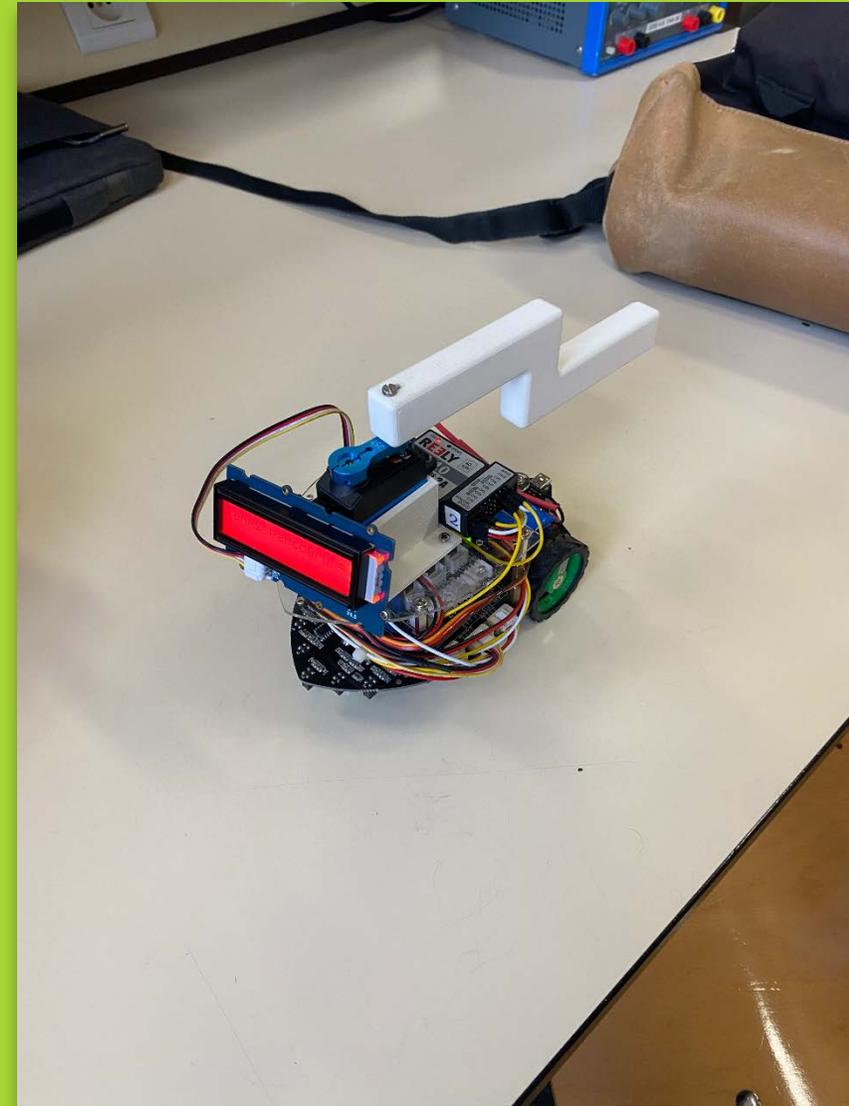


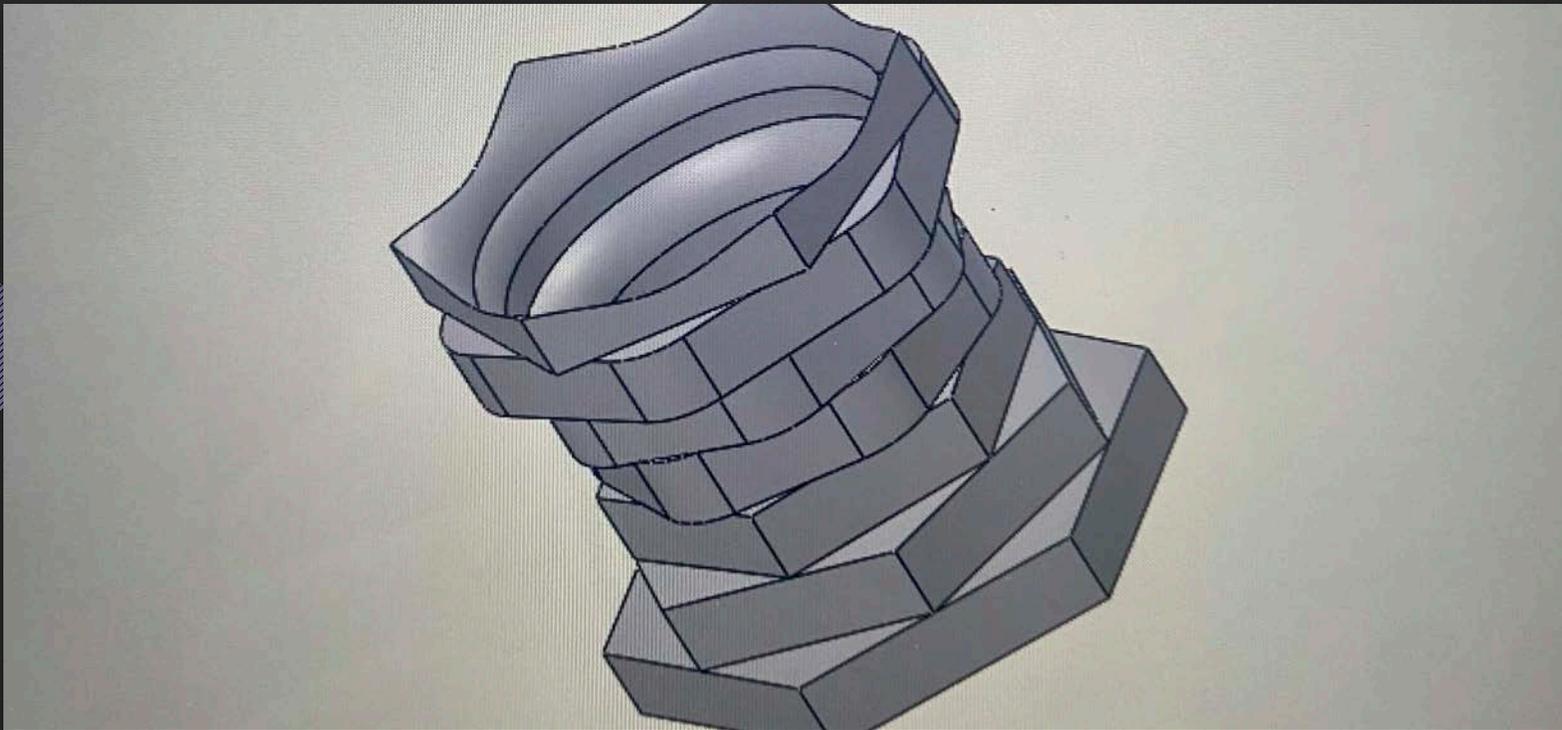
# Projet Robotik



# Qu'elles sont les objectifs de ce projet

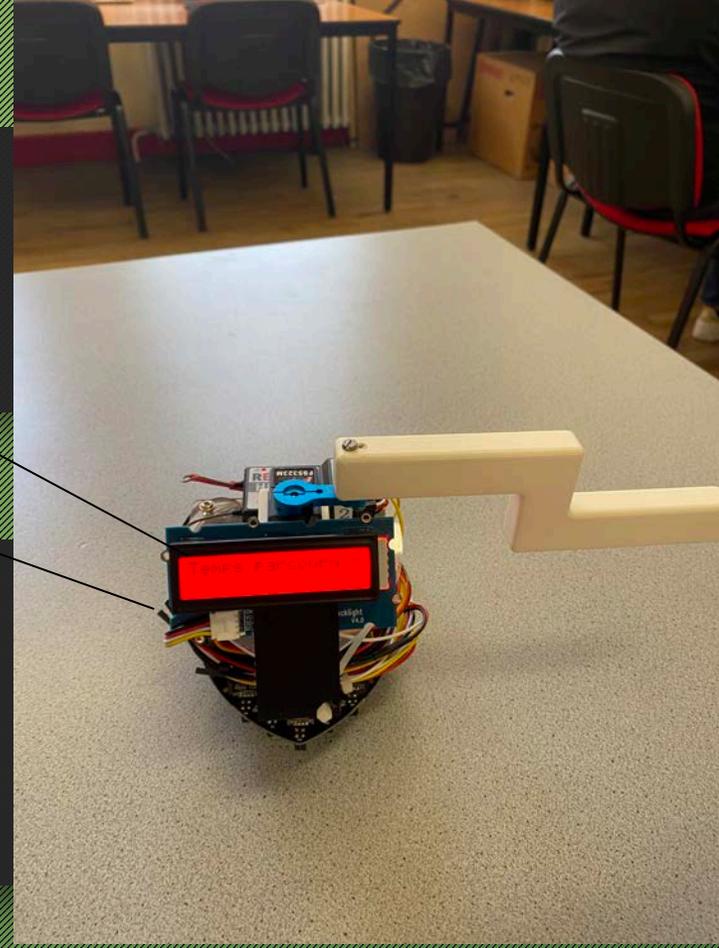
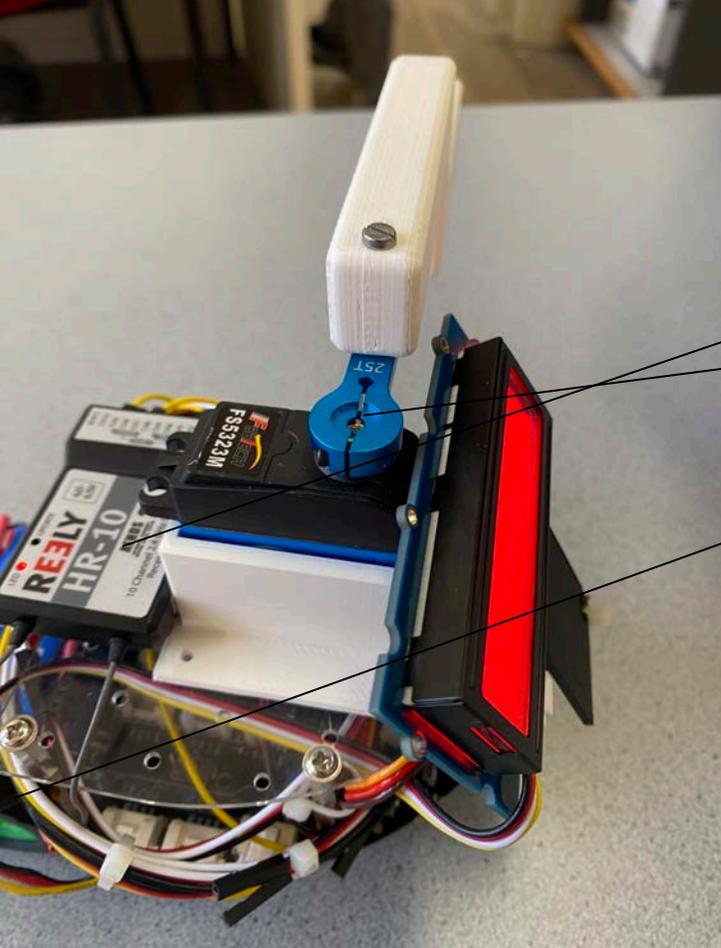
TEAM WORK





Cahier des charges

Première tâche



# Cahier des charges

Deuxièmes  
tâche

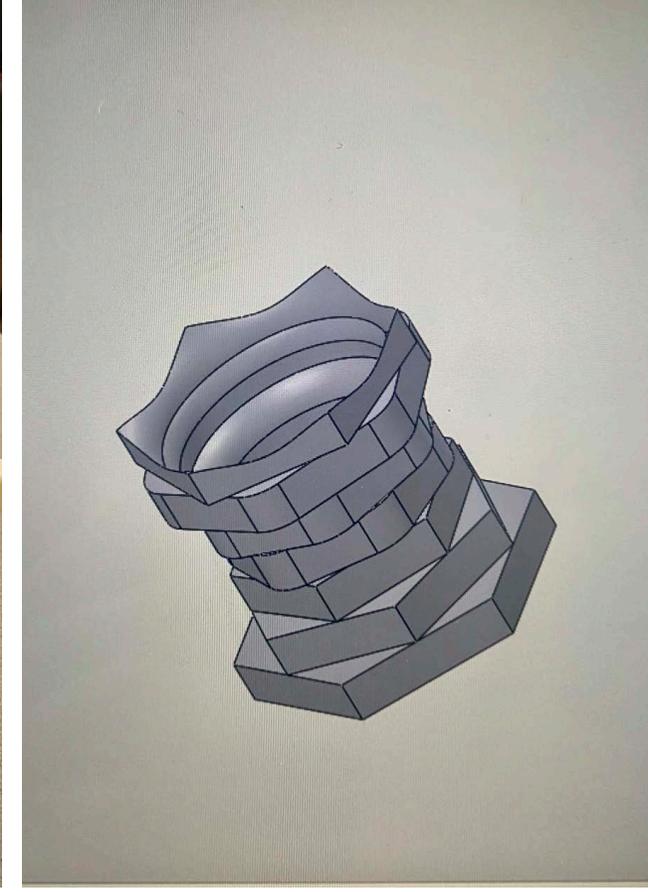
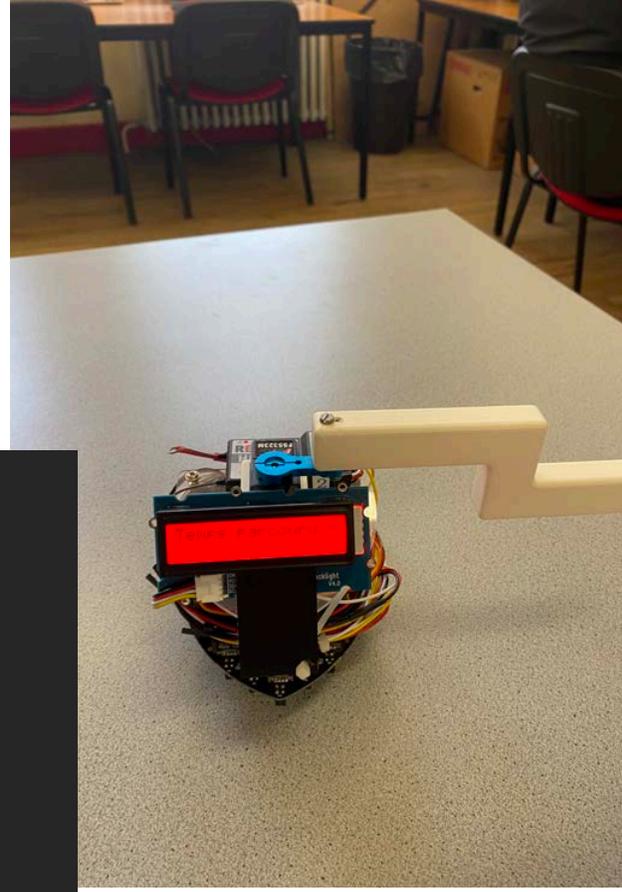
```
1 #include <Servo.h>
2 #include <rgb_lcd.h>
3 rgb_lcd lcd;
4 Servo myServo;
5
6 int MS = 0;
7 int S = 0;
8 int W = 0;
9
10 const int colorR = 255;
11 const int colorG = 0;
12 const int colorB = 0;
13
14 #define pinSpeedRightMotor 9
15 #define pinSpeedLeftMotor 10
16 #define pinForwardRightMotor 8
17 #define pinReverseRightMotor 11
18 #define pinForwardLeftMotor 12
19 #define pinReverseLeftMotor 13
20
21 #define pinSensor1 A0
22 #define pinSensor2 A1
23 #define pinSensor3 A2
24 #define pinSensor4 A3
25 #define pinSensor5 A4
26
27 int pulsePinServo = 7;
28 int pulsePinSpeed = 6;
29
30 unsigned long pulseDurationServo;
31 unsigned long pulseSpeed;
32
33 void setup() {
34     Serial.begin(9600);
35     pinMode(pinSpeedRightMotor, OUTPUT);
36     pinMode(pinSpeedLeftMotor, OUTPUT);
37     pinMode(pinForwardRightMotor, OUTPUT);
38     pinMode(pinReverseRightMotor, OUTPUT);
39     pinMode(pinForwardLeftMotor, OUTPUT);
40     pinMode(pinReverseLeftMotor, OUTPUT);
41     pinMode(pinSensor1, INPUT);
42     pinMode(pinSensor2, INPUT);
43     pinMode(pinSensor3, INPUT);
44
45     pinMode(pinSensor4, INPUT);
46     pinMode(pinSensor5, INPUT);
47
48     lcd.begin(16, 2);
49     lcd.setRGB(colorR, colorG, colorB);
50     lcd.print("Temps parcouru = " );
51
52     myServo.attach(5);
53
54 void loop() {
55     int sensor1 = digitalRead(pinSensor1);
56     int sensor2 = digitalRead(pinSensor2);
57     int sensor3 = digitalRead(pinSensor3);
58     int sensor4 = digitalRead(pinSensor4);
59     int sensor5 = digitalRead(pinSensor5);
60
61     pulseSpeed = pulseIn(pulsePinSpeed, HIGH);
62     int valueSpeed = map(pulseSpeed, 985, 1270, 1, 10);
63
64     if (valueSpeed == 1){
65         int valueMS = map(MS, 0, 25, 0, 60);
66         lcd.setCursor(1,1);
67         lcd.print("E=");
68         lcd.print(W);
69         lcd.print(" S=");
70         lcd.print(S);
71         lcd.print(" MS=");
72         lcd.print(valueMS);
73         delay(1);
74
75         MS = MS + 1;
76
77         if (MS == 25) {
78             S = S + 1;
79             W = W + 5,18;
80             MS = 0;
81         }
82     }
83
84     if (valueSpeed == 1) {
85         if (pulseDurationServo < 1500 && pulseDurationServo > 1300) {
86             myServo.write(90);
87         }
88         if (1300 > pulseDurationServo) {
89             myServo.write(0);
90         }
91         if (pulseDurationServo > 1800) {
92             myServo.write(180);
93         }
94         if (sensor3 == LOW) {
95             Forward();
96         }
97         else if (sensor4 == LOW) {
98             Left();
99         }
100         else if (sensor2 == LOW) {
101             Right();
102         }
103     }
104
105     void Forward() {
106         digitalWrite(pinForwardRightMotor, HIGH);
107         digitalWrite(pinForwardLeftMotor, HIGH);
108         digitalWrite(pinReverseRightMotor, LOW);
109         digitalWrite(pinReverseLeftMotor, LOW);
110     }
111
112     void Left() {
113         digitalWrite(pinForwardRightMotor, HIGH);
114         digitalWrite(pinForwardLeftMotor, LOW);
115         digitalWrite(pinReverseRightMotor, LOW);
116         digitalWrite(pinReverseLeftMotor, LOW);
117     }
118
119     void Right() {
120         digitalWrite(pinForwardRightMotor, LOW);
121         digitalWrite(pinForwardLeftMotor, HIGH);
122         digitalWrite(pinReverseRightMotor, LOW);
123         digitalWrite(pinReverseLeftMotor, LOW);
124     }
125
126     digitalWrite(pinSpeedLeftMotor, 1);
127     else {
128         digitalWrite(pinSpeedRightMotor, 0);
129         digitalWrite(pinSpeedLeftMotor, 0);
130     }
131     pulseDurationServo = pulseIn(pulsePinServo, HIGH);
132     if (pulseDurationServo < 1500 && pulseDurationServo > 1300) {
133         myServo.write(90);
134     }
135     if (1300 > pulseDurationServo) {
136         myServo.write(0);
137     }
138     if (pulseDurationServo > 1800) {
139         myServo.write(180);
140     }
141     if (sensor3 == LOW) {
142         Forward();
143     }
144     else if (sensor4 == LOW) {
145         Left();
146     }
147     else if (sensor2 == LOW) {
148         Right();
149     }
150 }
151
152 void Forward() {
153     digitalWrite(pinForwardRightMotor, HIGH);
154     digitalWrite(pinForwardLeftMotor, HIGH);
155     digitalWrite(pinReverseRightMotor, LOW);
156     digitalWrite(pinReverseLeftMotor, LOW);
157 }
158
159 void Left() {
160     digitalWrite(pinForwardRightMotor, HIGH);
161     digitalWrite(pinForwardLeftMotor, LOW);
162     digitalWrite(pinReverseRightMotor, LOW);
163     digitalWrite(pinReverseLeftMotor, LOW);
164 }
165
166 void Right() {
167     digitalWrite(pinForwardRightMotor, LOW);
168     digitalWrite(pinForwardLeftMotor, HIGH);
169     digitalWrite(pinReverseRightMotor, LOW);
170     digitalWrite(pinReverseLeftMotor, LOW);
171 }
```

# Cahier des charges

Résultat obtenu et  
résultat attendue



# Modification possible à l'avenir



```
void loop() {  
60  
61   int sensor1 = digitalRead(pinSensor1);  
62   int sensor2 = digitalRead(pinSensor2);  
63   int sensor3 = digitalRead(pinSensor3);  
64   int sensor4 = digitalRead(pinSensor4);  
65   int sensor5 = digitalRead(pinSensor5);  
66
```

## Conclusion



**ROBOTIK**