int motor1Pin1 = 3; // pin 2 on L293D IC

int motor1Pin2 = 4; // pin 7 on L293D IC

int enable1Pin = 6; // pin 1 on L293D IC

int motor2Pin1 = 8; // pin 10 on L293D IC

int motor2Pin2 = 9; // pin 15 on L293D IC

int enable2Pin = 11; // pin 9 on L293D IC

int state;

int flag = 0; // makes sure that the serial only prints once the state

int stateStop = 0;

void setup() {

// sets the pins as outputs:

pinMode(motor1Pin1, OUTPUT);

pinMode(motor1Pin2, OUTPUT);

pinMode(enable1Pin, OUTPUT);

pinMode(motor2Pin1, OUTPUT);

pinMode(motor2Pin2, OUTPUT);

pinMode(enable2Pin, OUTPUT);

// sets enable1Pin and enable2Pin high so that motor can turn on:

digitalWrite(enable1Pin, HIGH);

digitalWrite(enable2Pin, HIGH);

// initialize serial communication at 9600 bits per second:

Serial.begin(9600);

}

void loop() {

// if data is available to read from serial monitor:

if (Serial.available() > 0) {

state = Serial.read(); // read the incoming data

flag = 0;

}

// control the motors based on the received state:

if (state == 'F') {

digitalWrite(motor1Pin1, HIGH);

digitalWrite(motor1Pin2, LOW);

digitalWrite(motor2Pin1, HIGH);

digitalWrite(motor2Pin2, LOW);

if (flag == 0) {

Serial.println("GO Forward!");

flag = 1;

}

} else if (state == 'B') {

digitalWrite(motor1Pin1, LOW);

digitalWrite(motor1Pin2, HIGH);

digitalWrite(motor2Pin1, LOW);

digitalWrite(motor2Pin2, HIGH);

if (flag == 0) {

Serial.println("Reverse!");

flag = 1;

}

} else if (state == 'R') {

digitalWrite(motor1Pin1, HIGH);

digitalWrite(motor1Pin2, LOW);

digitalWrite(motor2Pin1, LOW);

digitalWrite(motor2Pin2, LOW);

if (flag == 0) {

Serial.println("RIGHT TURN!");

flag = 1;

}

} else if (state == '1') {

digitalWrite(motor1Pin1, HIGH);

digitalWrite(motor1Pin2, LOW);

digitalWrite(motor2Pin1, LOW);

digitalWrite(motor2Pin2, HIGH);

if (flag == 0) {

Serial.println("SHARP RIGHT TURN!");

flag = 1;

}

} else if (state == 'L') {

digitalWrite(motor1Pin1, LOW);

digitalWrite(motor1Pin2, HIGH);

digitalWrite(motor2Pin1, HIGH);

digitalWrite(motor2Pin2, LOW);

if (flag == 0) {

Serial.println("LEFT TURN!");

flag = 1;

}

} else if (state == '2') {

digitalWrite(motor1Pin1, LOW);

digitalWrite(motor1Pin2, HIGH);

digitalWrite(motor2Pin1, HIGH);

digitalWrite(motor2Pin2, LOW);

if (flag == 0) {

Serial.println("SHARP LEFT TURN!");

flag = 1;

}

} else if (state == 'S') {

digitalWrite(motor1Pin1, LOW);

digitalWrite(motor1Pin2, LOW);

digitalWrite(motor2Pin1, LOW);

digitalWrite(motor2Pin2, LOW);

if (flag == 0) {

Serial.println("STOP!");

flag = 1;

}

}

// For debugging purpose

// Serial.println(state);

}