```c
#include<lpc214x.h>
#include<stdio.h>
#define adc_sel 27 //for pinsel
#define clkdiv 8
#define ch0 0
#define burst_mode 16
#define pdn 21
#define start 24
#define done 31
#define lcdport IO0SET
#define lcdportclr IOCLR0
#define rs 12
#define en 13
#define TEMP_PIN    (1<<29) //P0.29 as Input to Temperature Sensor
#define TEMP_PIN_DIR  (1<<26) //Bit 27:26 of PINSEL1 register
#define _PDN_BIT 1<<21
#define _ADCR_START_MASK 7<<24
#define _ADCR_SEL_MASK 0x000000FF
#define _ADC0_START 1<<24

void delay(int t)
{
    int i,j;
    for(i=0;i<t;i++)
    for(j=0;j<5000;j++);
}
void cmnd()
{
    lcdportclr=(1<<rs);
//lcdportclr = (1<<rw);
    lcdport = (1<<en);
    delay(40);
    lcdportclr=(1<<en);
}
void lcdcmd(char ch)
{
  lcdport = ((ch&0xf0)<<13);
  cmnd();
  lcdportclr = ((ch&0xf0)<<13);

  lcdport = (((ch<<4)&0xf0)<<13);
  cmnd();
  lcdportclr = (((ch<<4)&0xf0)<<13);
}

void daten()
{
  lcdport=(1<<rs);
  //lcdportclr = (1<<rw);
  lcdport = (1<<en);
  delay(40);
  lcdportclr=(1<<en);
}

void lcddata(char ch)
{
  lcdport = ((ch&0xf0)<<13);
  daten();
  lcdportclr = ((ch&0xf0)<<13);

  lcdport = (((ch<<4)&0xf0)<<13);
  daten();
  lcdportclr = (((ch<<4)&0xf0)<<13);
}

void lcdstring(char *str)
{
  int j;
  for(j=0;str[j]!='\0';j++)
  {
    lcddata(str[j]);
  }
```

```
  }
  void lcd_init()
  {
    lcdcmd(0x02);
    lcdcmd(0x28);
    lcdcmd(0x01);
    lcdcmd(0x0e);
  }

  void io_init()
  {
    IODIR1|=(1<<16);
    PINSEL0=0x00000000;
    IODIR0=0xFFF;
  }
  void Adc0Init(unsigned char clk)
  {
    PCONP |= 0x00001000;//Power on the A/D converter 0
    //configure the A/D control register of A/D 0
    AD0CR =((unsigned long)(clk+1)<<8 ) | _PDN_BIT ;
  }
  unsigned int Adc0Read(unsigned char channel)
  {
    static unsigned val;
    AD0CR &= ~(_ADCR_START_MASK|_ADCR_SEL_MASK);  //stop the A/D converter by masking the
                              //start bits and channel selection bit
    AD0CR |=((unsigned long)(1)<<channel);      //Select the A/D channel
    AD0CR |=_ADC0_START;
    while(!(AD0GDR & (0x80000000)));          //Wait for the conversion to get over
                            //by monitoring the 28th bit of A/D data register
    AD0CR &= ~(_ADCR_START_MASK|_ADCR_SEL_MASK);  //Stop the conversion by masking the start bits

    val = AD0GDR;
    val = ((val>>6 & 0x03FF));            //Extract A/D result
    return(val);
  }
  int main()
  {
    float temperature=0.0;
    char result[5];
    PINSEL1 |=  TEMP_PIN_DIR; //Bit 27:26 of PINSEL1 register
    IODIR0  &=  ~(TEMP_PIN);  //Select the AD0.2 of P0.29 as Input

    io_init();
    lcd_init();
    lcdcmd(0x84);
    lcdstring("Temperature");
    Adc0Init(10);

    while(1)
    {

          temperature = (((float)Adc0Read(4)/1023.0)*3.3*100);
          lcdcmd(0xc5);
          sprintf(result,"%f",temperature);
          lcdstring(result);
          lcddata(0xDF);  //for degree character
          lcddata('C');
          delay(100);
          if(temperature>=0 && temperature <=70)
          {
            IOCLR1=(1<<16);
          }
          if(temperature>=70 && temperature<=150)
          {
            IOSET1=(1<<16);
          }
    }
  }
```