// Code for Ball Collector Robot

#include <SoftwareSerial.h>

#include <Servo.h>

Servo servoMotor;

int rx\_pin = 4;

int tx\_pin = 2;

SoftwareSerial BTserial(rx\_pin,tx\_pin);

char command;

char Arduino\_data;

// Define motor driver pins

#define ENA 8

#define IN1 9

#define IN2 10

#define ENB 13

#define IN3 11

#define IN4 12

void setup() {

// Define motor pins as OUTPUT

pinMode(ENA, OUTPUT);

pinMode(IN1, OUTPUT);

pinMode(IN2, OUTPUT);

pinMode(ENB, OUTPUT);

pinMode(IN3, OUTPUT);

pinMode(IN4, OUTPUT);

// Start serial communication with Bluetooth module

Serial.begin(9600);

BTserial.begin(9600);

servoMotor.attach(6);

}

void loop() {

if (BTserial.available() )

{

command = BTserial.read();

Serial.println(command);

}

if (Serial.available() )

{

Arduino\_data = Serial.read();

BTserial.println(Arduino\_data);

}

// Forward

if (command == 'F') {

digitalWrite(IN1, HIGH);

digitalWrite(IN2, LOW);

digitalWrite(IN3, HIGH);

digitalWrite(IN4, LOW);

analogWrite(ENA, 150); // Adjust speed as needed

analogWrite(ENB, 150);

}

// Backward

else if (command == 'B') {

digitalWrite(IN1, LOW);

digitalWrite(IN2, HIGH);

digitalWrite(IN3, LOW);

digitalWrite(IN4, HIGH);

analogWrite(ENA, 150); // Adjust speed as needed

analogWrite(ENB, 150);

}

// Left

else if (command == 'L') {

digitalWrite(IN1, LOW);

digitalWrite(IN2, HIGH);

digitalWrite(IN3, HIGH);

digitalWrite(IN4, LOW);

analogWrite(ENA, 150); // Adjust speed as needed

analogWrite(ENB, 150);

}

// Right

else if (command == 'R') {

digitalWrite(IN1, HIGH);

digitalWrite(IN2, LOW);

digitalWrite(IN3, LOW);

digitalWrite(IN4, HIGH);

analogWrite(ENA, 150); // Adjust speed as needed

analogWrite(ENB, 150);

}

// Stop

else if (command == 'S') {

digitalWrite(IN1, LOW);

digitalWrite(IN2, LOW);

digitalWrite(IN3, LOW);

digitalWrite(IN4, LOW);

analogWrite(ENA, 0);

analogWrite(ENB, 0);

}

else if(command == 'M') {

for (int angle = 100; angle <= 200; angle++) {

servoMotor.write(angle); // Set the servo position

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

}

}

else if(command == 'm') {

for (int angle = 200; angle >= 100; angle--) {

servoMotor.write(angle); // Set the servo position

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

}

}

}