#include <18f4520.h>

#DEVICE ADC=10

#fuses INTRC\_IO,NOPROTECT,BROWNOUT,NOMCLR,NOCPD,NOWDT,NOPUT,FCMEN

#byte adresh = 0x1e

#byte adresl = 0x9e

#define BUZZ\_ON OUTPUT\_HIGH(PIN\_D6);

#define BUZZ\_OFF OUTPUT\_LOW(PIN\_D6);

#define RS\_HI OUTPUT\_HIGH(PIN\_A5);

#define RS\_LO OUTPUT\_LOW(PIN\_A5);

#define EN\_HI OUTPUT\_HIGH(PIN\_A4);

#define EN\_LO OUTPUT\_LOW(PIN\_A4);

#define D4\_HI OUTPUT\_HIGH(PIN\_A3);

#define D4\_LO OUTPUT\_LOW(PIN\_A3);

#define D5\_HI OUTPUT\_HIGH(PIN\_A2);

#define D5\_LO OUTPUT\_LOW(PIN\_A2);

#define D6\_HI OUTPUT\_HIGH(PIN\_A1);

#define D6\_LO OUTPUT\_LOW(PIN\_A1);

#define D7\_HI OUTPUT\_HIGH(PIN\_A0);

#define D7\_LO OUTPUT\_LOW(PIN\_A0);

#define trigg\_ON OUTPUT\_HIGH(PIN\_B1);

#define trigg\_OFF OUTPUT\_LOW(PIN\_B1);

#define RLY1\_ON OUTPUT\_HIGH(PIN\_D2);

#define RLY1\_OFF OUTPUT\_LOW(PIN\_D2);

#define RLY5\_ON OUTPUT\_HIGH(PIN\_C1);

#define RLY5\_OFF OUTPUT\_LOW(PIN\_C1);

#define RLY3\_ON OUTPUT\_HIGH(PIN\_C5);

#define RLY3\_OFF OUTPUT\_LOW(PIN\_C5);

#define RLY4\_ON OUTPUT\_HIGH(PIN\_C4);

#define RLY4\_OFF OUTPUT\_LOW(PIN\_C4);

#define RLY2\_ON OUTPUT\_HIGH(PIN\_D3);

#define RLY2\_OFF OUTPUT\_LOW(PIN\_D3)

int16 uildr\_adc = 0;

int8 ucobstacle = 0;

int8 ucdust1 = 0;

int8 ucdust2 = 0;

int8 uc1level = 0;

int8 uc2level = 0;

int8 uc3level = 0;

volatile int8 Q1\_array[67] = {0,0,0,0,0,0,0,0,0,0,0};

int16 uiVltg = 0;

int8 ucRxTimOut = 0;

int8 ucwater=0;

int16 uimoistadc = 0;

int16 ui4SecCNT = 0;

int8 ucmetalf = 0;//1;//10;

int8 ucdisplayf = 0;

int16 ui10SecCNT = 0;

int16 ui2SecCNT = 0;

int16 uiLcd10Sec = 80;

int8 ucuser\_f = 0;

int16 ui5SecCnt = 0;

int16 uiprev\_xaxis = 0;

int16 uiprev\_yaxis = 0;

int16 uiprev\_zaxis = 0;

BYTE CONST ucBLANK\_Array[17] = " ";//1

BYTE CONST ucWelcm\_1\_Array[17] = "IOT BASED SMART ";//22

BYTE CONST ucWelcm\_2\_Array[17] = "HYDROPHONIC FARM";//23

BYTE CONST ucCITY1\_Array[17] = "PH: TEMP: ";//24

BYTE CONST ucCITY2\_Array[17] = "H: % WL: ";//25

BYTE CONST ucCITY3\_Array[17] = "WET: % ";//25

BYTE CONST ucCITY4\_Array[17] = "S: D: P: ";//25

void main(void)

{

SETUP\_ADC(ADC\_OFF); //disable ADC i/p

SETUP\_ADC\_PORTS(NO\_ANALOGS); //disable analog i/p

setup\_comparator(NC\_NC\_NC\_NC);

SETUP\_CCP1(CCP\_OFF);

SET\_TRIS\_A(0x5D);//0110 1100

SET\_TRIS\_B(0x1F);//0000 1000

SET\_TRIS\_C(0x87);//1000 0010

SET\_TRIS\_D(0xF0);//1111 0001

SET\_TRIS\_E(0x07);//0000 0111

SETUP\_TIMER\_1(T1\_INTERNAL|T1\_DIV\_BY\_8); //enables timer1

SET\_TIMER1(40536); // timer of 200ms (64286);//10msec

enable\_interrupts(INT\_RDA);

ENABLE\_INTERRUPTS(INT\_TIMER1);

setup\_timer\_2(T2\_DIV\_BY\_16, 30, 1);//(1/10000000)\*4\*16\*32= 204.3 us or 3.1 khz

set\_pwm1\_duty(0);//ok

LCD\_WRITE\_Const\_ARRAY(1,0,15,16);//Blank

LCD\_WRITE\_Const\_ARRAY(2,0,16,16);//Blank

trigg\_ON;

delay\_ms(500);

trigg\_OFF;

sel\_ON;

printf("AT+IFC=1,0\r\n");

delay\_ms(500);

printf("AT+CMGF=1\r\n");

delay\_ms(500);

ucSmsNo = '1';

for(ucArrPtr = 0;ucArrPtr < 77;ucArrPtr++)

{

ucRxARR[ucArrPtr] = 0;

}

ucdisplayf = 1;

index = 0;

ucvar1 = 70;

ui1SecCNT =500;

sel\_ON;

ucsel\_hi = 1;

ucpowerf = 1;

uc2ndpowerf = 1;

uiLcd10Sec = 30;

LCD\_WRITE\_Const\_ARRAY(1,0,17,16);//Blank

LCD\_WRITE\_Const\_ARRAY(2,0,18,16);//Blank

while(1)

{

if(uiLcd10Sec == 1)

{

uiLcd10Sec = 100;

INIT\_LCD();

LCD\_WRITE\_Const\_ARRAY(1,0,17,16);//Blank

LCD\_WRITE\_Const\_ARRAY(2,0,18,16);//Blank

}

Get\_Key();

ADC\_CALL(8);//Lamp Current

uiprev\_yaxis = (150-(current\_adc\_val/4));

Show\_Float\_No\_ONLine\_At\_Offset\_IntDig\_FltDig(1,13,uiprev\_yaxis,2,0);

if(uiprev\_yaxis > 135)

{

RLY3\_ON;

}

else if(uiprev\_yaxis < 132)

{

RLY3\_OFF;

}

ADC\_CALL(9);//ldr

uimoistadc = (1024-current\_adc\_val);

Show\_Float\_No\_ONLine\_At\_Offset\_IntDig\_FltDig(2,2,uimoistadc,3,0);

if(uimoistadc > 10)

{

RLY4\_ON;

}

else

{

RLY4\_OFF;

}

ADC\_CALL(11);//PH

uiGas\_adc = current\_adc\_val;

Show\_Float\_No\_ONLine\_At\_Offset\_IntDig\_FltDig(2,13,uiGas\_adc,3,0);

if(uiGas\_adc<= 80)

{

ucdust1 = 0;

}

else if((uiGas\_adc > 80)&&(uiGas\_adc < 150))

{

ucdust1 = 2;

}

else if((uiGas\_adc > 150)&&(uiGas\_adc < 180))

{

ucdust1 = 3;

}

else if((uiGas\_adc > 180)&&(uiGas\_adc < 200))

{

ucdust1 = 4;

}

else if((uiGas\_adc > 200)&&(uiGas\_adc < 220))

{

ucdust1 = 5;

}

else if((uiGas\_adc > 220)&&(uiGas\_adc < 240))

{

ucdust1 = 6;

}

else if((uiGas\_adc > 240)&&(uiGas\_adc < 300))

{

ucdust1 = 7;

}

else if((uiGas\_adc >= 300)&&(uiGas\_adc < 350))

{

ucdust1 = 8;

}

Show\_Float\_No\_ONLine\_At\_Offset\_IntDig\_FltDig(1,3,ucdust1,1,0);

ADC\_CALL(12);//ldr

uildr\_adc = current\_adc\_val;

if(uildr\_adc > 900)

{

RLY1\_ON;

}

else

{

RLY1\_OFF;

}

if(INPUT(PIN\_D7) == 0)//water level

{

ucwater = 0;

RLY2\_ON;

}

else

{

ucwater = 1;

RLY2\_OFF;

}

Show\_Float\_No\_ONLine\_At\_Offset\_IntDig\_FltDig(2,9,ucwater,1,0);

if(ui1SecCNT == 1)

{

ui1SecCNT = 500;

BUZZ\_ON;

delay\_ms(500);

BUZZ\_OFF;

printf("AT+CGATT?\r\n");

delay\_ms(1300);

printf("AT+SAPBR=3,1,\"CONTYPE\",\"GPRS\"\r\n");

delay\_ms(1300);

printf("AT+SAPBR=1,1\r\n");

delay\_ms(1300);

printf("AT+HTTPINIT\r\n");

delay\_ms(1300);

putc(((uiprev\_yaxis/10)%10)+0x30);

putc(((uiprev\_yaxis/1)%10)+0x30);

printf("&field4=");

putc(((uimoistadc/100)%10)+0x30);

putc(((uimoistadc/10)%10)+0x30);

putc(((uimoistadc/1)%10)+0x30);

putc('"');

putc('\r');

putc('\n');

delay\_ms(1300);

printf("AT+HTTPACTION=0\r\n");

delay\_ms(1300);

printf("AT+HTTPTERM\r\n");

delay\_ms(1300);

}

}