 9/14/2023

// CLIENT Code

#include <RF24.h>

#include<SPI.h>

#include<Servo.h>

RF24 radio(9,10);

const byte address[6] = "00001";

int in1 = 5;

int in2 = 3;

int PWM1;

int MotorSpeed1 = 0;

int MotorSpeed2 = 0;

// Packet Length: payload of up to 32 bytes at a time (8 byte payload much higher success rate)

char input[8] = ""; //began at "32"

const char var1[8] = "motor"; //began at "32"

//////////// Set up Train Horn

int horn = 7;

int PWM2 = 0;

const char var2[8] = "horn";//((These must be same as Transmit}}

Servo servo;//For Man waving

//int motor = 6;

int angle2 = 0;

const char var3[8]="wave";//Jay changed to 6 began at 32

//////////// Set up Hummer Lights

#define led 2

int on = 0;

const char var4[8] = "light";//((These must be same as Transmit}}

void setup(){

Serial.begin(9600);

servo.attach(6);

pinMode(in1,OUTPUT);//H bridge

pinMode(in2,OUTPUT);//H Bridge

pinMode(horn,OUTPUT);//Set uo Train Horn

pinMode(2, OUTPUT);

radio.begin();

radio.openReadingPipe(0, address);

radio.setChannel(100); //Channels (0 -125) 1Mhz wide start at 2400Mhz-2525Mhz

radio.setDataRate(RF24\_250KBPS);//(RF24\_250KBPS); //nRF24 supports 250kbps, 1Mbs,2Mbps (250kbps most error free)

radio.enableAckPayload();

radio.enableDynamicPayloads();//Jay added

radio.setPALevel(RF24\_PA\_MAX);

radio.startListening();

}

void loop(){

while(!radio.available());

radio.setRetries(15, 15);

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

//MOTOR CONTROL

if((strcmp(input,var1) == 0))

{

while(!radio.available());

radio.read(&PWM1, sizeof(PWM1));

if (PWM1 < 125){

MotorSpeed1 = map(PWM1, 124,0, 0, 255);//Limit Reverse? by using (80, 0, 0, 255)?

analogWrite(in1, MotorSpeed1);

digitalWrite(in2, LOW);

}

else if (PWM1 >125){

MotorSpeed2 = map(PWM1, 125,255, 0, 255);

analogWrite(in2, MotorSpeed2);

digitalWrite(in1,LOW);

}

Serial.print("PWM1 Value:");

Serial.println(PWM1);

}

//Set up Train Horn

else if((strcmp(input,var2) == 0))

{

while(!radio.available());

radio.read(&PWM2, sizeof(PWM2));

analogWrite(horn,PWM2);

Serial.print("PWM2 Value:");

Serial.println(PWM2);

}

//SERVO CONTROL

else if((strcmp(input,var3) == 0))

{

while(!radio.available());

radio.read(&angle2, sizeof(angle2));

servo.write(angle2);

Serial.print("Angle2");

Serial.println(angle2);

}

//Set up Hummer Lights

else if((strcmp(input,var4) == 0))

{

while(!radio.available());

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

if(on==HIGH){digitalWrite(led, HIGH);

}

else{digitalWrite(led, LOW);

}

Serial.println(input);

Serial.print("on Value:");

Serial.println(on);

Serial.println("--------------------------------");

}

}