

All psdl working codes

LCD WORKING CODE

```
#include<xc.h>
#include <P18f4550.h>
#define LCD_EN LATAbits.LA1
#define LCD_RS LATAbits.LA0
#define LCDPORT LATB
void lcd_delay(unsigned int time)
{
    unsigned int i , j ;
    for(i = 0; i < time; i++)
    {
        for(j=0;j<100;j++);
    }
}
void SendInstruction(unsigned char command)
{
    LCD_RS = 0; // RS low : Instruction
    LCDPORT = command;
    LCD_EN = 1; // EN High
    lcd_delay(10);
    LCD_EN = 0; // EN Low; command sampled at EN falling edge
    lcd_delay(10);
}
void SendData(unsigned char lcddata)
{
    LCD_RS = 1; // RS HIGH : DATA
    LCDPORT = lcddata;
    LCD_EN = 1; // EN High
    lcd_delay(10);
    LCD_EN = 0; // EN Low; data sampled at EN falling edge
    lcd_delay(10);
}
void InitLCD(void)
{
    ADCON1 = 0x0F;
    TRISB = 0x00; //set data port as output
    TRISAbits.RA0 = 0; //RS pin
    TRISAbits.RA1 = 0; // EN pin
    SendInstruction(0x38); //8 bit mode, 2 line,5x7 dots
    SendInstruction(0x06); // entry mode
```

```

SendInstruction(0x0C); //Display ON cursor OFF
SendInstruction(0x01); //Clear display

SendInstruction(0x80); //set address to 1st line
}
unsigned char *String1 = " Microembedded";
unsigned char *String2 = " PIC-18F Board";
void main(void)
{
ADCON1 = 0x0F;
TRISB = 0x00; //set data port as output
TRISAbits.RA0 = 0; //RS pin
TRISAbits.RA1 = 0; // EN pin
SendInstruction(0x38); //8 bit mode, 2 line,5x7 dots
SendInstruction(0x06); // entry mode
SendInstruction(0x0C); //Display ON cursor OFF
SendInstruction(0x01); //Clear display
SendInstruction(0x80); //set address to 1st line
while(*String1)
{
SendData(*String1);
*String1++;
}
SendInstruction(0xC0); //set address to 2nd line
while(*String2)
{
SendData(*String2);
*String2++;
}
while(1);
}

```

TEMPRATURE WORKING

```

#include <pic18f4550.h>
#include<stdio.h>
#define LCD_EN LATAbits.LA1
#define LCD_RS LATAbits.LA0
#define LCDPORT LATB

```

```

unsigned char str[16];

void lcd_delay(unsigned int time)
{
    unsigned int i,j;
    for(i=0;i<time;i++){
        for(j=0;j<100;j++);
    }
}

void SendInstruction(unsigned char command){
    LCD_RS=0;
    LCDPORT= command;
    LCD_EN=1;
    lcd_delay(10);
    LCD_EN=0;
    lcd_delay(10);
}

void SendData(unsigned char lcddata){
    LCD_RS=1;
    LCDPORT= lcddata ;
    LCD_EN=1;
    lcd_delay(10);
    LCD_EN=0;
    lcd_delay(10);
}

void InitLCD(void)
{
    ADCON1= 0X0F;
    TRISB=0X00;
    TRISAbits.RA0=0;
    TRISAbits.RA1=0;
    SendInstruction(0x38);
    SendInstruction(0x06);
    SendInstruction(0x0C);
    SendInstruction(0x01);
    SendInstruction(0x80);
}

void LCD_display(unsigned int row,unsigned int pos,unsigned char *ch)
{
    if(row==1)
        SendInstruction(0x80 | (pos-1));
}

```

```

    else
        SendInstruction(0xC0 | (pos-1));
    while(*ch)
        SendData(*ch++);
}

```

```

void ADCInit(void){
    TRISEbits.RE2=1;

    ADCON1=0b00000111;

    ADCON2=0b10101110;}

```

```

unsigned short Read_Temp(void){
    ADCON0=0b00011101;
    GODONE=1;

    while(GO_DONE==1);
    return ADRES;
}

```

```

int main(void)
{
    unsigned int temp;
    InitLCD();
    ADCInit();
    LCD_display(1,1,"Temperature:");
    while(1)
    {
        temp = Read_Temp();
        temp = ((temp * 500) / 1023);
        sprintf(str,"%d'C ",temp);
        LCD_display(2,1,str);
        lcd_delay(9000);
    }
    return 0;
}

```

LED WORKING

```
#include<xc.h>
```

```

#include<p18f4550.h>
void delay(unsigned int time)
{
    unsigned int i, j;
    for(i=0; i< time; i++){
        for(j=0; j<5000; j++){
        }
    }
}

void main(void){
    TRISB=0x00;
    LATB=0xFF;
    while(1){
        LATB=~LATB;
        delay(200);
    }
}

```

DC MOTOR WORKING

```

#include<p18f4550.h>

unsigned char count = 0;
bit TIMER, SPEED_UP;

void timer2Init(void) {
    T2CON = 0b00000010;
    PR2 = 0x95;
}

void delay(unsigned int time) {
    unsigned int i, j;
    for(i = 0; i < time; i++) {
        for(j = 0; j < 1000; j++);
    }
}

void main() {
    unsigned int i;
    TRISCbits.TRISC1 = 0;
    TRISCbits.TRISC2 = 0;
    LATCbits.LATC1 = 0;
    CCP1CON = 0b00111100;
}

```

```

//CCP1CON<4::5> = <1::1>
CCPR1L = 0x0F;
timer2Init();
TMR2ON = 1;
while(1) {
    for(i = 15; i < 150; i++) {
        CCPR1L = i;
        delay(100);
    }
    for(i = 150; i > 15; i--) {
        CCPR1L = i;
        delay(100);
    }
}
}

```

Buzzer WORKING

```

#include<xc.h>
#include<pic18f4550.h>
#define Buzzer LATAbits.LATA5
unsigned int count =0;
void interrupt Timer1_ISR()
{
    if(TMR1IF==1)
    {
        TMR1L=0x20;
        TMR1H=0xD1;
        count++;
        if (count>=1000)
        {
            Buzzer=~Buzzer;
            count=0;
        }
    }
    TMR1IF=0;
}
void main()
{
    TRISB=0;
    TRISAbits.TRISA5=0;
    GIE=1;
    PEIE=1;
}

```

```

TMR1IE=1;
TMR1IF=0;
T1CON=0x80;
TMR1L=0x20;
TMR1H=0xD1;
TMR1ON=1;
while(1);
}

```

Addition working

```

#include <xc.h>
void main(void)
{
    unsigned int i,j,x;
    TRISB=0;
    LATB=0;
    i=0x04;
    j=0x05;
    x=i+j;
    PORTB=x;
    PORTC=i;
    PORTD=j;
    return;
}

```

Array Addition

```

#include <xc.h>
void main(void) {
    TRISD = 0;
    LATD = 0;
    unsigned int number[5] = {1,1,1,1,1};
    unsigned int sum = 0;
    for(unsigned int i=0;i<5;i++)
    {
        sum = sum + number[i];
    }
    PORTD = sum;
}

```

```
return;  
}
```

Memory exchange working

```
#include <xc.h>  
void main(void) {  
    int temp , i;  
    int array1[] = {0x11,0x12,0x13,0x14,0x15,0x16,0x17,0x18};  
    int array2[] = {0x51,0x52,0x53,0x54,0x55,0x56,0x57,0x58};  
    for(i=0; i <= 7; i++)  
    {  
        temp = array1[i];  
        array1[i] = array2[i];  
        array2[i] = temp;  
    }  
    return;  
}
```

Memory transfer

```
#include <xc.h>  
void main(void) {  
    int temp, i ;  
    int source [] = {0x21,0x22,0x23,0x24,0x25};  
    int dest [] = {0x00,0x00,0x00,0x00,0x00};  
    for(i=0; i <= 4 ; i++)  
    {  
        dest[i] = source[i];  
    }  
    return;  
}
```