CAESAR DESIGNING PROCESS

Kanaan Team

DESIGN WORKFLOW

Design, build and print the robot structure	Design and print camera and Ultrasonic holder	Design and print Controller	Design and print battery holder	Design and print driver and DC voltage Buck
The car's body was built in detail to hold the DC motor and the Servo motor that drives it	3D printer is used to print a holder for the camera and the front, left, and right ultrasonic sensors.	3D printer is used to print a holder for the ESP32	3D printer is used to print a holder for the battery	3D printer is used to print a Driver

Design, build and print the robot structure:

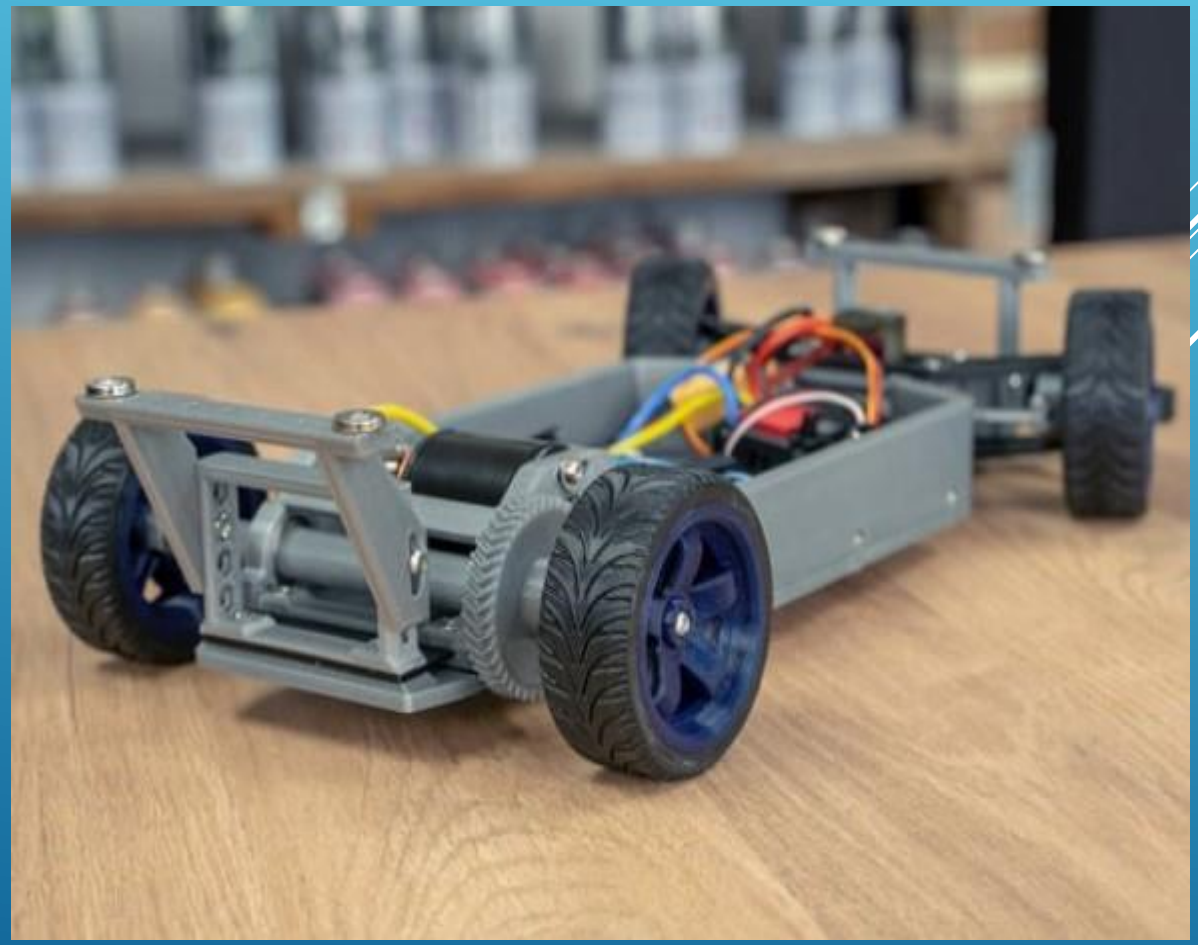
The car body contains a stand, a DC motor and a servo The steering motor, as we searched for a suitable car body from the Internet and modified it to suit our work and the required tasks. It consists of three parts:

1) bottom base: Its dimensions are 23 cm length and 15 cm width

2) Raspberry Pi and ESP32 stand: Its dimensions are 24.5 cm length and 15.5 cm width, with 4 stands of 0.5 cm long and 4 stands 2.5 cm long

3) Battery holder base: 7.5 cm long, 6 cm width.

4) wheels: We bought 4 rubber wheels with an inner diameter 3.5 cm and an outer diameter 6 cm.



DESIGN AND PRINT CAMERA AND ULTRASONIC HOLDER

3D printer is used to print a holder for the camera and also , for front, left, and right ultrasonic sensors.

Camera and ultrasonic sensors holder:

It consists of three parts:

Ultrasonic sensor holder. There are two designs, the first design for the right and left sensor, and the second design for the front sensor, as they are installed together using screws, and the design of each of them helps in easy installation.

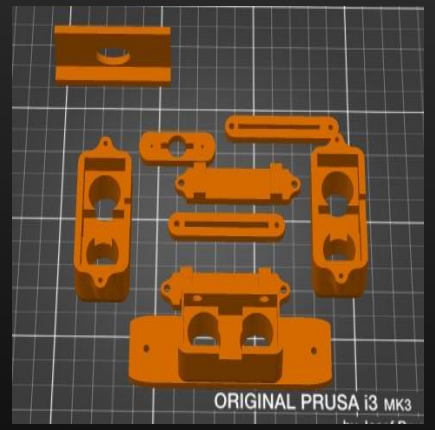
The left and right stands are designed with dimensions:
5.5 cm long and 3cm wide.

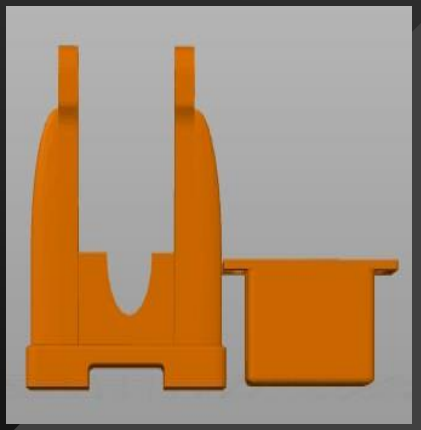
The front stand has dimensions:
Length 10 cm, height 3 cm

The base of the camera holder is placed above the protective design of the servo motor, as it has a longitudinal entrance on which it is places

Camera holder:
Designed to mount the camera on it so that it is easy to move it in the appropriate direction.

It is designed with dimensions of 11 cm high, 7 cm long and 6 cm wide.

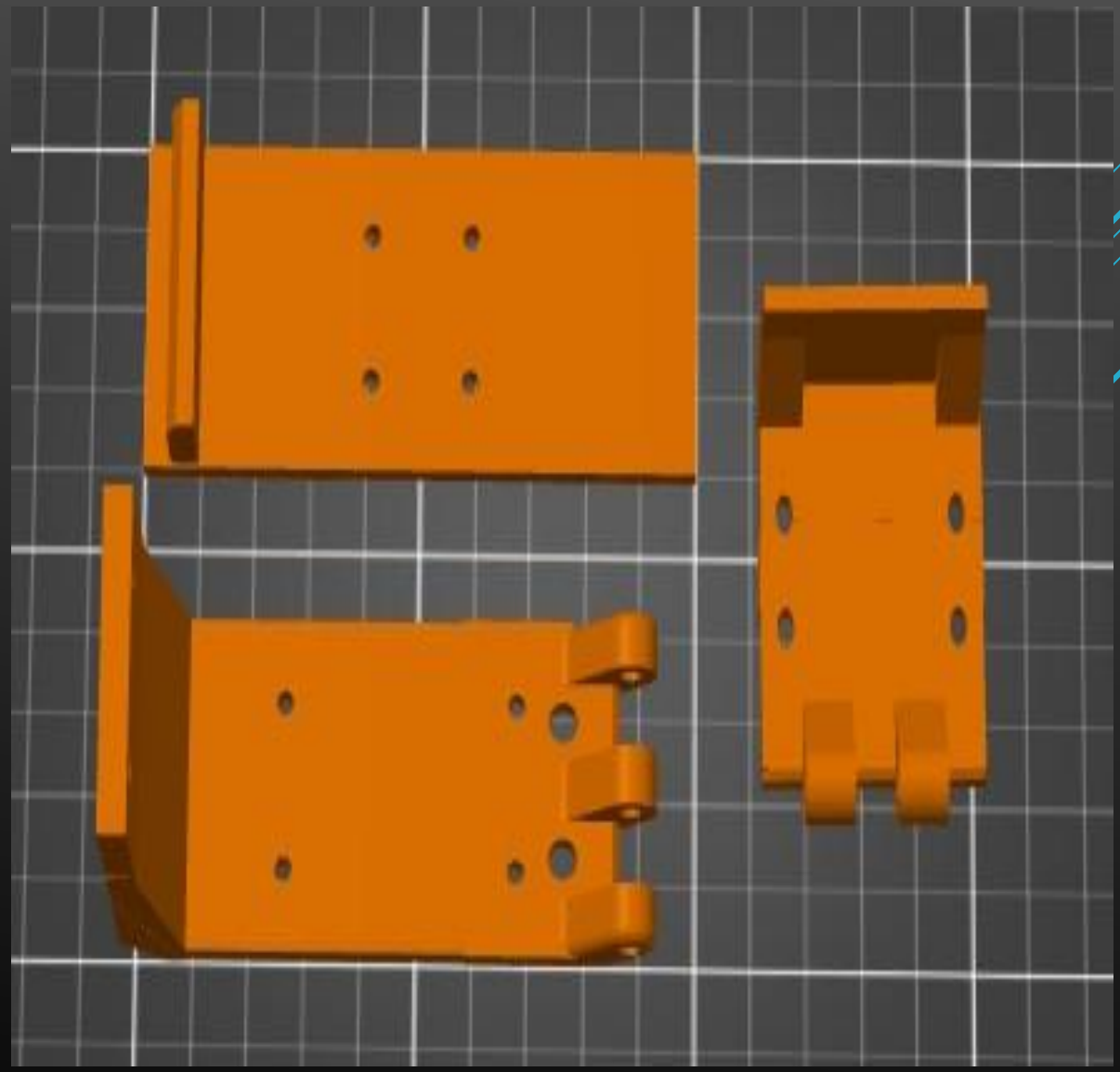




DESIGN AND PRINT CONTROLLER

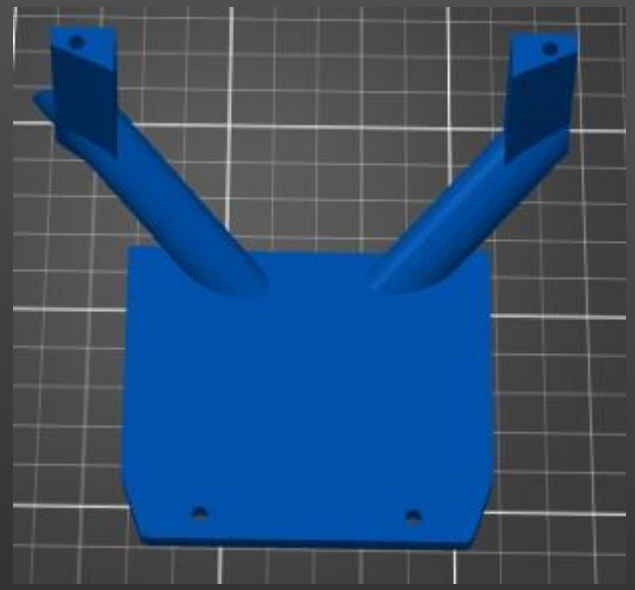
There is a piece on the base of the robot that contains a Raspberry Pi 4 controller, on top of which is a chassis-shaped pod that holds the Driver and ESP32.
above it. Its length is 9.5 and its width is 4.

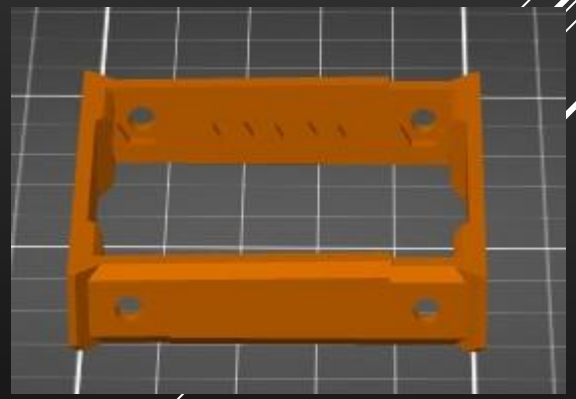
ESP32 incubator dimensions: It is 8 cm long and 10 cm wide



Design and print battery holder

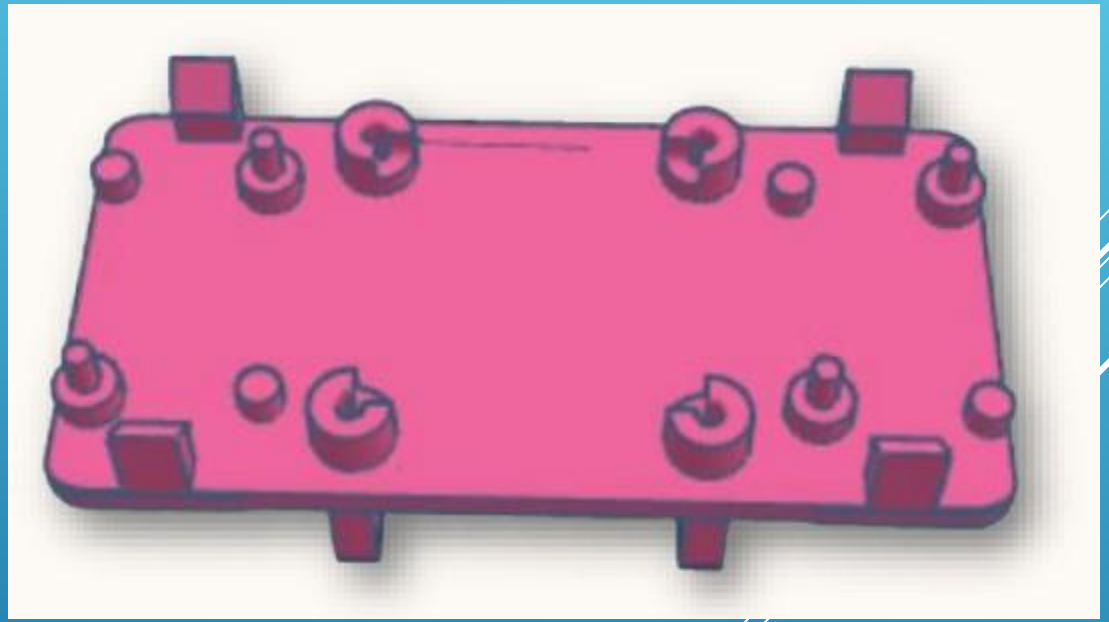
Battery holder:
We designed a battery holder by modifying the following three designs to suit the size of the battery holder

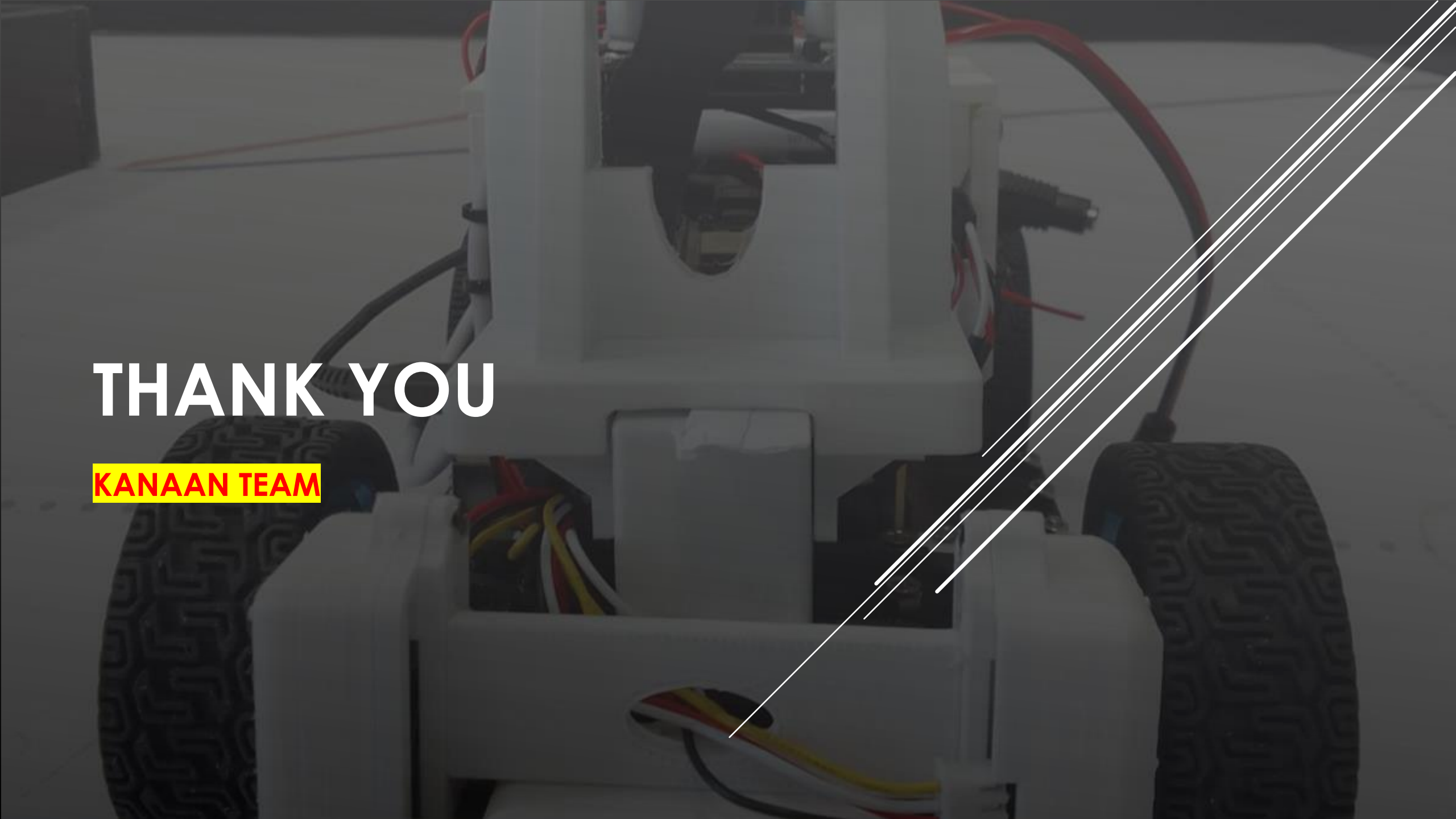




Design and print driver and DC voltage Buck

We designed the driver and DC voltage Buck with dimensions:
It is 10 cm long and 5 cm wide.





THANK YOU

KANAAN TEAM