

HOW WE HAVE BUILT OUR OWN RC CAR FROM SCRATCH

INTRODUCTION

In this project, we've designed and built our own RC car from scratch. We used various materials and technologies, such as electronics, motors, an app and a 3D printer to make our car move and be controlled from a distance. Throughout the project, we learned about the principles of physics and engineering that went into the design and operation of an RC car. We also learned about different parts that make up an RC car and how they work together to allow the car to move and how its shape affects the maximum speed.

MOTIVATION

We've decided to make a RC car because we thought that it would be a fun and interesting project. Not only that we also share the same passion - cars. Because of that an idea to make a car immediately popped up in our minds when we were thinking about our topic. After all it's nice to know something more about your passion.

THEORY BACKGROUND

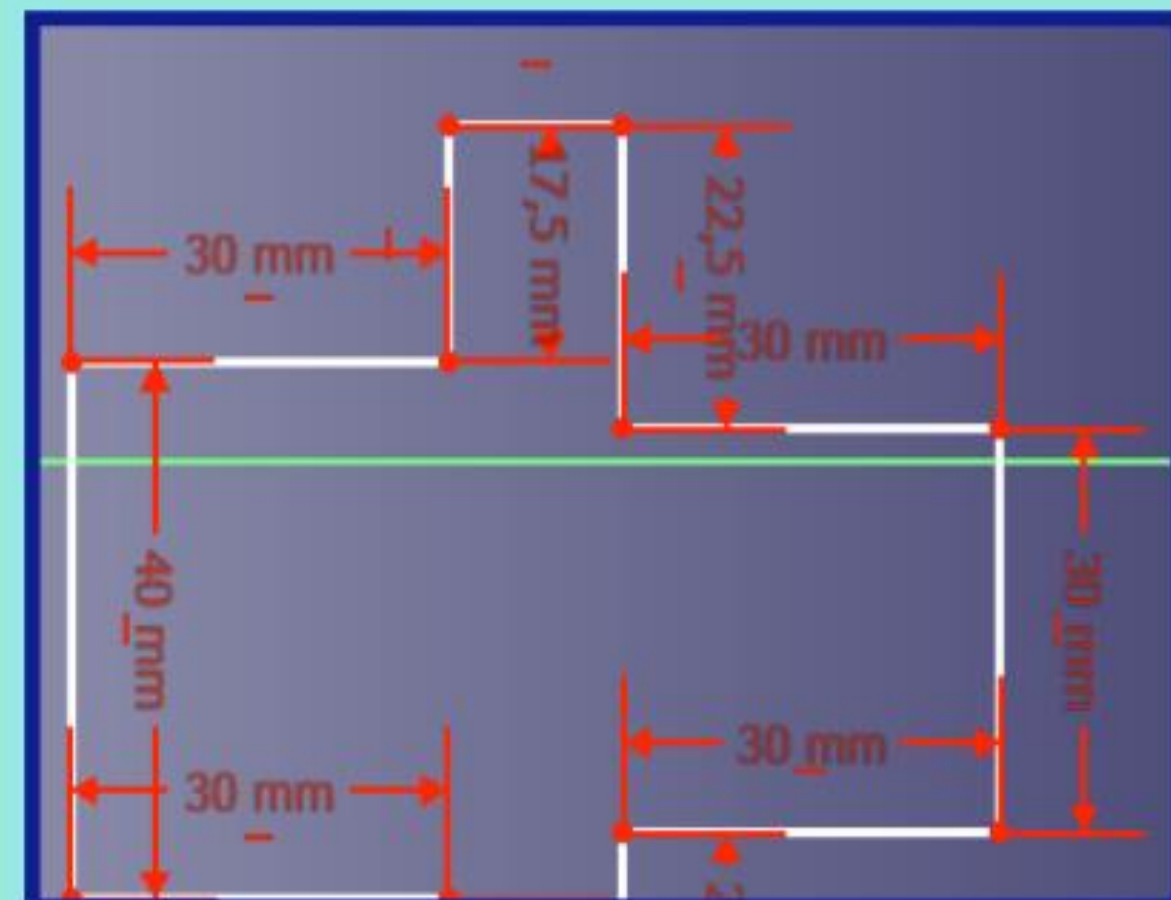
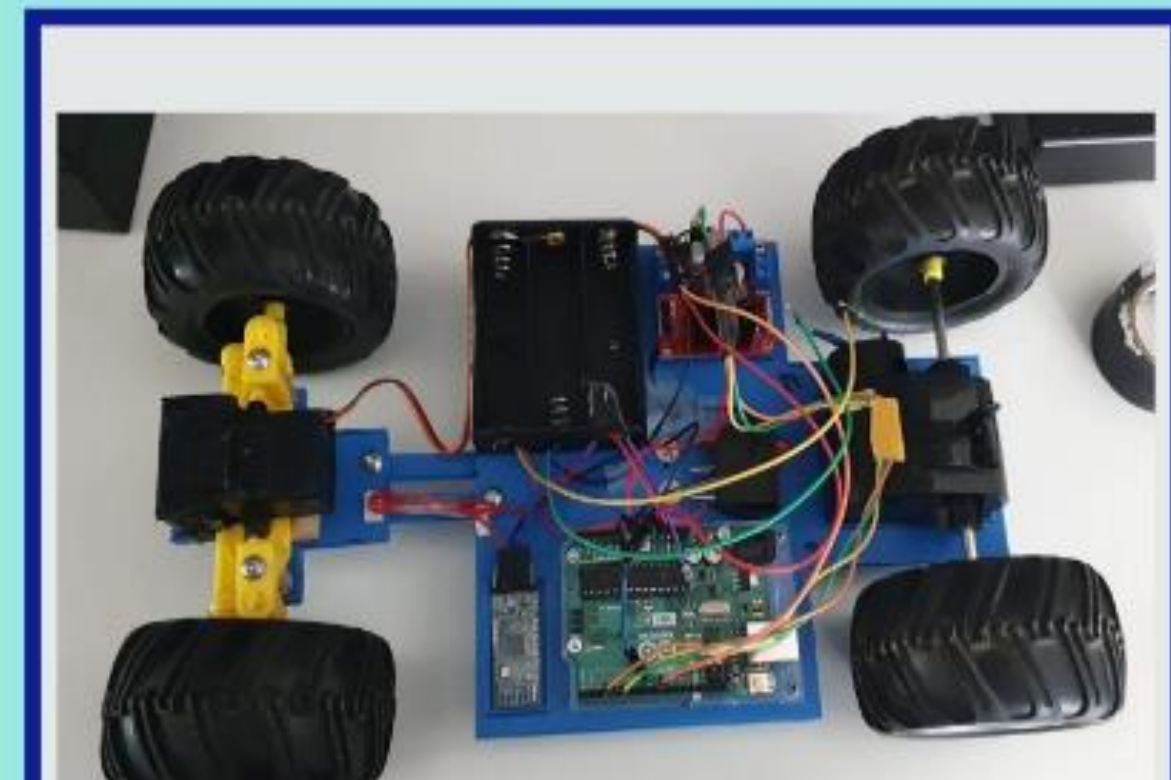
In order to create a RC car, it is important to understand the principles of physics that were involved in the design and operation of the car. Forces acting on the car that we need to take into account:

- gravity
- friction
- air resistance

What is needed to operate the car?

- electric motors, which convert electrical energy into mechanical movement
- a transmitter to control the car from a distance (an app controlling the car via arduino module)

PHOTOS OF THE CAR



The process

The entire process of building this car took us a few months. Firstly we started from making 3D sketches in a programme called FreeCAD. Then we printed on 3D printer our parts that we sketched. In the meantime there was created a programme that was responsible for steering this car. After first fittings it turned out we had to start again because the chassis we made wasn't good enough. After corrections we proceeded to montage first parts on the chassis. We installed battery holder, arduino, engine, bluetooth controller and motor driver. Everything fitted well so we installed wheels and checked if the car is running. The test was a success, the car was driving forwards and backwards, but still we didn't have a steering system. So, our team began to built the system. It was the most demanding part of the entire built. Creating this system took us the most time of the entire project. But in the end everything is running well. We created a RC car steered by app on the phone. The car is connected with an app by bluetooth. We enjoyed the time that we put into this project. Everyone from our team tried their best to make this car as good as it was possible.

