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#include <xc.h>

#define _XTAL_FREQ 32000000

#define RS LATCbits.LATC0
#define EN LATCbits.LATC1
#define LCD_DATA LATD

void LCD_command(unsigned char cmd) {
    RS = 0;
    LCD_DATA = cmd;
    EN = 1;
    __delay_ms(1);
    EN = 0;
    __delay_ms(2);
}

void LCD_data(unsigned char data) {
    RS = 1;
    LCD_DATA = data;
    EN = 1;
    __delay_ms(1);
    EN = 0;
    __delay_ms(1);
}

void LCD_init() {
    TRISCbits.TRISC0 = 0;
    TRISCbits.TRISC1 = 0;
    TRISD = 0;

    __delay_ms(15);
    LCD_command(0x30); // reset command
    __delay_ms(5);
    LCD_command(0x30); // reset command
    __delay_us(160);
    LCD_command(0x30); // reset command
    __delay_us(160);

    LCD_command(0x38); // 8 bit mode, 2 line, 5x8 font
    LCD_command(0x0C);
    LCD_command(0x06); // Entry Mode
    LCD_command(0x01); // Clear Screen
    __delay_ms(2);
}

```

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int main() {
    unsigned char f1[] = "ELECTRICAL";
    unsigned char f2[] = "ENGINEERING";
    unsigned char s1[] = "EEE407";
    unsigned char s2[] = "LABORATORY";

    LCD_init();

    while(1) {
        LCD_command(0x01); // clear screen
        LCD_command(0x80); // first row first column

        // f1[i] != '0'
        // LCD_command(0x14); // shift cursor right

        for(int i = 0; i < 10; i++) {
            LCD_data(f1[i]);
        }

        LCD_command(0xC0); // second row, first column
        //LCD_command(0x10); // shift cursor left

        for(int i=0; i<11; i++){
            LCD_data(f2[i]);
            __delay_ms(1); }

        __delay_ms(3000);

        /* for(int i=0; i<5; i++){
            LCD_command(0x1C);
            __delay_ms(500); }

        for(int i=0; i<5; i++){
            LCD_command(0x18);
            __delay_ms(500); }
        */

        /// ***** Second Screen *****
        LCD_command(0x01); // clear screen
        LCD_command(0x80); // first row first column
        //
        for(int j=0; j<6; j++){
            LCD_data(s1[j]); }

        LCD_command(0xC0);
        for(int j=0; j<10; j++){
            LCD_data(s2[j]); }
    }
}

```

```
    __delay_ms(3000);  
  }  
}
```