#include <Wire.h>

#include <SoftwareSerial.h>

#include <LiquidCrystal\_I2C.h>

SoftwareSerialmySerial(6,7);

LiquidCrystal\_I2C lcd(0x3F, 20, 4);

int DAY\_NIGHT\_LDR=13;

int STREET\_LDR\_1=A0;

int STREET\_LDR\_2=A1;

int STREET\_LDR\_3=A2;

int STREET\_LDR\_4=A3;

int STREET\_LDR\_1\_state=0,STREET\_LDR\_2\_state=0;

int STREET\_LDR\_3\_state=0,STREET\_LDR\_4\_state=0;

int DAY\_NIGHT\_LDR\_state=0;

int light\_1=0,light\_2=0,light\_3=0,light\_4=0;

int sms\_count=0;

void setup()

{

Serial.begin(9600);

mySerial.begin(9600);

Serial.println("Start");

delay(50);

pinMode(DAY\_NIGHT\_LDR,INPUT);

pinMode(STREET\_LDR\_1,INPUT);

pinMode(STREET\_LDR\_2,INPUT);

pinMode(STREET\_LDR\_3,INPUT);

pinMode(STREET\_LDR\_4,INPUT);

digitalWrite(DAY\_NIGHT\_LDR, HIGH);

digitalWrite(STREET\_LDR\_1, HIGH);

digitalWrite(STREET\_LDR\_2, HIGH);

digitalWrite(STREET\_LDR\_3, HIGH);

digitalWrite(STREET\_LDR\_4, HIGH);

lcd.begin();

lcd.backlight();

lcd.clear();

lcd.setCursor(0,0);

lcd.print(" Smart ");

lcd.setCursor(0,1);

lcd.print("Street Light");

delay(2000);

lcd.clear();

}

void loop()

{

read\_street\_light();

delay(1000);

lcd.clear();

DAY\_NIGHT\_LDR\_state = digitalRead(DAY\_NIGHT\_LDR);

if(DAY\_NIGHT\_LDR\_state==LOW)

{

lcd.setCursor(0,0);

lcd.print("DAY ");

if(light\_1==1 || light\_2==1 || light\_3==1 || light\_4==1)

{

lcd.setCursor(6,0);

lcd.print("Error ");

lcd.setCursor(0,1);

lcd.print("Light On In Day ");

delay(2000);sms\_count++;

if(sms\_count<=3)send\_sms\_day\_1();

else send\_sms\_day\_2();

}

else sms\_count=0;

}

else

{

lcd.setCursor(0,0);

lcd.print("Night ");

if(light\_1==0 || light\_2==0 || light\_3==0 || light\_4==0)

{

lcd.setCursor(6,0);

lcd.print("Error ");

lcd.setCursor(0,1);

lcd.print("Light Off In Night ");

delay(2000);

sms\_count++;

if(sms\_count<=3)send\_sms\_night\_1();

else send\_sms\_night\_2();

}

else sms\_count=0;

}

}

void read\_street\_light()

{

STREET\_LDR\_1\_state = digitalRead(STREET\_LDR\_1);

STREET\_LDR\_2\_state = digitalRead(STREET\_LDR\_2);

STREET\_LDR\_3\_state = digitalRead(STREET\_LDR\_3);

STREET\_LDR\_4\_state = digitalRead(STREET\_LDR\_4);

lcd.clear();

if(STREET\_LDR\_1\_state==LOW)

{lcd.print("L1-On ");light\_1=1;}

if(STREET\_LDR\_1\_state==HIGH)

{lcd.print("L1-OFF ");light\_1=0;}

if(STREET\_LDR\_2\_state==LOW)

{lcd.print("L2-On ");light\_2=1;}

if(STREET\_LDR\_2\_state==HIGH)

{lcd.print("L2-OFF ");light\_2=0;}

lcd.setCursor(0,1);

if(STREET\_LDR\_3\_state==LOW)

{lcd.print("L3-On ");light\_3=1;}

if(STREET\_LDR\_3\_state==HIGH)

{lcd.print("L3-OFF ");light\_3=0;}

if(STREET\_LDR\_4\_state==LOW)

{lcd.print("L4-On ");light\_4=1;}

if(STREET\_LDR\_4\_state==HIGH)

{lcd.print("L4-OFF ");light\_4=0;}

delay(1000);

}

void send\_sms\_day\_1()

{

Serial.println("send\_sms\_day\_1");

lcd.clear();

lcd.setCursor(0,0);

lcd.print("Sms Sending...");

lcd.print(sms\_count);

lcd.setCursor(0,1);

lcd.print("No.");

lcd.print("918169216257");

mySerial.println("AT&W");

delay(1000);

mySerial.println("AT+CMGF=1");

delay(1000);

mySerial.println("AT+CMGS=\"+918169216257\"\r");

delay(1000);

mySerial.println("System Error Light On In Day Time");

delay(100);

if(light\_1==1)mySerial.println("Light 1 on");

if(light\_2==1)mySerial.println("Light 2 on");

if(light\_3==1)mySerial.println("Light 3 on");

if(light\_4==1)mySerial.println("Light 4 on");

delay(30000);

}

void send\_sms\_night\_1()

{

Serial.println("send\_sms\_night\_1");

lcd.clear();

lcd.setCursor(0,0);

lcd.print("Sms Sending...");

lcd.print(sms\_count);

lcd.setCursor(0,1);

lcd.print("No.");

lcd.print("918169216257");

mySerial.println("AT&W");

delay(1000);

mySerial.println("AT+CMGF=1");

delay(1000);

mySerial.println("AT+CMGS=\"+918169216257\"\r");

delay(1000);

mySerial.println("System Error Light OFF In Night Time");

delay(100);

if(light\_1==0)mySerial.println("Light 1 off");

if(light\_2==0)mySerial.println("Light 2 off");

if(light\_3==0)mySerial.println("Light 3 off");

if(light\_4==0)mySerial.println("Light 4 off");

delay(30000);

}

void send\_sms\_day\_2()

{

Serial.println("send\_sms\_day\_2");

lcd.clear();

lcd.setCursor(0,0);

lcd.print("Sms Sending...");

lcd.print(sms\_count);

lcd.setCursor(0,1);

lcd.print("No.");

lcd.print("918291698228");

mySerial.println("AT&W");

delay(1000);

mySerial.println("AT+CMGF=1");

delay(1000);

mySerial.println("AT+CMGS=\"+918291698228\"\r");

delay(1000);

mySerial.println("System Error Light On In Day Time");

delay(100);

if(light\_1==1)mySerial.println("Light 1 on");

if(light\_2==1)mySerial.println("Light 2 on");

if(light\_3==1)mySerial.println("Light 3 on");

if(light\_4==1)mySerial.println("Light 4 on");

delay(30000);

}

void send\_sms\_night\_2()

{

Serial.println("send\_sms\_night\_2");

lcd.clear();

lcd.setCursor(0,0);

lcd.print("Sms Sending...");

lcd.print(sms\_count);

lcd.setCursor(0,1);

lcd.print("No.");

lcd.print("918291698228");

mySerial.println("AT&W");

delay(1000);

mySerial.println("AT+CMGF=1");

delay(1000);

mySerial.println("AT+CMGS=\"+918291698228\"\r");

delay(1000);

mySerial.println("System Error Light OFF In Night Time");

delay(100);

if(light\_1==0)mySerial.println("Light 1 off");

if(light\_2==0)mySerial.println("Light 2 off");

if(light\_3==0)mySerial.println("Light 3 off");

if(light\_4==0)mySerial.println("Light 4 off");

delay(30000);

}