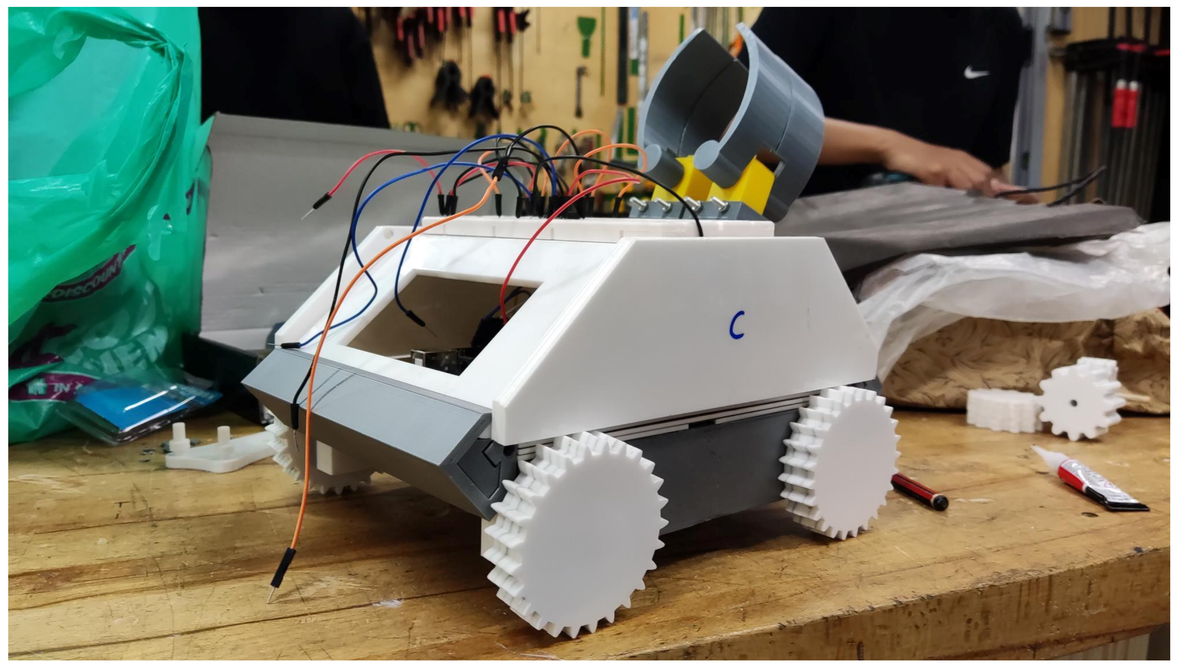
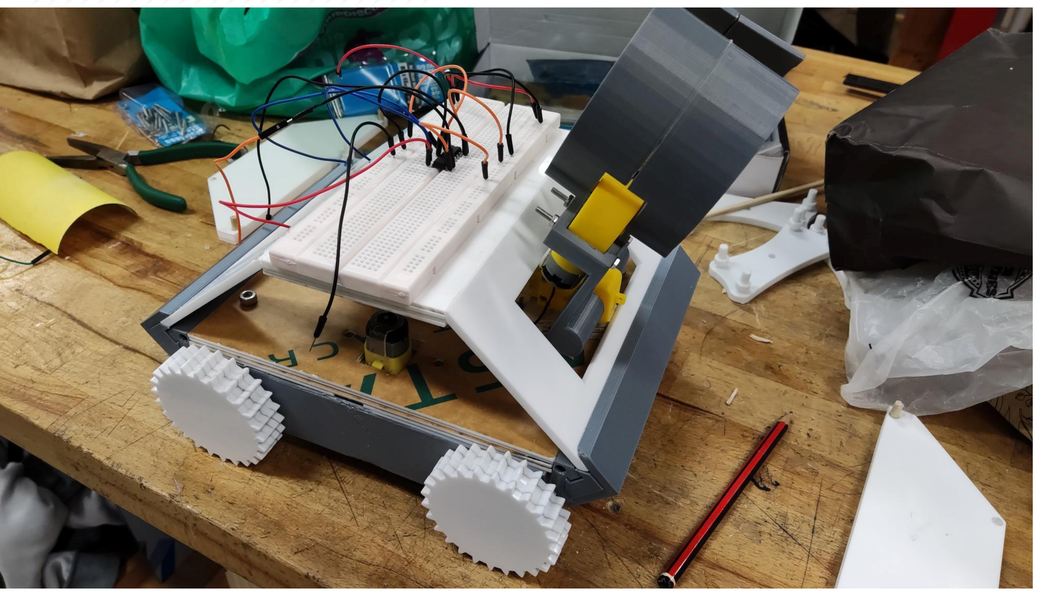
TEAM 16

Robust Design

The robot utilises a trapezoidal frame which provides a strong base for the robot to remain together and not fall apart. The trapezoid uses PLA plastic which is used in the 3D printing of the parts which is a strong material that is also light and easy to work with to create the robot's structure. We have used acrylic as the platform in which we secure the Arduino onto and the rescue arm for the robot.



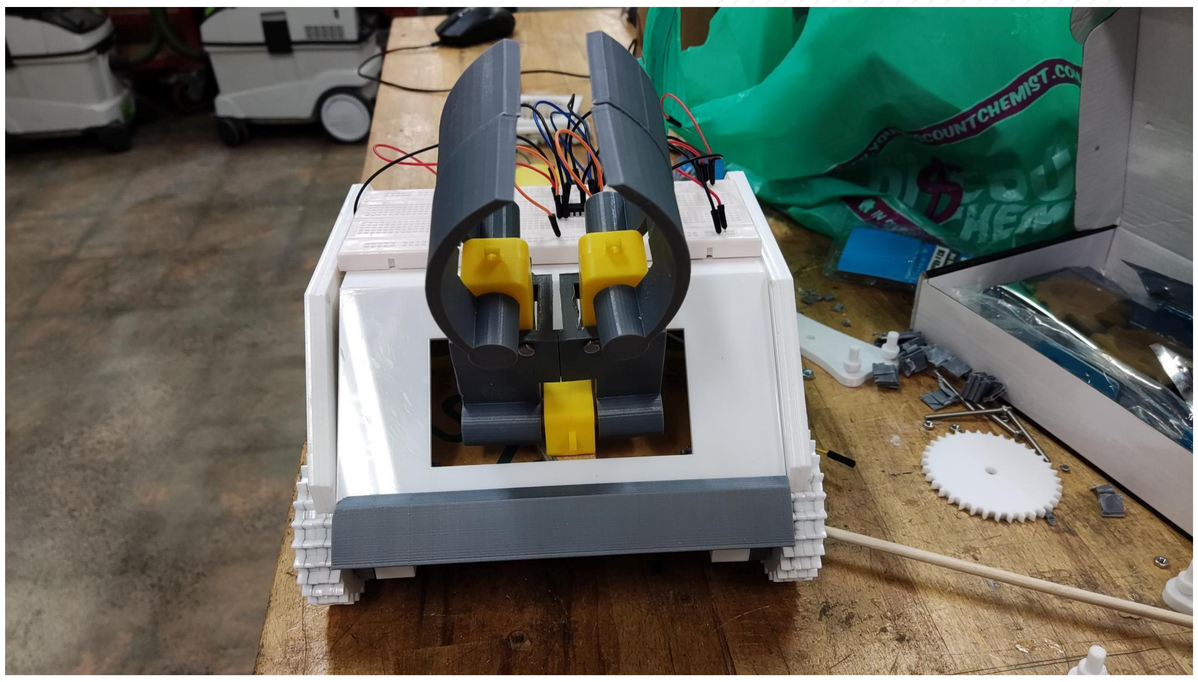


Aesthetic Appeal

The robot poses a simplistic design through only a trapezium. This design allows for a very sleek and compact robot which can be recreated efficiently due to the low amount of resources required to produce the robot. The arm seamlessly fits within the robots base and its ability to change angles reduced the length of it adding to the already compact design reducing the need for a really long arm.

Engineering Quality

The robot is required to manoeuvre through small spaces which is why the robot created was designed to be 250mm long, 230mm wide, only 140mm high and weighing in at 980g. The size and weight of the robot along with the materials used creates a very small but strong robot allowing it to move through tight spaces and uneven terrain without falling apart or be in any danger for any damage



Innovation

The robot itself utilises cog wheels instead of generic wheels which allows the robot to navigate through uneven terrain without as much struggle. The benefit of the cog design allows for better grip on the terrain and its large size can be used to overcome larger obstacles such as stairs. For the rescue arm, a claw was designed which uses motors to change the angle of the claw and to also open and close the claw. The design of this arm is kept small and close to the robot allowing the robot to be more mobile and increases the ease of rescuing the tennis ball.