

# Obstacle Avoiding Robot



Supervised By:  
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## Group Members

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•Roll number:

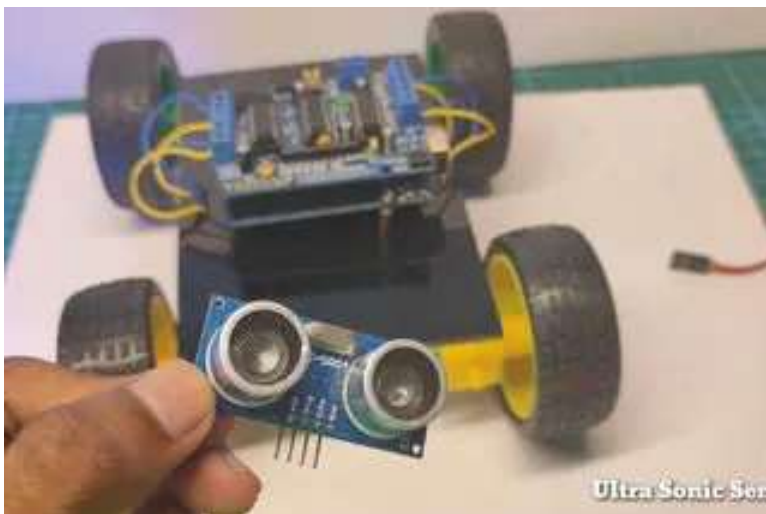
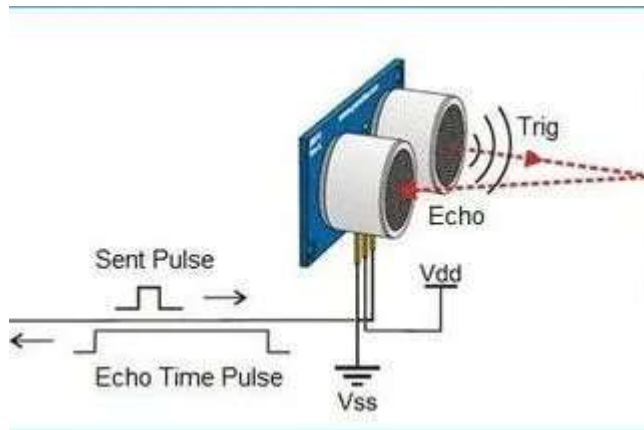
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# Introduction

- ROBOTICS is a part of today's communication. In today's world Robotics is fast growing and interesting field
  - With the help of Robotics we can design the machines and make life easier
  - Obstacle Avoiding Robot is design to allow robot to navigate in unknown environment by avoiding collisions
  - Obstacle Avoiding Robot is an intelligent device that can automatically sense the obstacle in front of it and avoid them by turning itself in other direction
  - Obstacle avoiding robot senses obstacle in path, avoids it and resumes it's running
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# Step 1: How Ultrasonic Sensor Can Be Used to Avoid Obstacles

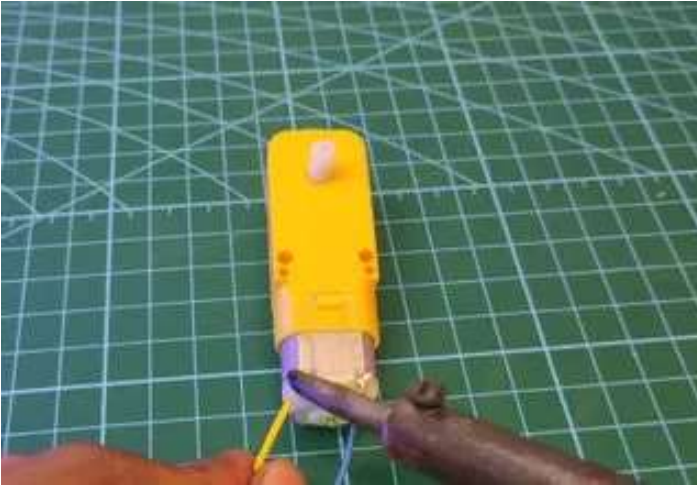


Before going to build the robot, it is important to understand how the ultrasonic sensor works because this sensor will have an important role in detecting obstacles.....The basic principle behind the working of an ultrasonic sensor is to note down the time taken by the sensor to transmit ultrasonic beams and receive the ultrasonic beams after hitting the surface. Then further the distance is calculated using the formula.

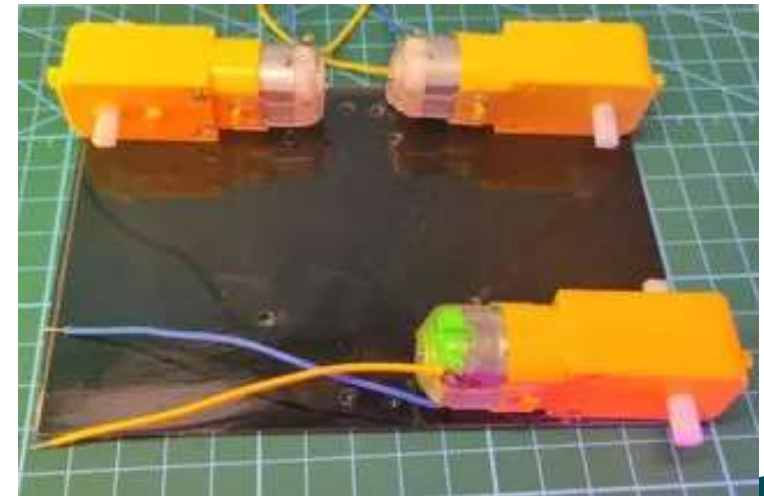
In this project, the widely available HC-SR04 Ultrasonic Sensor is used. To use this sensor, a similar approach will be followed explained...



## Step 2: Attach the Motor and Wheel to the Chassis



connect the wire to all motors And then fix all those motors on the chassis with glue

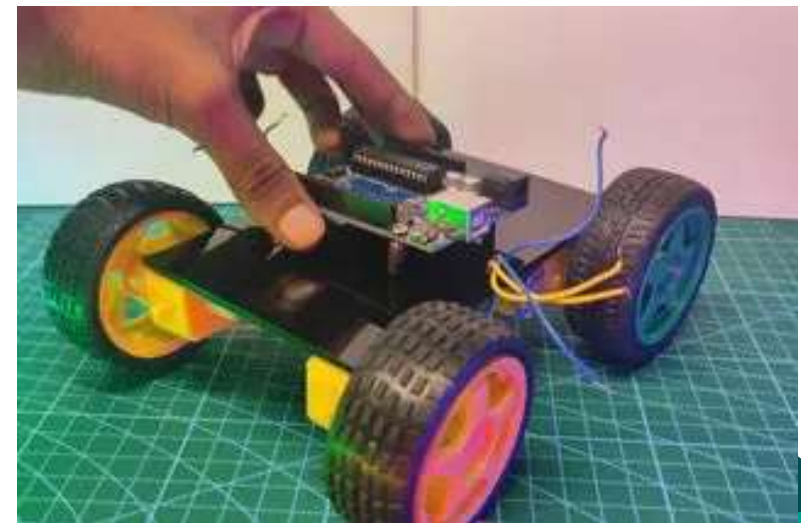


## Step 3: Attach Arduino in Chassis



Now put the Arduino in the chassis

I fixed the arduino on the nut and bolt through the chassis. You can also fix it with Dobbble sided tape.

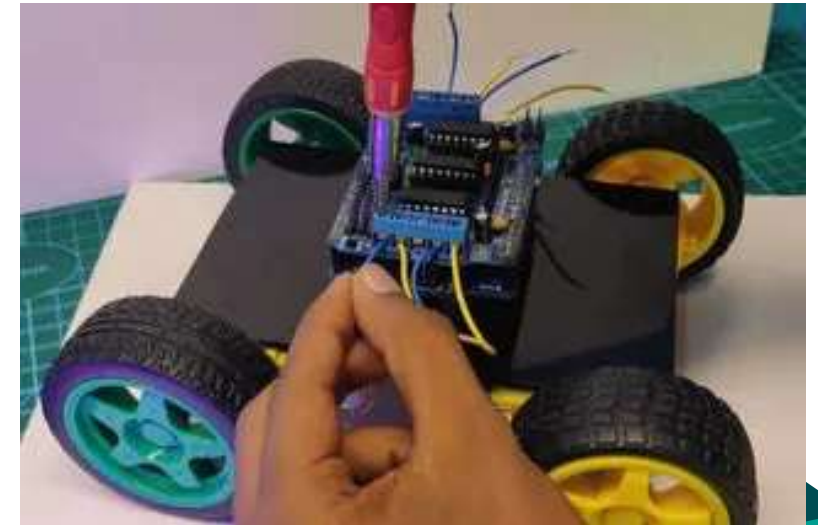


## Step 4: Connect Motor Wire in Arduino Connect

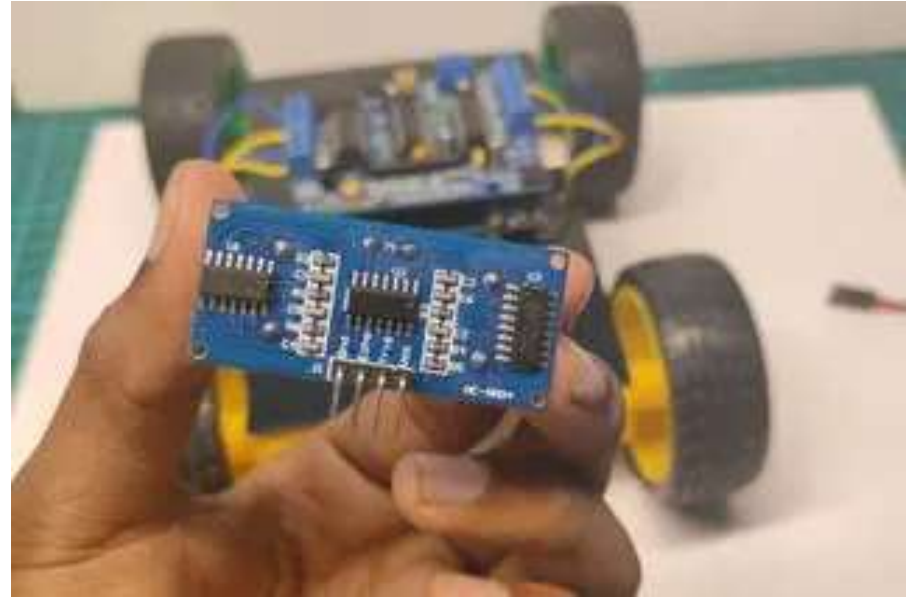
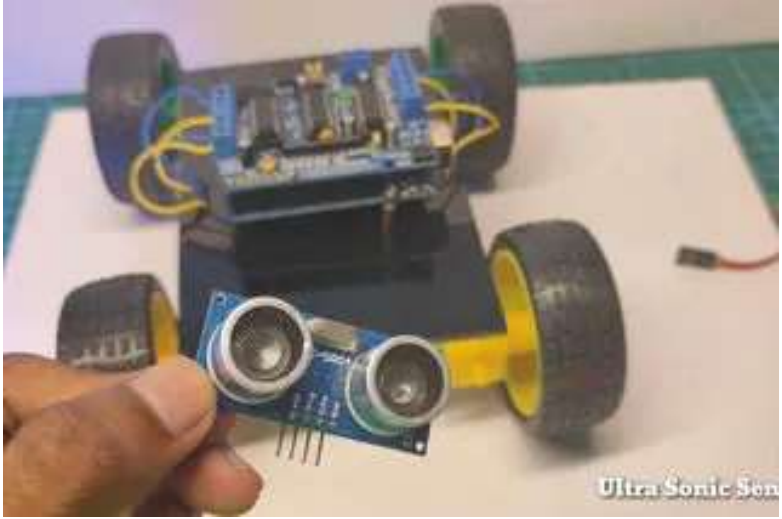


Connect all motor wires to the motor driver

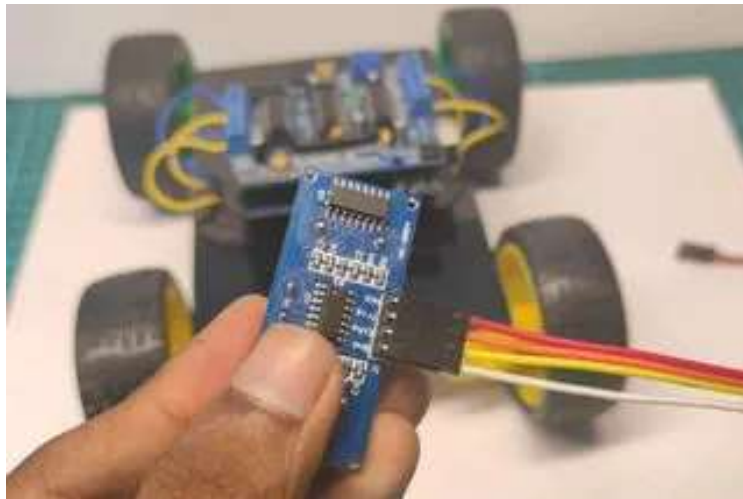
First attach all the motor wires to the motor driver's pin



## Step 5: Ultrasonic Sensor

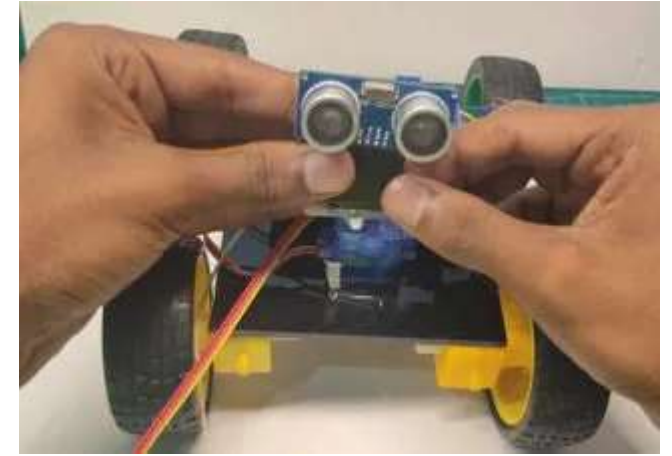
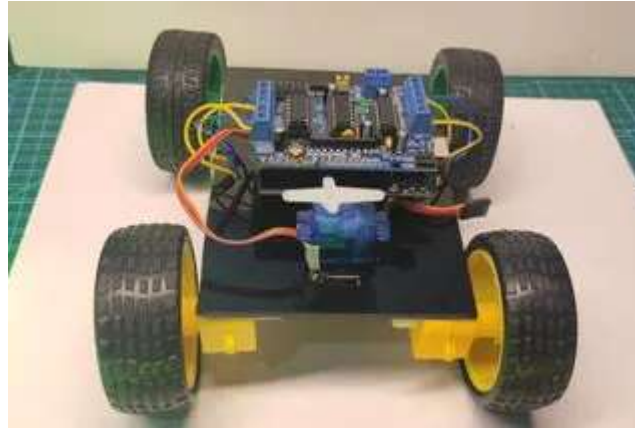
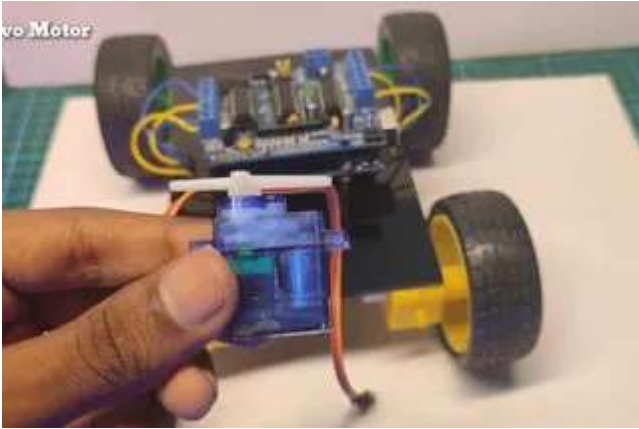


I use ultrasonic sensors





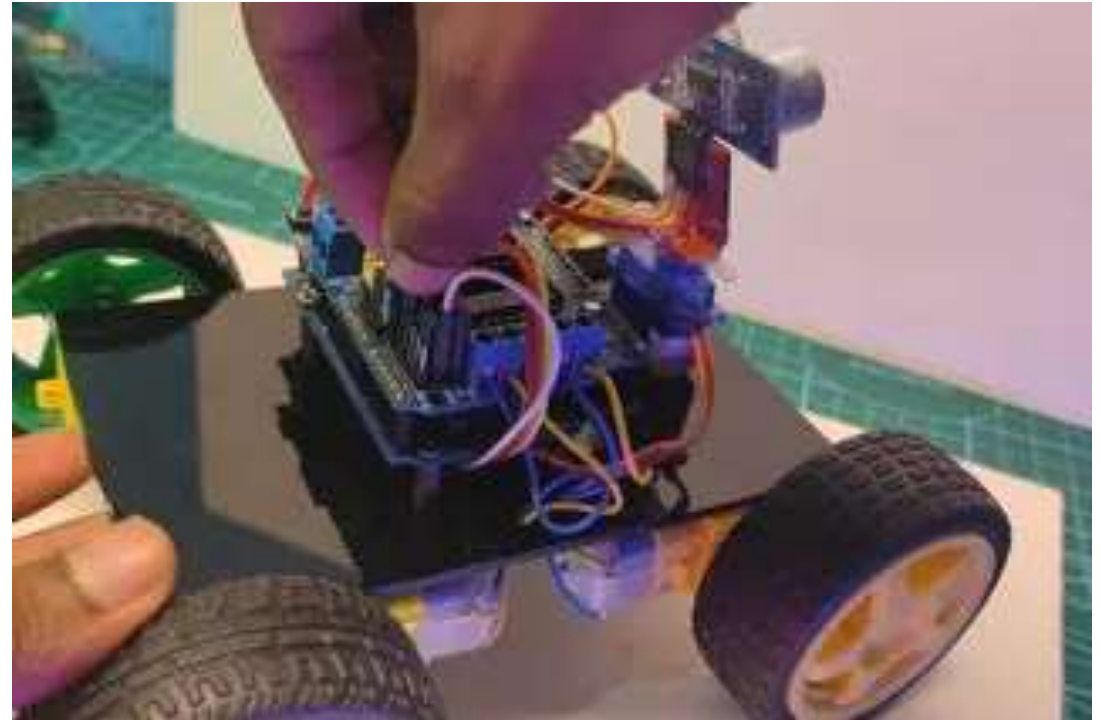
## Step 6: Mount the **ULTRASONIC** Sensor With Servo



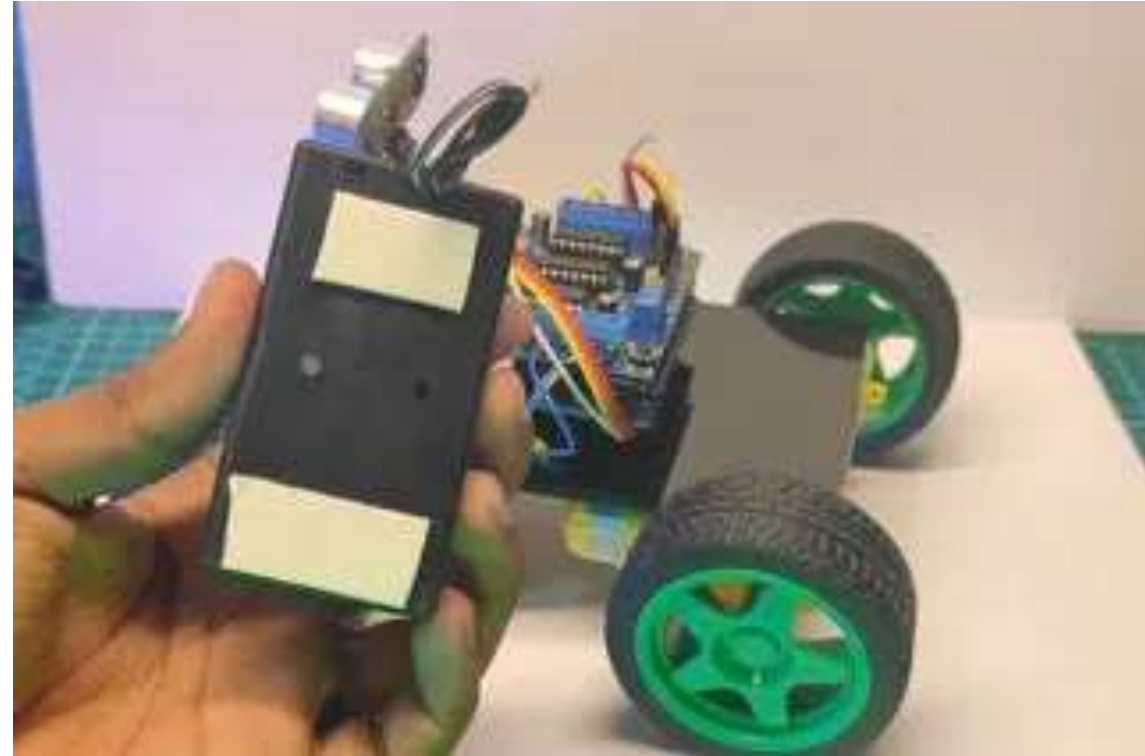
We first fixed the servo motor with glue on the chassis.

Then I put the ultrasonic sensor on the servo so that the ultrasonic sensor can rotate

## Step 7: Connect the Servo and Sensor Wire in Motor Shield



## Step 8: Power Source

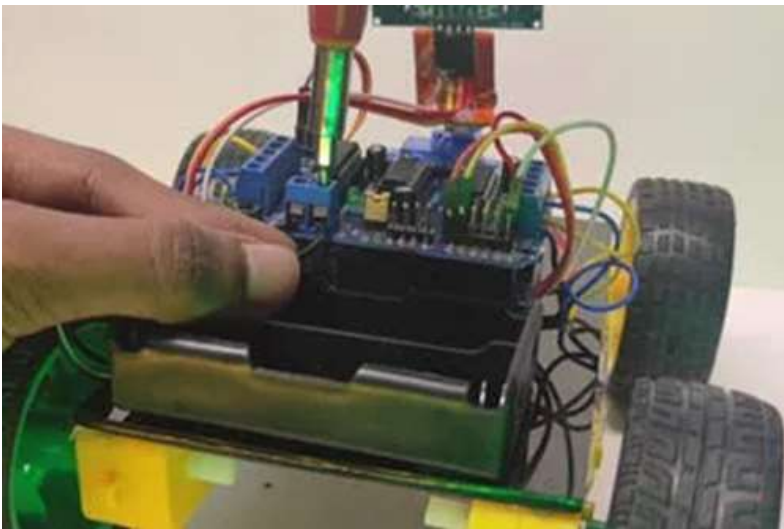




used a 18650 battery to power the Arduino. You can do another one as well.

Power the motor driver with the battery

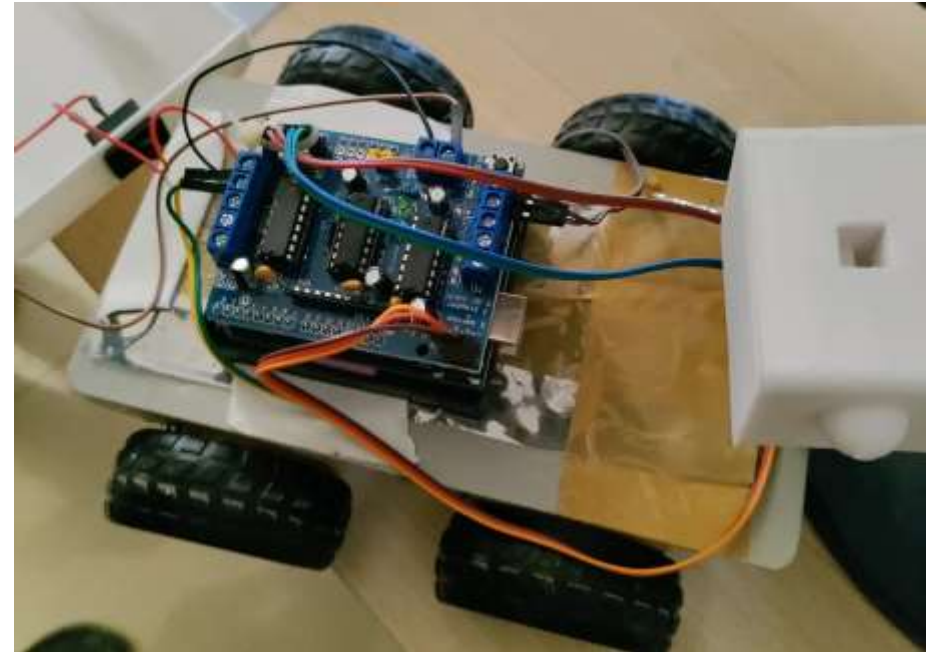
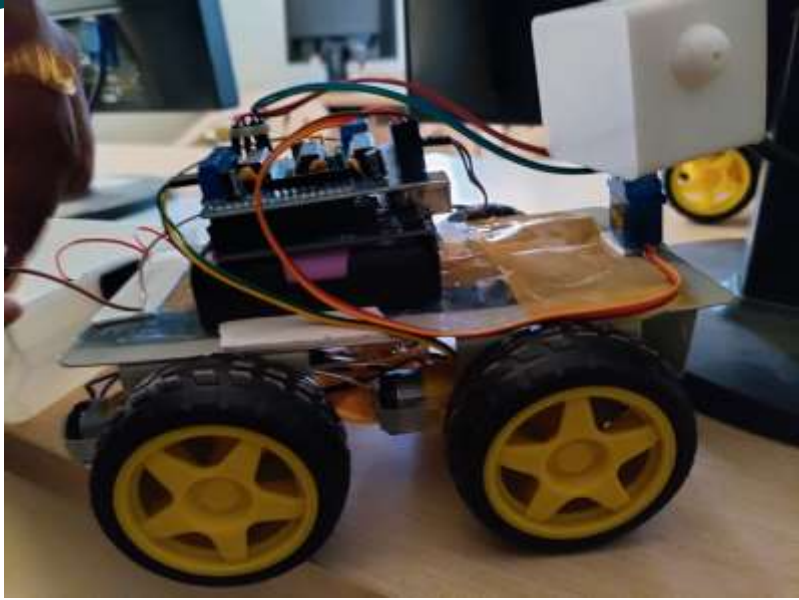
Place the battery in the holder




I have not installed any switch in the battery but you will definitely



# Step 9: Complete





**THANK YOU**