#include <Servo.h>;

char val; //Bluetooth Data holder

int pos=90; //Steering wheel initial position

Servo Steering; //Steering servo

void setup() {

Serial2.begin(9600); //Bluetooth port setup using MEGA's serial 2 (TX2/RX2)

Steering.attach(2); //Servo attach to MEGA's PWM Port 2

pinMode(50,OUTPUT); //Main motor's power switch

pinMode(51,OUTPUT); //Main motor's forward and reverse switch

pinMode(52,OUTPUT); //Main motor's forward and reverse switch

pinMode(53,OUTPUT); //Main motor's power switch

}

void loop()

{

digitalWrite(50,HIGH); // TURN-OFF MOTOR

digitalWrite(53,HIGH); // TURN-OFF MOTOR

if( Serial2.available() >0 )

{

val = Serial2.read();

Serial2.println(val);

}

//IF STOP

if( val == 'S' )

{

digitalWrite(50,HIGH); // TURN-OFF MOTOR

digitalWrite(53,HIGH); // TURN-OFF MOTOR

}

//IF FORWARD

if( val == 'F' )

{

digitalWrite(50,LOW); //TURN-ON MOTOR

digitalWrite(53,LOW); //TURN-ON MOTOR

digitalWrite(51,LOW); //

digitalWrite(52,LOW); //

}

if( val == 'B') //IF BACKWARD

{

digitalWrite(50,LOW); //TURN-ON MOTOR

digitalWrite(53,LOW); //TURN-ON MOTOR

digitalWrite(51,HIGH); //

digitalWrite(52,HIGH); //

}

//TURN RIGHT - Make Servo Turns From 90 to 20

if( val == 'R' )

{

if (pos < 120 ) // goes from 60 degrees to 120 degrees

{ // in steps of 1 degree

pos+=1;

Steering.write(pos); // tell servo to go to position in variable 'pos'

}

}

//TURN LEFT - Make Servo Turns From 90 to 160

if( val == 'L' )

{

if (pos > 60) // goes from 120 degrees to 60 degrees

{ // in steps of 1 degree

pos-=1;

Steering.write(pos); // tell servo to go to position in variable 'pos'

}

}

//MOVE FORWARD WHILE TURNING RIGHT

//I

if( val == 'I' )

{

digitalWrite(50,LOW); //TURN-ON MOTOR

digitalWrite(53,LOW); //TURN-ON MOTOR

digitalWrite(51,LOW); //

digitalWrite(52,LOW); //

if (pos < 120 ) // goes from 60 degrees to 120 degrees

{ // in steps of 1 degree

pos+=1;

Steering.write(pos); // tell servo to go to position in variable 'pos'

}

}

//MOVE FORWARD WHILE TURNING LEFT

//G

if( val == 'G' )

{

digitalWrite(50,LOW); //TURN-ON MOTOR

digitalWrite(53,LOW); //TURN-ON MOTOR

digitalWrite(51,LOW); //

digitalWrite(52,LOW); //

if (pos > 60) // goes from 120 degrees to 60 degrees

{ // in steps of 1 degree

pos-=1;

Steering.write(pos); // tell servo to go to position in variable 'pos'

}

}

//MOVE BACKWARD WHILE TURNING RIGHT

//J

if( val == 'J')

{

digitalWrite(50,LOW); //TURN-ON MOTOR

digitalWrite(53,LOW); //TURN-ON MOTOR

digitalWrite(51,HIGH); //

digitalWrite(52,HIGH); //

if (pos < 120 ) // goes from 60 degrees to 120 degrees

{ // in steps of 1 degree

pos+=1;

Steering.write(pos); // tell servo to go to position in variable 'pos'

}

}

//MOVE BACKWARD WHILE TURNING LEFT

//H

if( val == 'H')

{

digitalWrite(50,LOW); //TURN-ON MOTOR

digitalWrite(53,LOW); //TURN-ON MOTOR

digitalWrite(51,HIGH); //

digitalWrite(52,HIGH); //

if (pos > 60) // goes from 120 degrees to 60 degrees

{ // in steps of 1 degree

pos-=1;

Steering.write(pos); // tell servo to go to position in variable 'pos'

}

}

delay(10);

}