#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);

 }