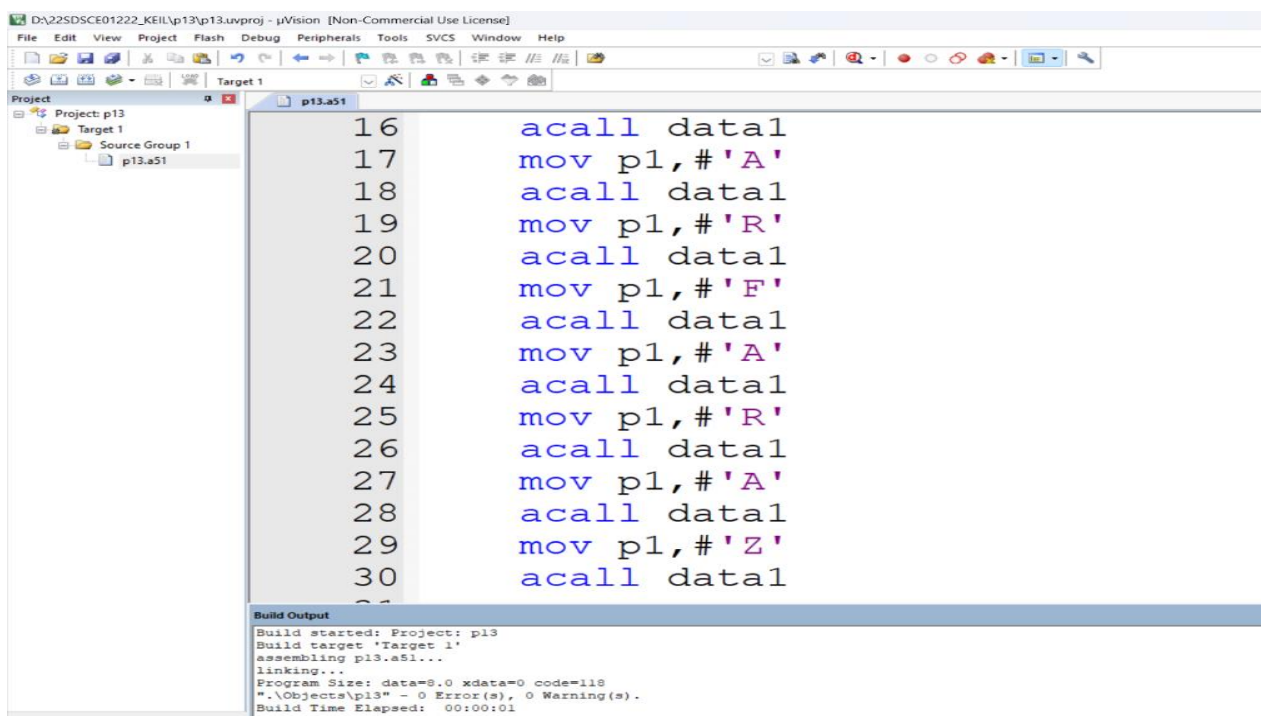


Program 13: To display first and last name on LCD screen:



```
1 ;Program 13: To display first and last name
2 ;on LCD screen:
3 ;(Liquid Crystal Display);
4 ; Name : Sarfaraj Ansari
5 ;Enroll no: 22SDSCE01222
6 org 0000h
7     mov p1, #38h ; 5 X 7 matrix LCD
8     acall cmd
9     mov p1, #01 ; clear screen
10    acall cmd
11    mov p1, #0eh ; lcd on cursor on
12    acall cmd
13    mov p1, #06 ; left to right shift
14    acall cmd

Build Output
Build started: Project: p13
Build target 'Target 1'
assembling p13.a51...
linking...
Program Size: data=8.0 xdata=0 code=118
".\Objects\p13" - 0 Error(s), 0 Warning(s).
Build Time Elapsed: 00:00:01
```



```
16    acall data1
17    mov p1, #'A'
18    acall data1
19    mov p1, #'R'
20    acall data1
21    mov p1, #'F'
22    acall data1
23    mov p1, #'A'
24    acall data1
25    mov p1, #'R'
26    acall data1
27    mov p1, #'A'
28    acall data1
29    mov p1, #'Z'
30    acall data1

Build Output
Build started: Project: p13
Build target 'Target 1'
assembling p13.a51...
linking...
Program Size: data=8.0 xdata=0 code=118
".\Objects\p13" - 0 Error(s), 0 Warning(s).
Build Time Elapsed: 00:00:01
```

Project

Project: p13
Target 1
Source Group 1
p13.a51

p13.a51

29 mov p1, #'Z'
30 acall data1
31
32 mov p1, #0c0h
33 acall cmd
34
35 mov p1, #'A'
36 acall data1
37 mov p1, #'N'
38 acall data1
39 mov p1, #'S'
40 acall data1
41 mov p1, #'A'
42 acall data1
43 mov p1, #'R'

Build Output

Build started: Project: p13
Build target 'Target 1'
assembling p13.a51...
linking...
Program Size: data=8.0 xdata=0 code=118
*.Objects\p13" - 0 Error(s), 0 Warning(s).
Build Time Elapsed: 00:00:01

Project

Project: p13
Target 1
Source Group 1
p13.a51

p13.a51

43 mov p1, #'R'
44 acall data1
45 mov p1, #'I'
46 acall data1
47
48 cmd:
49 clr p3.0
50 setb p3.1
51 clr p3.1
52 acall delay
53 ret
54 data1:
55 setb p3.0
56 setb p3.1

Build Output

Build started: Project: p13
Build target 'Target 1'
assembling p13.a51...
linking...
Program Size: data=8.0 xdata=0 code=118
*.Objects\p13" - 0 Error(s), 0 Warning(s).
Build Time Elapsed: 00:00:01

Project

Project: p13
Target 1
Source Group 1
p13.a51

54

data1:

55

setb p3.0

56

setb p3.1

57

clr p3.1

58

acall delay

59

ret

60

61

delay:

62

mov r0, #0ffh

63

here: djnz r0, here

64

ret

65

66

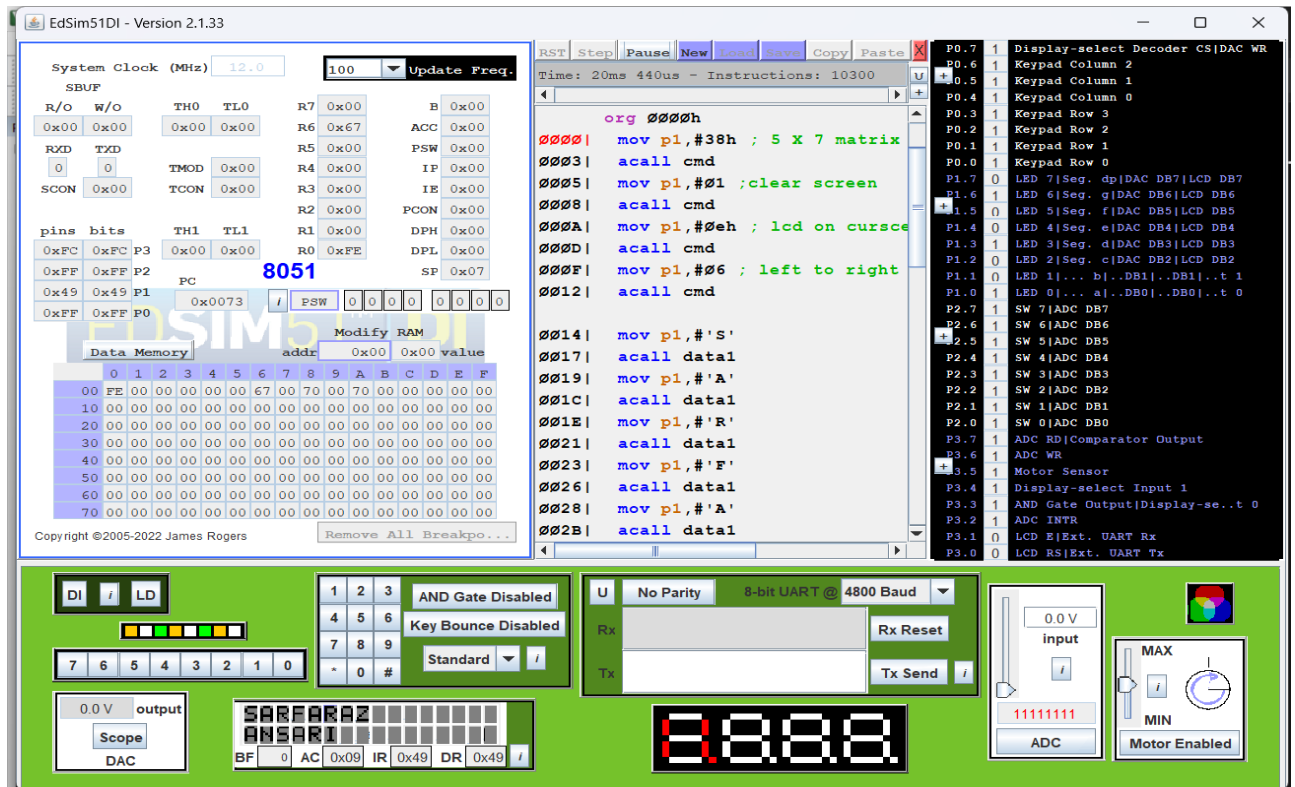
end

67

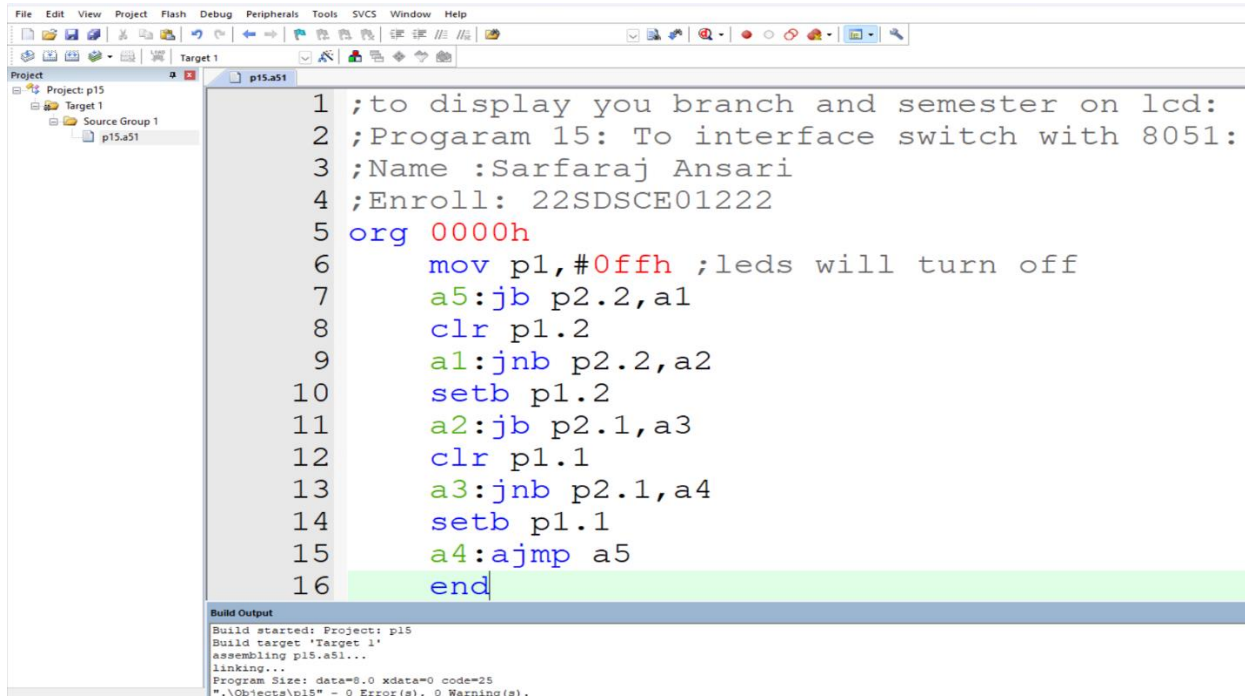
Build Output

Build started: Project: p13
Build target 'Target 1'
assembling p13.a51...
linking...
Program Size: data=8.0 xdata=0 code=118
".\Objects\p13" - 0 Error(s), 0 Warning(s).
Build Time Elapsed: 00:00:01

Output:



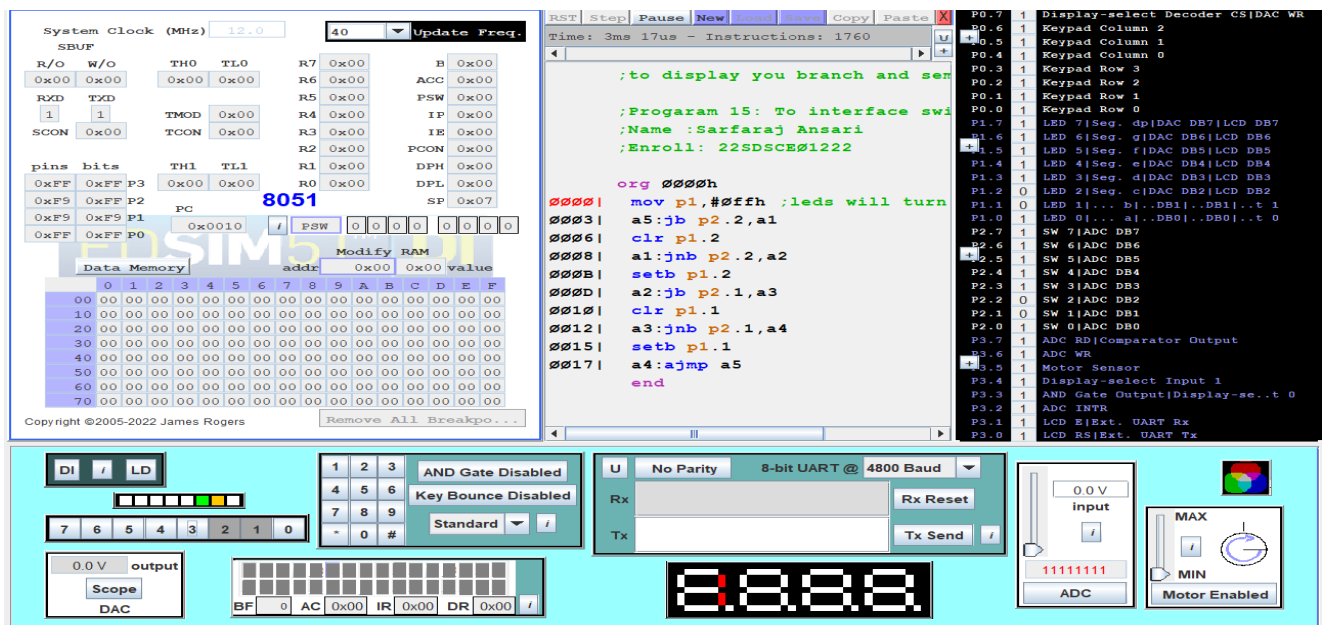
Program 15: To interface switch with 8051;



```
1 ;to display you branch and semester on lcd:
2 ;Program 15: To interface switch with 8051:
3 ;Name :Sarfaraj Ansari
4 ;Enroll: 22SDSCE01222
5 org 0000h
6     mov p1,#0ffh ;leds will turn off
7     a5:jb p2.2,a1
8     clr p1.2
9     a1:jnb p2.2,a2
10    setb p1.2
11    a2:jb p2.1,a3
12    clr p1.1
13    a3:jnb p2.1,a4
14    setb p1.1
15    a4:ajmp a5
16    end
```

Build Output
Build started: Project: p15
Build target 'Target 1'
assembling p15.a51...
linking...
Program Size: data=0.0 xdata=0 code=25
".\Objects\p15" - 0 Error(s), 0 Warning(s).

Output:



The screenshot displays the Proteus simulation environment. The top window shows the 8051 microcontroller's internal registers and memory. The middle window shows the assembly code being executed. The bottom window shows the hardware components, including a keypad, an LCD display, and various sensors. The LCD display shows the text 'Sarfaraj Ansari' and '22SDSCE01222'.

System Clock (MHz) 12.0 40 Update Freq.

SBUS

R/O W/O TH0 TL0 R7 0x00 B 0x00
0x00 0x00 0x00 0x00 R6 0x00 ACC 0x00
RXD TXD R5 0x00 PSW 0x00
1 1 TMOD 0x00 R4 0x00 IP 0x00
SCON 0x00 TCON 0x00 R3 0x00 IE 0x00
R2 0x00 PCON 0x00
R1 0x00 DPH 0x00
R0 0x00 DPL 0x00
SP 0x07

pins bits

0xFF 0xFF P3 0x00 0x00
0xFF 0xFF P2
0xFF 0xFF P1 PC 0x0000
0xFF 0xFF P0 0x0000

8051

PSW 0 0 0 0 0 0 0 0

Data Memory

addr 0x00 value

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
10	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
20	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
30	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
40	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
50	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
60	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
70	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Remove All Breakpo...

RST Asm Run New Load Save Copy Paste

Reset: PC = 0x0000

to display you branch and semester

Program 15: To interface switch with

Name : Sarfaraj Ansari

Enroll: 22SDSCE01222

org 0000h

mov p1,#0ffh ;leds will turn off

a5:jb p2.2,a1

clr p1.2

a1:jnb p2.2,a2

setb p1.2

a2:jb p2.1,a3

clr p1.1

a3:jnb p2.1,a4

setb p1.1

a4:ajmp a5

end

P0.7 Display-select Decoder CS|DAC WR

P0.6 Keypad Column 2

P0.5 Keypad Column 1

P0.4 Keypad Column 0

P0.3 Keypad Row 3

P0.2 Keypad Row 2

P0.1 Keypad Row 1

P0.0 Keypad Row 0

P1.7 LED 7|Seg. dp|DAC DB7|LCD DB7

P1.6 LED 6|Seg. g|DAC DB6|LCD DB6

P1.5 LED 5|Seg. f|DAC DB5|LCD DB5

P1.4 LED 4|Seg. e|DAC DB4|LCD DB4

P1.3 LED 3|Seg. d|DAC DB3|LCD DB3

P1.2 LED 2|Seg. c|DAC DB2|LCD DB2

P1.1 LED 1|... b|...DB1|...DB1|...t 1

P1.0 LED 0|... a|...DB0|...DB0|...t 0

P2.7 SW 7|ADC DB7

P2.6 SW 6|ADC DB6

P2.5 SW 5|ADC DB5

P2.4 SW 4|ADC DB4

P2.3 SW 3|ADC DB3

P2.2 SW 2|ADC DB2

P2.1 SW 1|ADC DB1

P2.0 SW 0|ADC DB0

P3.7 ADC RD|Comparator Output

P3.6 ADC WR

P3.5 Motor Sensor

P3.4 Display-select Input 1

P3.3 AND Gate Output|Display-se..t 0

P3.2 ADC INTR

P3.1 LCD E|Ext. UART Rx

P3.0 LCD RS|Ext. UART Tx

DI i LD

7 6 5 4 3 2 1 0

0.0V output Scope DAC

1 2 3 AND Gate Disabled

4 5 6 Key Bounce Disabled

7 8 9 Standard i

- 0 #

U No Parity 8-bit UART @ 4800 Baud

Rx Rx Reset

Tx Tx Send i

0.0V input 11111111 ADC

MAX MIN Motor Enabled

BF 0 AC 0x00 IR 0x00 DR 0x00 i

8888