#include <SoftwareSerial.h>

#include <Servo.h>

SoftwareSerial bluetooth(10, 11); // RX, TX

Servo myservo; // create servo object to control a servo

int leftMotorForward = 3;

int leftMotorBackward = 5;

int rightMotorForward = 6;

int rightMotorBackward = 9;

int servoPin = 8; // servo control pin

int servoPos = 0; // variable to store the servo position

void setup() {

pinMode(leftMotorForward, OUTPUT);

pinMode(leftMotorBackward, OUTPUT);

pinMode(rightMotorForward, OUTPUT);

pinMode(rightMotorBackward, OUTPUT);

Serial.begin(9600);

bluetooth.begin(9600);

myservo.attach(servoPin); // attaches the servo on pin 8 to the servo object

myservo.write(0); // sets the servo to its initial position (0 degrees)

}

void loop() {

if (bluetooth.available()) {

char command = bluetooth.read();

Serial.println(command);

if (command == 'F') {

// move both motors forward

digitalWrite(leftMotorForward, HIGH);

digitalWrite(leftMotorBackward, LOW);

digitalWrite(rightMotorForward, HIGH);

digitalWrite(rightMotorBackward, LOW);

}

else if (command == 'B') {

// move both motors backward

digitalWrite(leftMotorForward, LOW);

digitalWrite(leftMotorBackward, HIGH);

digitalWrite(rightMotorForward, LOW);

digitalWrite(rightMotorBackward, HIGH);

}

else if (command == 'L') {

// turn left by stopping the right motor

digitalWrite(leftMotorForward, HIGH);

digitalWrite(leftMotorBackward, LOW);

digitalWrite(rightMotorForward, LOW);

digitalWrite(rightMotorBackward, LOW);

}

else if (command == 'R') {

// turn right by stopping the left motor

digitalWrite(leftMotorForward, LOW);

digitalWrite(leftMotorBackward, LOW);

digitalWrite(rightMotorForward, HIGH);

digitalWrite(rightMotorBackward, LOW);

}

else if (command == 'S') {

// stop both motors

digitalWrite(leftMotorForward, LOW);

digitalWrite(leftMotorBackward, LOW);

digitalWrite(rightMotorForward, LOW);

digitalWrite(rightMotorBackward, LOW);

}

else if (command == 'P') {

// move the servo to a new position (90 degrees)

for (servoPos = 0; servoPos <= 90; servoPos += 1) {

myservo.write(servoPos); // tell servo to go to position in variable 'servoPos'

delay(15); // waits 15ms for the servo to reach the position

}

// move the servo back to its initial position (0 degrees)

for (servoPos = 90; servoPos >= 0; servoPos -= 1) {

myservo.write(servoPos); // tell servo to go to position in variable 'servoPos'

delay(15); // waits 15ms for the servo to reach the position

}

}

}

}