AUTOMATIC STREET LIGHT

Algorithm

POST 1:

#include<SPI.h>

#include<nRF24L01.h>

#include<RF24.h>

RF24 radio(7,8);

const byte address[6]="00001";

const int led=2,sensor=6,gnd=3,solargnd=4,solar=A0;

int sensorstate=0,solarstate=0;

void setup(){

Serial.begin(9600);

radio.begin();

radio.setPALevel(RF24\_PA\_MIN);

pinMode(led,OUTPUT);

pinMode(gnd,OUTPUT);

pinMode(solargnd,OUTPUT);

pinMode(sensor,INPUT);

delay(10);

pinMode(gnd,LOW);

delay(10);

digitalWrite(solargnd,LOW);

}

void loop(){

digitalWrite(led,LOW);

start:

solarstate=analogRead(solar);

Serial.print("Solar:");

Serial.println(solarstate);

delay(10 );

if(solarstate>550){

goto start;

}

sensorstate=digitalRead(sensor);

//POST1 Sensor== YES

if(sensorstate==LOW){

digitalWrite(led,HIGH);

goto condition\_a;

}

if(sensorstate==HIGH){

radio.openReadingPipe(0,address);

radio.startListening();

if(radio.available()){

char recievea[32]="";

radio.read(&recievea,sizeof(recievea));

delay(10);

Serial.print("Recieve:");

Serial.println(recievea);

if(recievea[0]=='2'){

digitalWrite(led,HIGH);

goto condition\_b;

}

}else{

goto start;

}

}//end of reading the sensor

goto start;

condition\_a:

radio.stopListening();

radio.openWritingPipe(address);

const char transmita[]="A";

for(int i=0;i<6;i++){ //send "A" to channel 1

radio.write(&transmita,sizeof(transmita));

delay(10);

Serial.print("SENT:");

Serial.println(transmita);

}

while(1){

while1:

radio.openReadingPipe(0,address);

radio.startListening();

delay(10);

if(radio.available()){

char recieveb[32]="";

radio.read(&recieveb,sizeof(recieveb)) ;

delay(10);

Serial.print("Recieve:");

Serial.println(recieveb);

if(recieveb[0]=='3'){

digitalWrite(led,LOW);

}//recieve '3'

if(recieveb[0]=='5'){

goto start;

}

}

}goto while1;//WHILE1

condition\_b:

sensorstate=digitalRead(sensor);

if(sensorstate==LOW){

radio.stopListening();

radio.openWritingPipe(address);

const char transmitb[]="1";

for(int i=1;i<5;i++){

radio.write(&transmitb,sizeof(transmitb));

delay(10);

Serial.print("Sent:");

Serial.println(transmitb);

}

delay(20);

while(sensorstate==LOW){

sensorstate=digitalRead(sensor);

}

delay(20);

const char transmitc[]="0";

for(int i=1;i<5;i++){

radio.write(&transmitc,sizeof(transmitc));

delay(10);

Serial.print("Sent:");

Serial.println(transmitc);

}

delay(50);

radio.openReadingPipe(0,address);

radio.startListening();

char recieve[32]="";

for(int i=1;i<10;i++){

char recievec[32]="";

if(radio.available()){

radio.read(&recievec,sizeof(recievec));

delay(10);

Serial.print("Recieve:");

Serial.println(recievec);

}

delay(10);

}

delay(300);

digitalWrite(led,LOW);

goto start;

}

goto condition\_b;

}

POST 2:

#include<SPI.h>

#include<nRF24L01.h>

#include<RF24.h>

RF24 radio(7,8);

const byte address[6]="00001";

const int led=2,sensor=6,gnd=3;

int sensorstate=0;

void setup(){

Serial.begin(9600);

radio.begin();

radio.setPALevel(RF24\_PA\_MIN);

pinMode(gnd,OUTPUT);

pinMode(led,OUTPUT);

pinMode(sensor,INPUT);

delay(10);

digitalWrite(gnd,LOW);

}

void loop(){

digitalWrite(led,LOW);

start:

radio.openReadingPipe(0,address);

radio.startListening();

if(radio.available()){

char recievea[32]="";

radio.read(&recievea,sizeof (recievea));

delay(10);

Serial.print("Recieve:");

Serial.println(recievea);

if(recievea[0]=='A'){

digitalWrite(led,HIGH);

delay(10);

goto condition\_a;

}

if(recievea[0]=='3'){

digitalWrite(led,HIGH);

delay(10);

goto condition\_b;

}

}

goto start;

condition\_a:

sensorstate=digitalRead(sensor);

if(sensorstate==LOW){

radio.stopListening();

radio.openWritingPipe(address);

const char transmita[]="2";

for(int i=1;i<5;i++){

radio.write(&transmita,sizeof(transmita));

delay(10);

Serial.print("Sent");

Serial.println(transmita);

}

delay(10);

while(1){

radio.openReadingPipe(0,address);

radio.startListening();

if(radio.available()){

char recieveb[32]="";

radio.read(&recieveb,sizeof(recieveb));

if(recieveb[0]=='4'){

digitalWrite(led,LOW);

}

if(recieveb[0]=='5'){

delay(10);

goto start;

}

}

}

}

goto condition\_a;

condition\_b:

sensorstate=digitalRead(sensor);

if(sensorstate==LOW){

radio.stopListening();

radio.openWritingPipe(address);

const char transmita[]="2";

for(int i=1;i<5;i++){

radio.write(&transmita,sizeof(transmita));

delay(10);

Serial.print("Sent");

Serial.println(transmita);

}

delay(10);

while(1){

radio.openReadingPipe(0,address);

radio.startListening();

if(radio.available()){

char recieveb[32]="";

radio.read(&recieveb,sizeof(recieveb));

if(recieveb[0]=='0'){

digitalWrite(led,LOW);

delay(10);

goto start;

}

}

}

}

goto condition\_b;

}

POST 3:

#include<SPI.h>

#include<nRF24L01.h>

#include<RF24.h>

RF24 radio(7,8);

const byte address[6]="00001";

const int led=2,sensor=6;

int sensorstate=0;

void setup(){

Serial.begin(9600);

radio.begin();

radio.setPALevel(RF24\_PA\_MIN);

pinMode(led,OUTPUT);

pinMode(sensor,INPUT);

}

void loop(){

digitalWrite(led,LOW);

start:

radio.openReadingPipe(0,address);

radio.startListening();

if(radio.available()){

char recievea[32]="";

radio.read(&recievea,sizeof (recievea));

delay(10);

Serial.print("Recieve:");

Serial.println(recievea);

if(recievea[0]=='2'){

digitalWrite(led,HIGH);

delay(10);

goto condition\_a;

}

if(recievea[0]=='B'){

digitalWrite(led,HIGH);

delay(10);

goto condition\_b;

}

}

goto start;

condition\_a:

sensorstate=digitalRead(sensor);

if(sensorstate==LOW){

radio.stopListening();

radio.openWritingPipe(address);

const char transmita[]="3";

for(int i=1;i<5;i++){

radio.write(&transmita,sizeof(transmita));

delay(10);

Serial.print("Sent");

Serial.println(transmita);

}

delay(10);

while(1){

radio.openReadingPipe(0,address);

radio.startListening();

if(radio.available()){

char recieveb[32]="";

radio.read(&recieveb,sizeof(recieveb));

if(recieveb[0]=='5'){

digitalWrite(led,LOW);

delay(10);

goto start;

}

}

}

}

goto condition\_a;

condition\_b:

sensorstate=digitalRead(sensor);

if(sensorstate==LOW){

radio.stopListening();

radio.openWritingPipe(address);

const char transmita[]="3";

for(int i=1;i<5;i++){

radio.write(&transmita,sizeof(transmita));

delay(10);

Serial.print("Sent");

Serial.println(transmita);

}

delay(10);

while(1){

radio.openReadingPipe(0,address);

radio.startListening();

if(radio.available()){

char recieveb[32]="";

radio.read(&recieveb,sizeof(recieveb));

if(recieveb[0]=='1'){

digitalWrite(led,LOW);

}

if(recieveb[0]=='0'){

delay(10);

goto start;

}

}

}

}

goto condition\_b;

}

POST 4:

#include<SPI.h>

#include<nRF24L01.h>

#include<RF24.h>

RF24 radio(7,8);

const byte address[6]="00001";

const int led=2,sensor=6;

int sensorstate=0;

void setup(){

Serial.begin(9600);

radio.begin();

radio.setPALevel(RF24\_PA\_MIN);

pinMode(led,OUTPUT);

pinMode(sensor,INPUT);

}

void loop() {

start:

sensorstate=digitalRead(sensor);

if(sensorstate==LOW){

digitalWrite(led,HIGH);

delay(10);

goto condition\_b;

//goto condition b

}

delay(10);

radio.openReadingPipe(0,address);

radio.startListening();

if(radio.available()){

char recievea[32]="";

radio.read(&recievea,sizeof(recievea));

Serial.print("Recieve:");

Serial.println(recievea);

if(recievea[0]=='3'){

digitalWrite(led,HIGH);

goto condition\_a;

}

}

goto start;

condition\_a:

sensorstate=digitalRead(sensor);

if(sensorstate==LOW){

radio.stopListening();

radio.openWritingPipe(address);

const char transmitb[]="4";

for(int i=1;i<5;i++){

radio.write(&transmitb,sizeof(transmitb));

delay(10);

Serial.print("Sent:");

Serial.println(transmitb);

}

delay(20);

while(sensorstate==LOW){

sensorstate=digitalRead(sensor);

}

delay(20);

const char transmitc[]="5";

for(int i=1;i<5;i++){

radio.write(&transmitc,sizeof(transmitc));

delay(10);

Serial.print("Sent:");

Serial.println(transmitc);

}

delay(50);

radio.openReadingPipe(0,address);

radio.startListening();

char recieve[32]="";

for(int i=1;i<10;i++){

char recievec[32]="";

if(radio.available()){

radio.read(&recievec,sizeof(recievec));

delay(10);

Serial.print("Recieve:");

Serial.println(recievec);

}

delay(10);

}

delay(300);

digitalWrite(led,LOW);

goto start;

}

goto condition\_a;

condition\_b:

radio.stopListening();

radio.openWritingPipe(address);

const char transmita[]="B";

for(int i=0;i<6;i++){ //send "B" to channel 1

radio.write(&transmita,sizeof(transmita));

delay(10);

Serial.print("SENT:");

Serial.println(transmita);

}

while(1){

while1:

radio.openReadingPipe(0,address);

radio.startListening();

delay(10);

if(radio.available()){

char recieveb[32]="";

radio.read(&recieveb,sizeof(recieveb)) ;

delay(10);

Serial.print("Recieve:");

Serial.println(recieveb);

if(recieveb[0]=='2'){

digitalWrite(led,LOW);

}//recieve '3'

if(recieveb[0]=='1'){

goto start;

}

}

}goto while1;//WHILE1

}