

```

7 segment display :
#include <reg51.h>

#define DATAPORT P0

Sbit DISP1 = P3^4;

Void msdelay (unsigned int time); //Function to generate delay

Int main()
{
    Unsigned char seg_code[]=
{0xC0,0xF9,0xA4,0xB0,0x99,0x92,0x82,0xF8,0x80,0x90,0x88,0x83,0xC6,0x
A1,0x86,0x8E};

    Int cnt;

    While (1)
    {
        For (cnt = 0; cnt <= 9; cnt++) // loop to display 0-9999
        {
            DISP1 = 0;
            DATAPORT = seg_code[cnt];
            Msdelay(500);
        }
    }

//Function Definitions
Void msdelay (unsigned int time) //Function to generate delay
{
    Unsigned int i, j;
    For (i = 0; i < time; i++)
        For (j = 0; j < 113; j++);//Calibrated for a 1 ms delay in MPLAB
}

```

LCD :

```
#include <reg51.h>
```

```
#define LCD P2
```

```
Sbit RS = P3^0;
```

```
Sbit RW = P3^1;
```

```
Sbit EN = P3^2;
```

```
Void delay_ms(unsigned int ms) {
```

```
    Unsigned int i, j;
```

```
    For(i = 0; i < ms; i++)
```

```
        For(j = 0; j < 1275; j++);
```

```
}
```

```
Void lcd_cmd(unsigned char cmd) {
```

```
    LCD = cmd;
```

```
    RS = 0;
```

```
    RW = 0;
```

```
    EN = 1;
```

```
    Delay_ms(1);
```

```
    EN = 0;
```

```
    Delay_ms(2);
```

```
}
```

```
Void lcd_data(unsigned char data_byte) {
```

```
    LCD = data_byte;
```

```
    RS = 1;
```

```
    RW = 0;
```

```
    EN = 1;
```

```
    Delay_ms(1);
```

```
    EN = 0;
```

```
    Delay_ms(2);
```

```
}
```

```
Void lcd_init() {
    Lcd_cmd(0x38);
    Lcd_cmd(0x0C);
    Lcd_cmd(0x01);
    Lcd_cmd(0x06);
    Lcd_cmd(0x80);
}

Void lcd_string(char *str) {
    While(*str) {
        Lcd_data(*str++);
    }
}

Void main() {
    Lcd_init();
    Lcd_string("Roll No T171000");
    While(1);
}
```

LED :

```
#include <reg51.h> // Header file for 8051 microcontroller

#define LED_PORT P2 // 8 LEDs connected to Port 2

Void delay_ms(unsigned int ms){
    Unsigned int i, j;
    For(i = 0; i < ms; i++)
        For(j = 0; j < 1275; j++); // Roughly 1 ms delay for 12 MHz crystal
}

Void main() {
    While(1) {
        // Glow even-numbered LEDs: 2, 4, 6, 8 (binary 10101010)
        LED_PORT = 0xAA; // 0xAA = 10101010b
        Delay_ms(500);

        // Glow odd-numbered LEDs: 1, 3, 5, 7 (binary 01010101)
        LED_PORT = 0x55; // 0x55 = 01010101b
        Delay_ms(500);
    }
}
```

```
STM_ANTICLOCKWISE :  
#include <reg51.h>  
  
#define DATAPORT P0  
  
Void msdelay (unsigned int time) // Definition of delay subroutine  
{  
    Unsigned int i, j;  
    For (i = 0; i < time; i++) // Loop for itime  
        For (j = 0; j < 113; j++); // Calibrated for a 1 ms delay  
}  
  
Void main()  
{  
    While(1) // Endless loop  
    {  
        DATAPORT = 0x09;  
        Msdelay(2);  
        DATAPORT = 0x08;  
        Msdelay(2);  
        DATAPORT = 0x0C;  
        Msdelay(2);  
        DATAPORT = 0x04;  
        Msdelay(2);  
        DATAPORT = 0x06;  
        Msdelay(2);  
        DATAPORT = 0x02;  
        Msdelay(2);  
        DATAPORT = 0x03;
```

```
Msdelay(2);
DATAPORT = 0x01;
Msdelay(2);
}
}
```

```

STM_CLOCKWISE:
#include <reg51.h>

#define DATAPORT P0

Void msdelay (unsigned int time) // Definition of delay subroutine
{
    Unsigned int i, j;
    For (i = 0; i < time; i++) // Loop for itime
        For (j = 0; j < 113; j++); // Calibrated for a 1 ms delay
}

Void main()
{
    While(1) // Endless loop
    {
        DATAPORT = 0x01; // Stepper motor 4-
step sequence
        Msdelay(2);
        DATAPORT = 0x03;
        Msdelay(2);
        DATAPORT = 0x02;
        Msdelay(2);
        DATAPORT = 0x06;
        Msdelay(2);
        DATAPORT = 0x04; // Stepper motor 4-
step sequence
        Msdelay(2);
        DATAPORT = 0x0C;
        Msdelay(2);
        DATAPORT = 0x08;
        Msdelay(2);
        DATAPORT = 0x09;
        Msdelay(2);
    }
}

```

}

}