

The background features abstract geometric shapes in shades of green and blue. A red plus sign is located to the left of the title. Green 'x' marks are scattered in the top-left and bottom-right corners. A red circle is in the bottom-right corner.

Projet Arduino: The Destroyer

CLEMENT Andy / HADDOURY Hamza

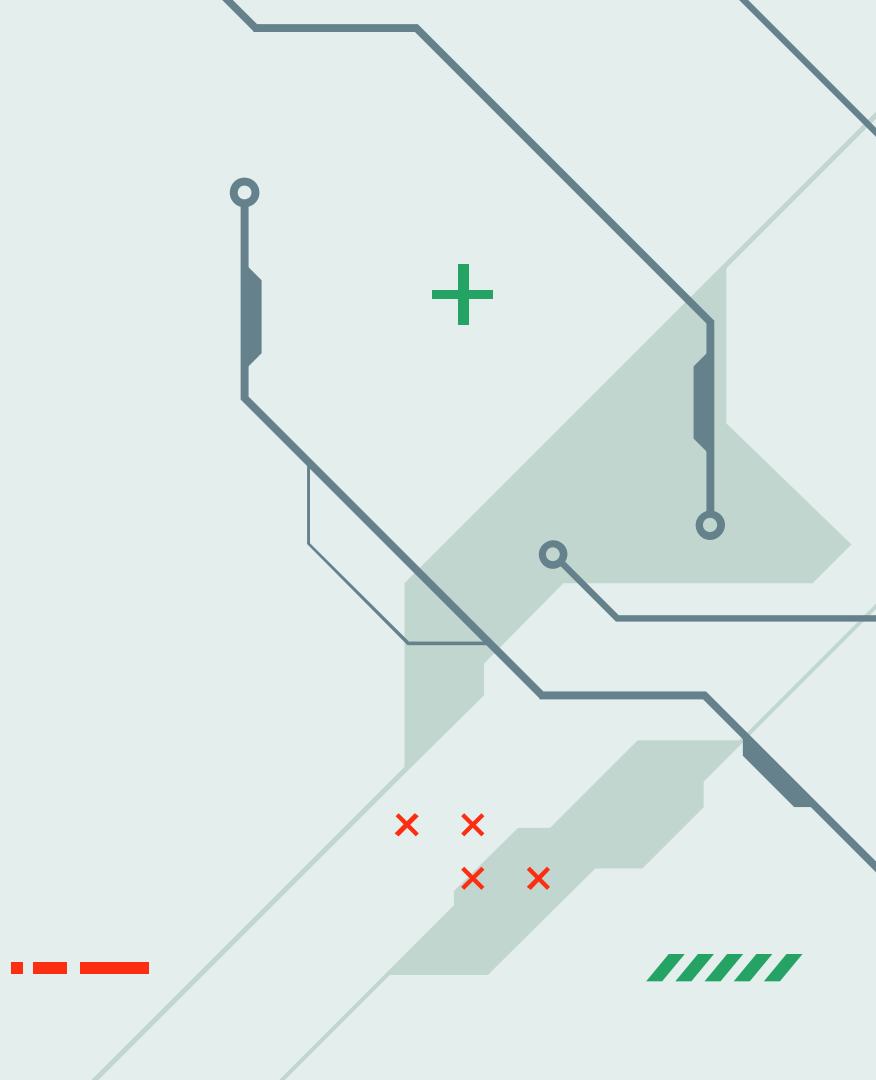
INTRODUCTION

Objectif:

- Objet mobile
- Contrôle à distance
- Utilisation simple et ludique

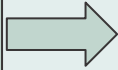
Cahier des charges:

- Tir de projectile (Canon)
- Communication bluetooth
- Marche avant/ marche arrière/ virage gauche/ virage droite
- Fonctionnement sur batterie

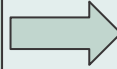


Fonctionnement général

Envoie des
information par
Bluetooth



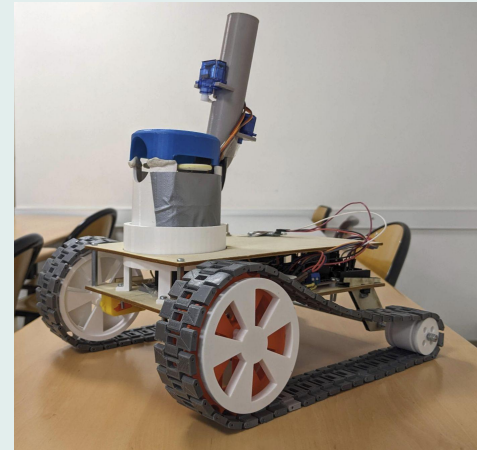
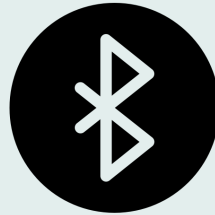
Réception par
des info par le
HC-05



Traitement par la
carte arduino
(Programme)



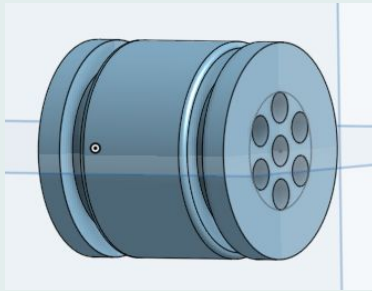
Réaction des
moteurs



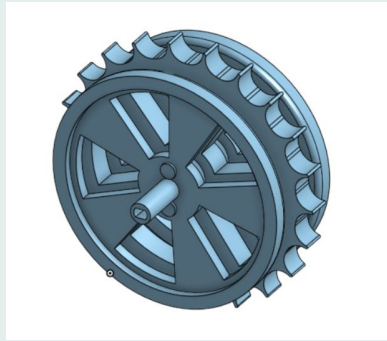
Conception (Châssis et roues)

Châssis et mouvement:

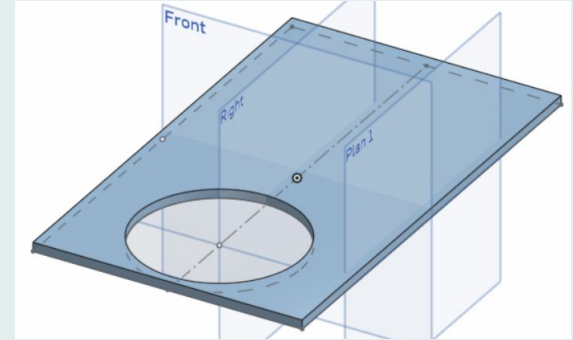
- Imagination de la forme du tank (Char FT-17)
- Placement des éléments dans le châssis
- Modélisation des roues et des supports de roue
- Conception via Onshape (prévention des problèmes)



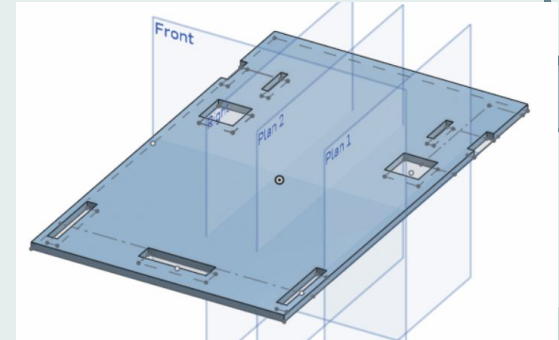
Roue arrière



Roue avant



Capot

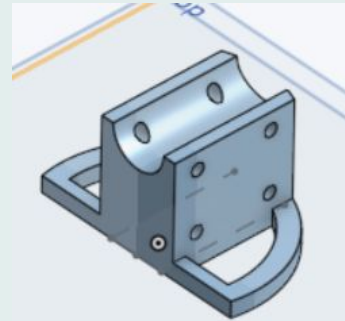
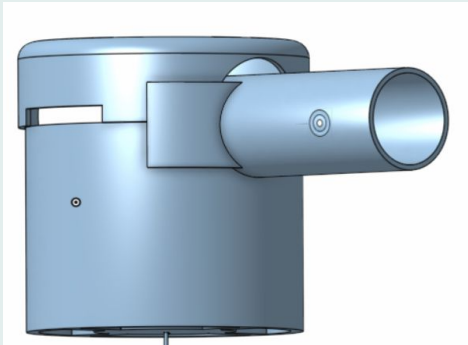
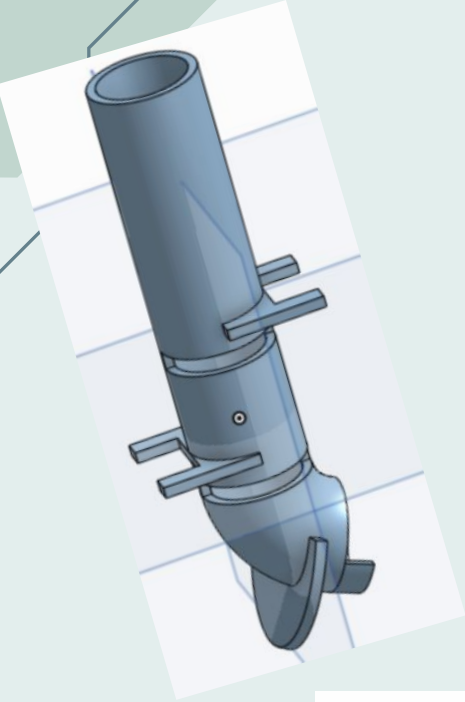


Châssis

Conception (Canon)

Supports et chargeur :

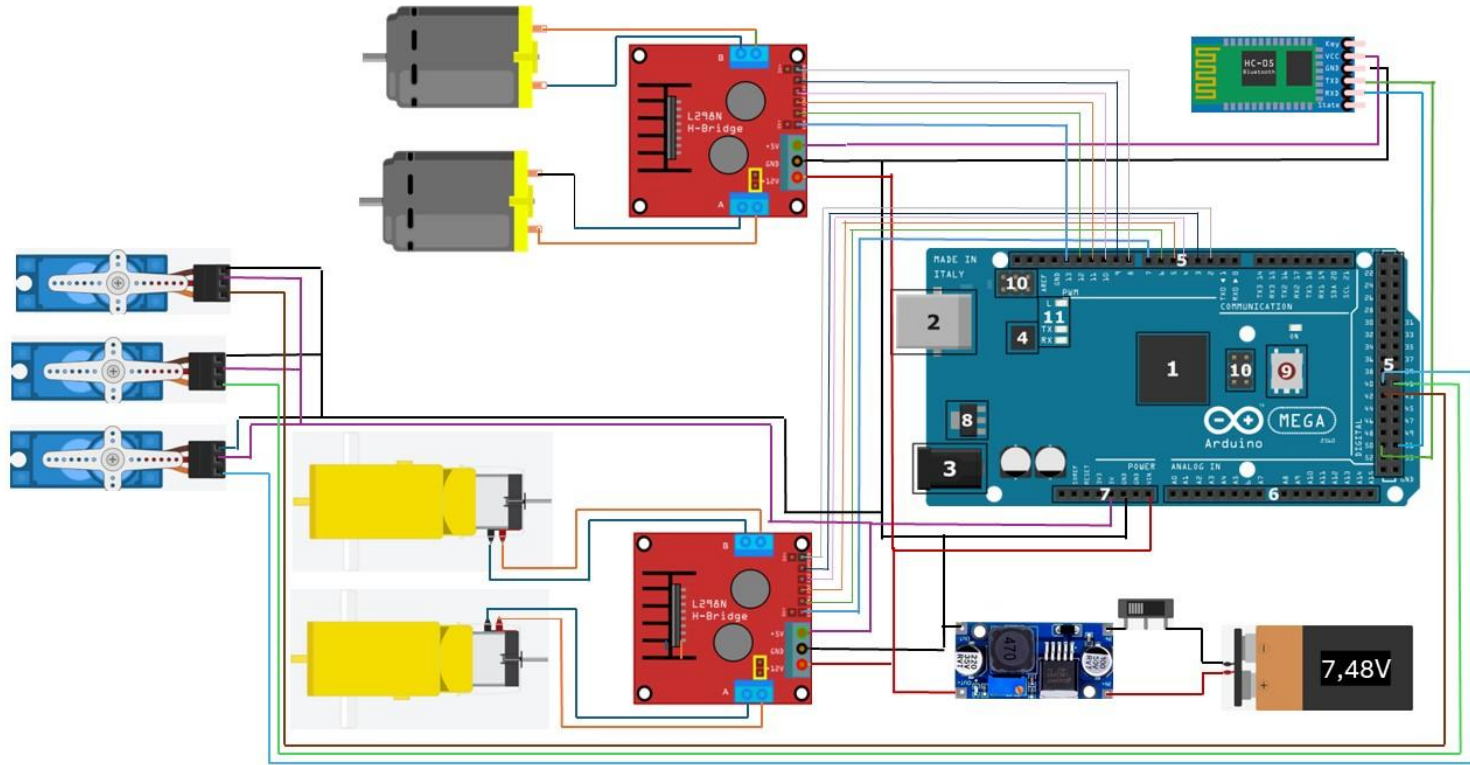
- Imagination de supports ergonomiques.
- Modélisation et Impression d'un support pour les 2 moteurs, d'un chargeur (capacité : 5 balles) et d'une coque pour le canon.
- assemblage des pièces pour constituer le canon.



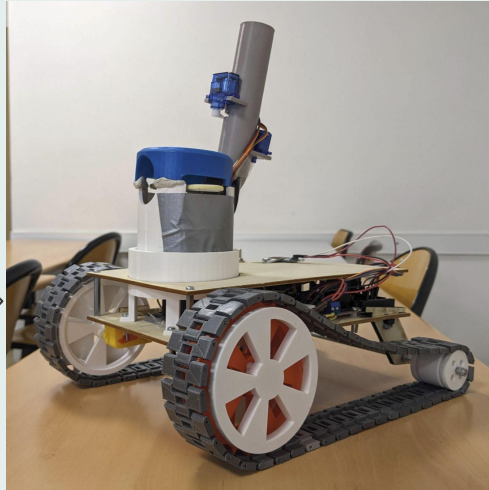
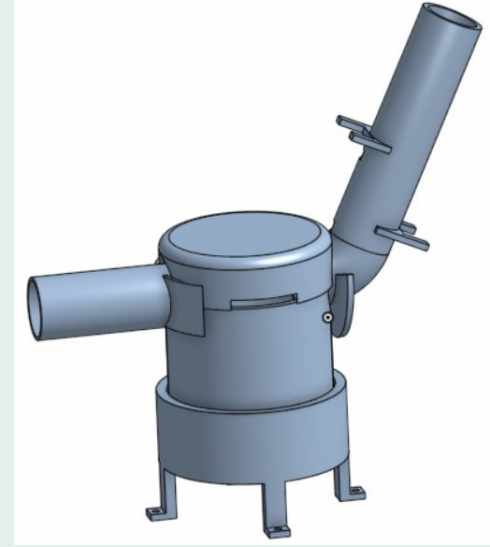
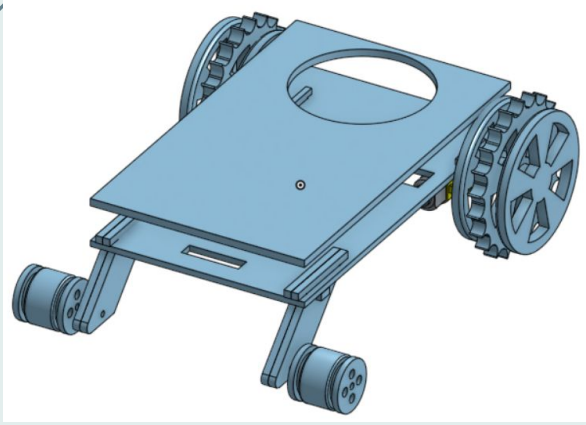
Matériel nécessaires

- 1 Carte Arduino Mega
- 2 motoréducteurs à courant continue
- 2 ponts en H (L298N)
- 1 module Bluetooth HC-05
- 1 batterie Lithium-ion de 7V
- 3 servos moteurs- SG90 (Chargeur)
- 2 moteurs à faible couple-MABUCHI RS 280 (lanceur de balle)

branchement général



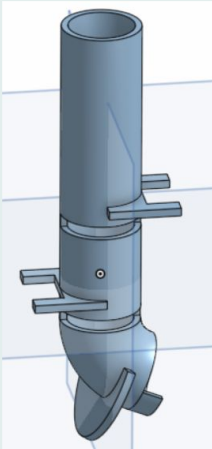
Assemblage



Code

Programmation:

- programmation fonctionnel:
chaque fonction est relié à une action
- contrôle des moteurs de direction.



```
void tier(){  
  MotorsOn();  
  delay(450);  
  rotateServoClockwise(myServo2, 15);  
  delay(100);  
  rotateServoClockwise(myServo1, 40);  
  delay(150);  
  rotateServoClockwise(myServo1, -40);  
  delay(100);  
  rotateServoClockwise(myServo2, -15);  
  MotorsOff();  
}
```

Exemple de fonction

The background features a light blue-grey color with abstract geometric elements. On the left, there are dark blue and light green stepped lines. A red plus sign is positioned to the left of the word 'Demonstration'. In the top-left corner, there is a cluster of five green 'x' marks. In the bottom-right corner, there is another cluster of four green 'x' marks and a red circle. On the right side, there are more dark blue stepped lines, one of which ends in a small open circle.

Demonstration



The background features a light blue-grey color with abstract geometric elements. On the left, there are dark blue and light green stepped lines. A red plus sign is positioned to the left of the text. In the top-left corner, there is a cluster of five green 'x' marks. In the bottom-right corner, there is another cluster of four green 'x' marks and a red circle. On the right side, there are dark blue stepped lines, one of which ends in a small open circle.

Thanks for listening