



WELCOME TO OUR PRESENTATION

Arduino base Autonomous vehicles

Course Title: Prototyping and System Engineering

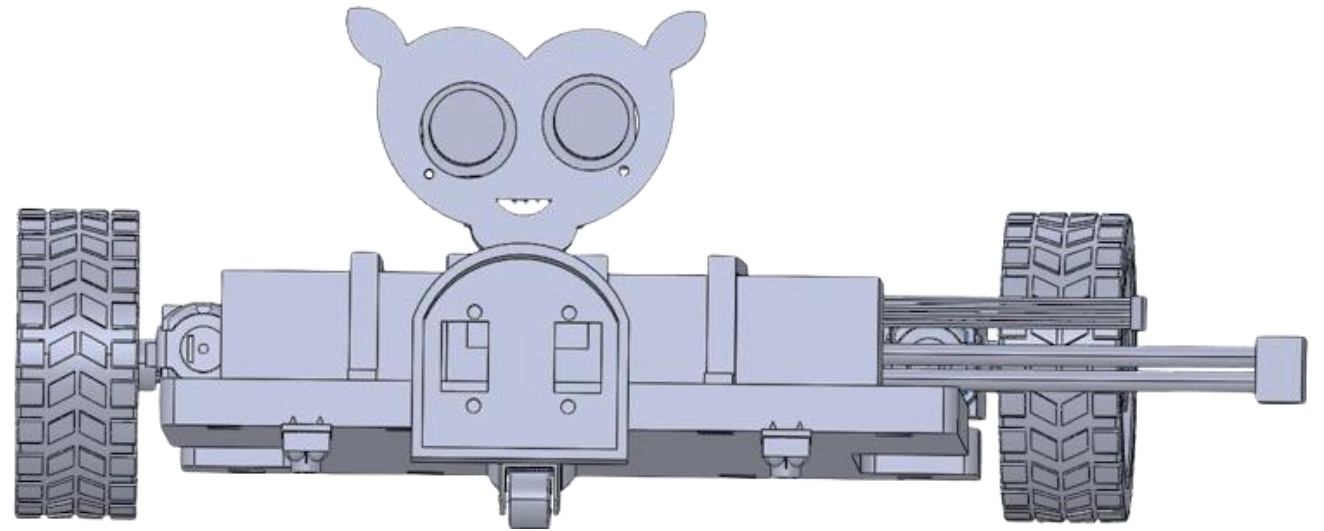
Team: A3

Members:

John Abiagam

Omar Latif

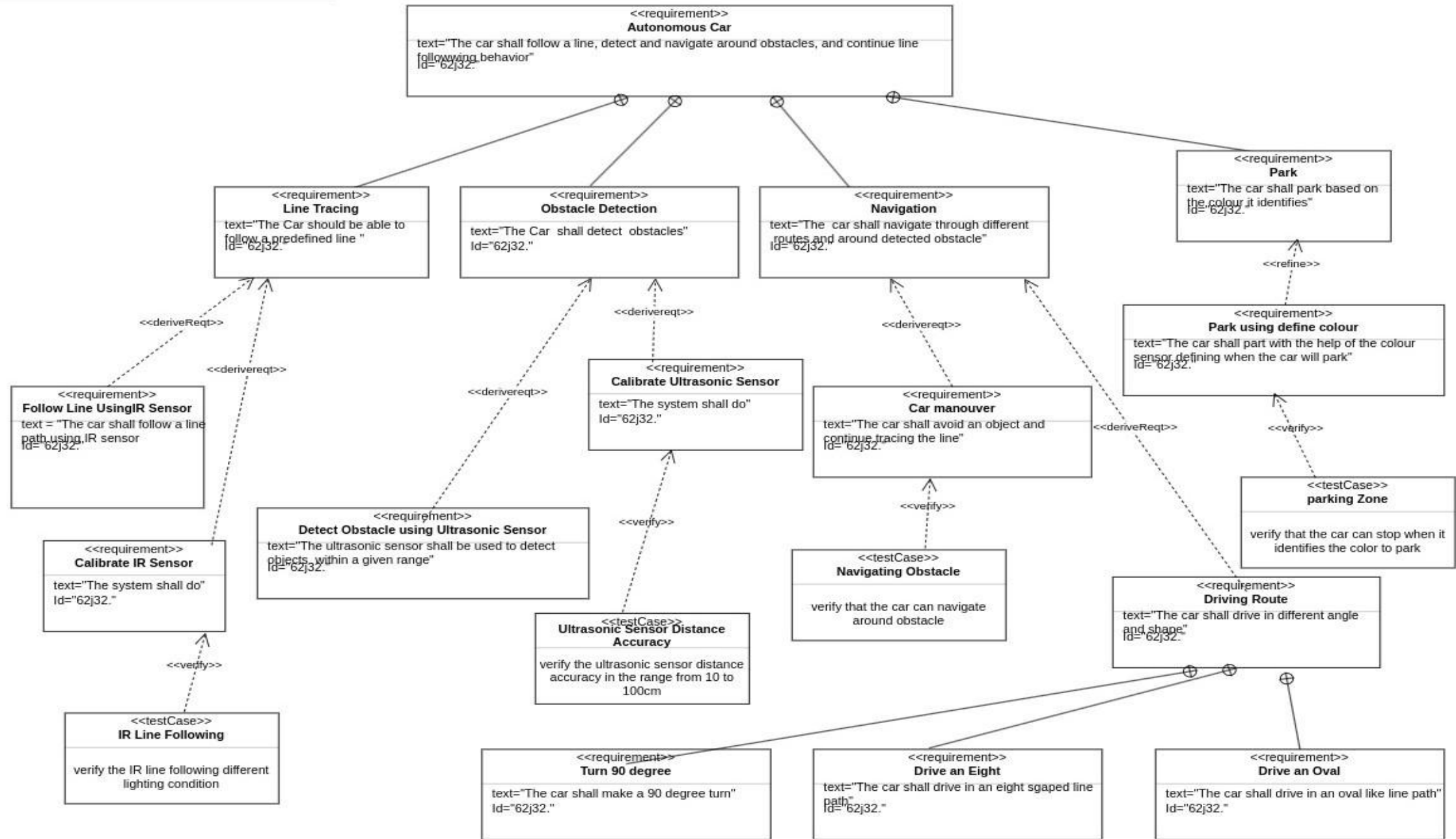
Md Akram



Motivation

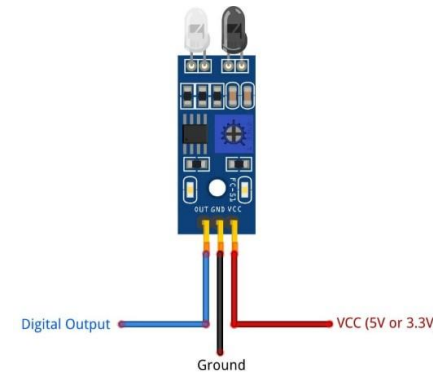
- **Arduino base Autonomous vehicles**
- **Line detection and following**
- **Obstacles detection and avoidance**
- **Color identification**
- **Parking vehicle**



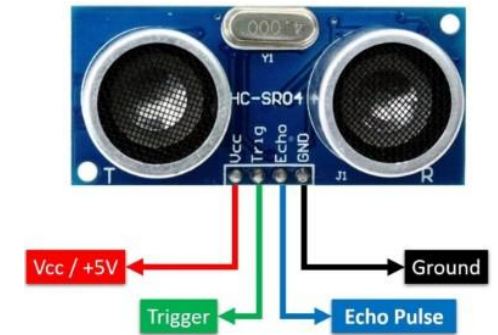


HARDWARE COMPONENTS

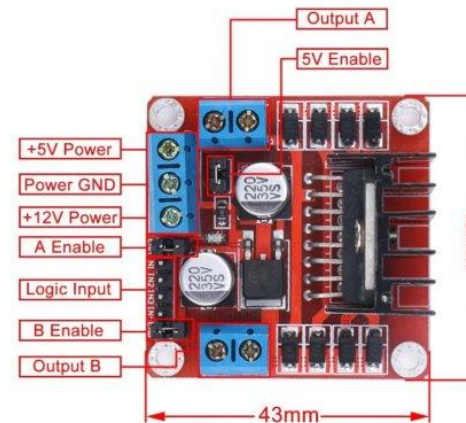
- Arduino Uno / Nano
- Color Sensor
- L298N Motor Driver Module
- 2x IR Line Sensors
- Ultrasonic Sensor (HC-SR04)
- 2 DC Motors + wheels
- Power supply (battery pack)
- Chassis
- Jumper wires



IR Sensor



Ultrasonic Sensor

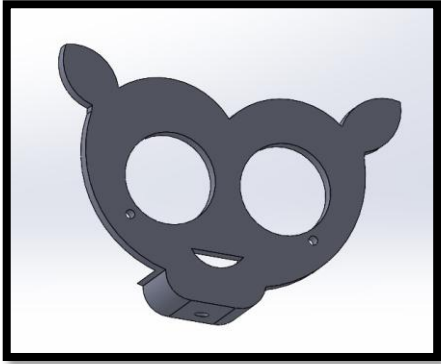


L298N Motor Driver

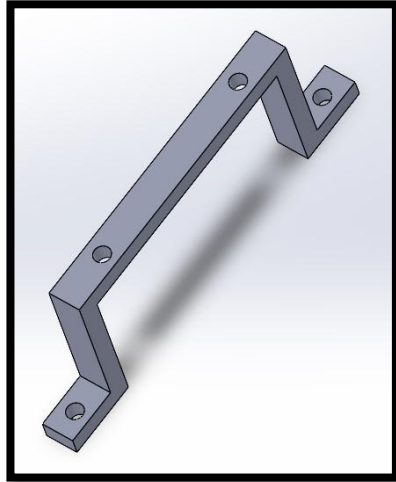


TSC3200 Color sensor

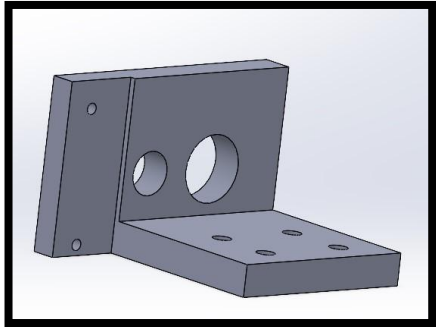
3D Design



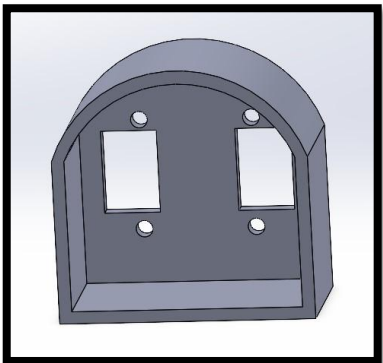
Ultrasonic Sensor holder



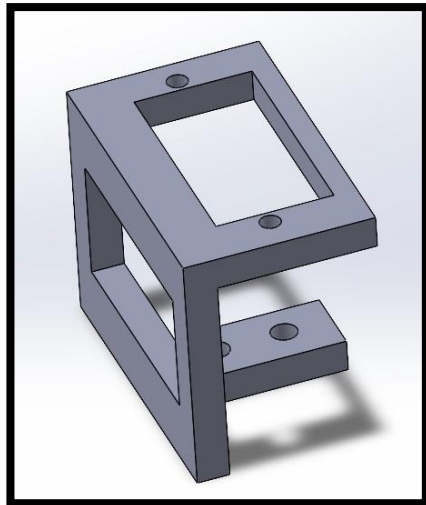
Battery holder



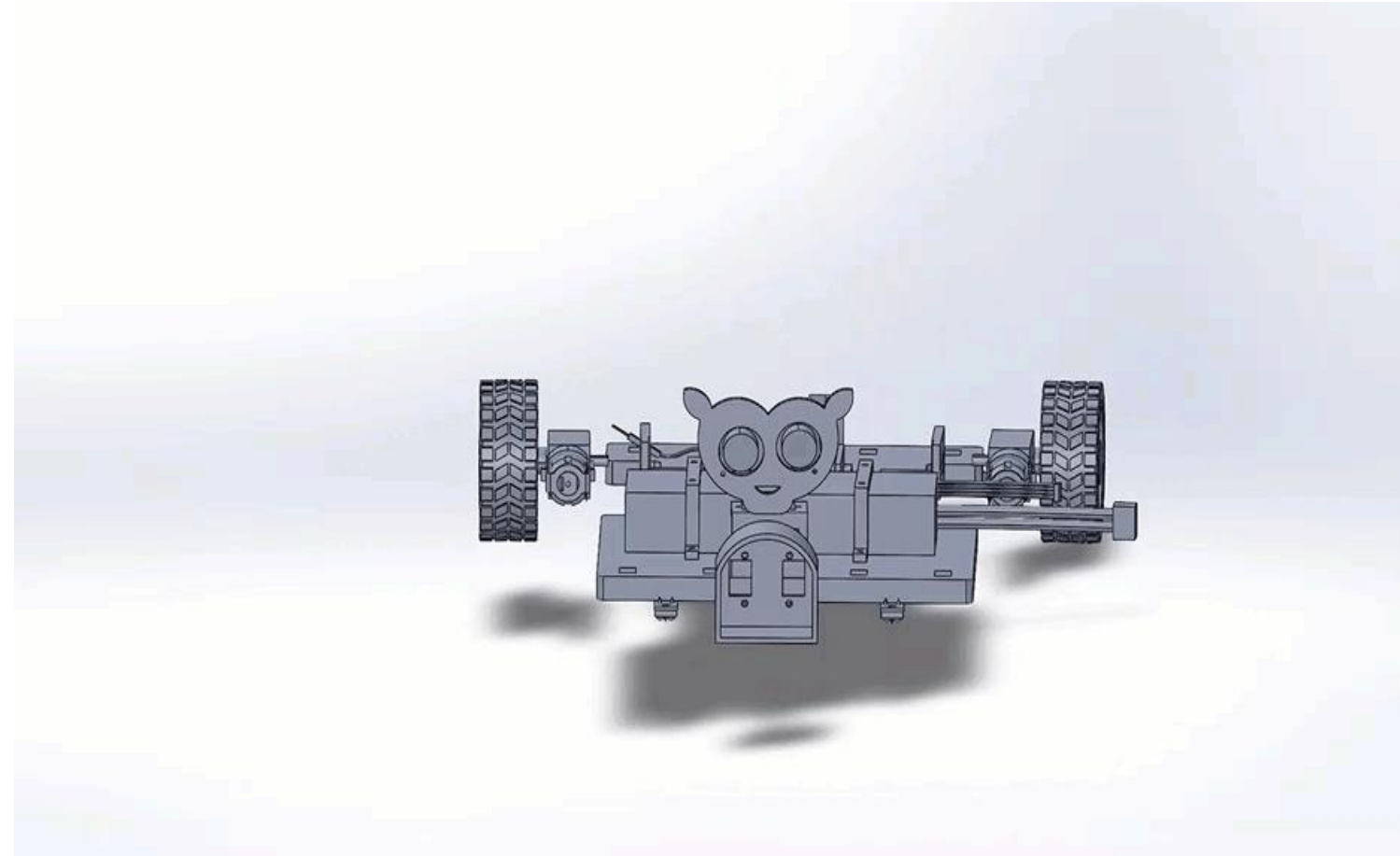
Motor holder



Color Sensor holder

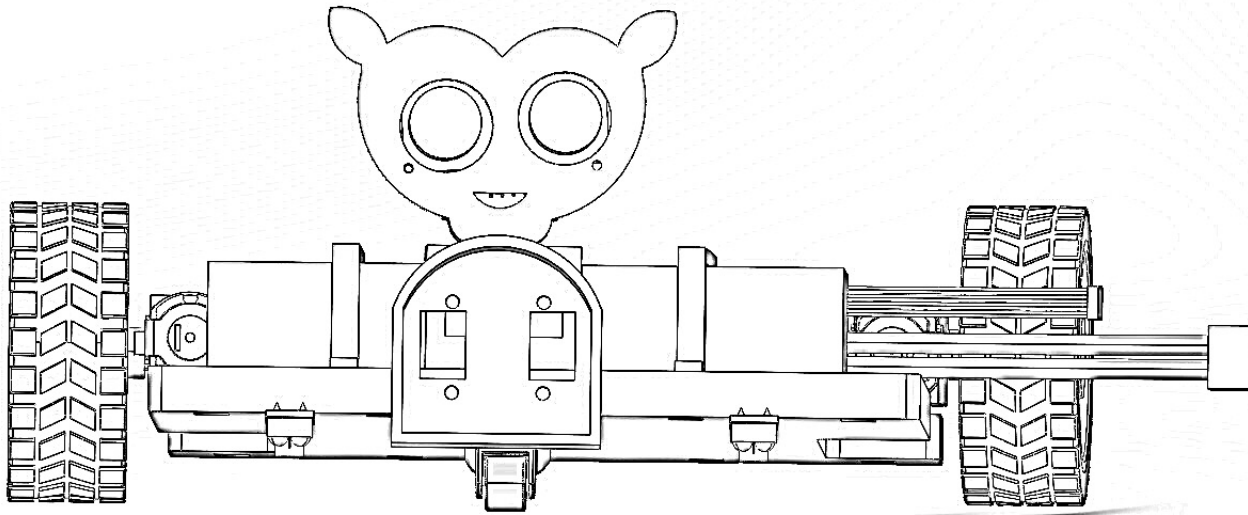


Servo holder

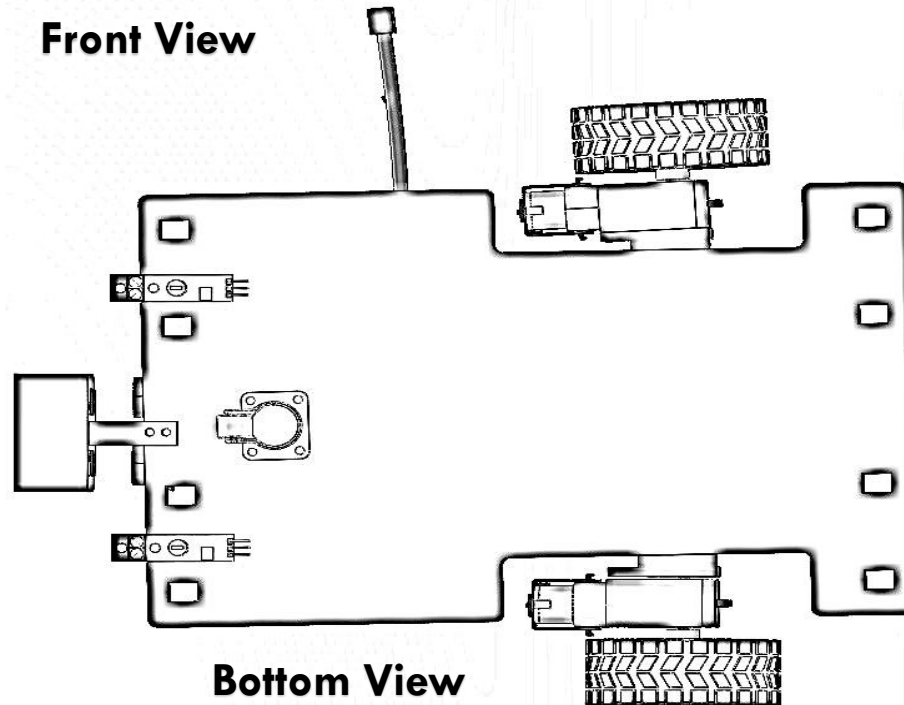


SOLIDWORKS Motion study and Exploded view

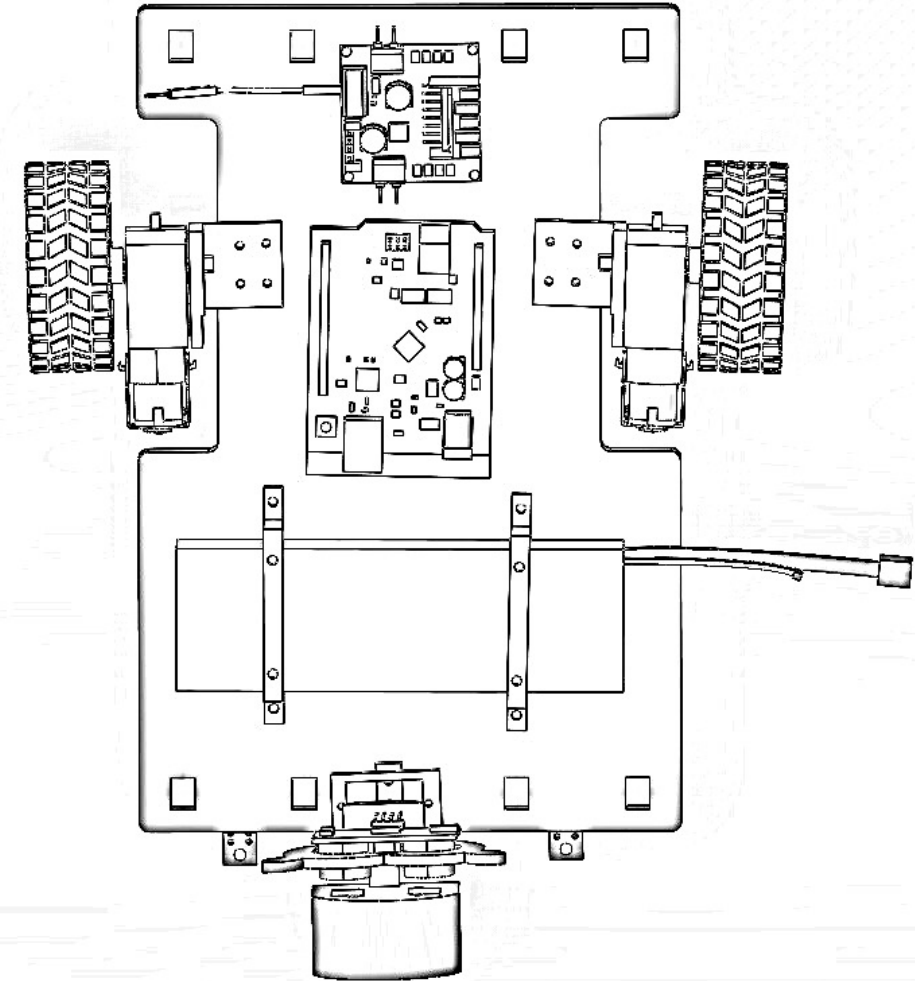
Paper Sketch



Front View



Bottom View



Top View

Assembly Process

01

Checklist Observation

- ✓ All 3D parts are present
- ✓ All components are present
- ✓ Assembly tools present
- ✓ Paper Sketch present



Components Mounting

- ✓ Cleaning of 3D parts
- ✓ Place components in holder
- ✓ Careful about enough support
- ✓ Place all in main surface
- ✓ Check about weight balance

Electrical Connection

- ✓ Check datasheet
- ✓ Understand schematics
- ✓ Connect the signal pin
- ✓ Connect power and Ground
- ✓ Double check every connection

Assembly Process

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Checklist Observation

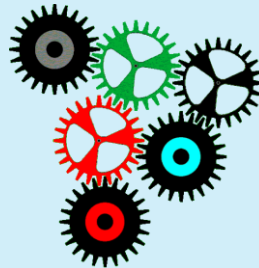
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02

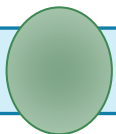
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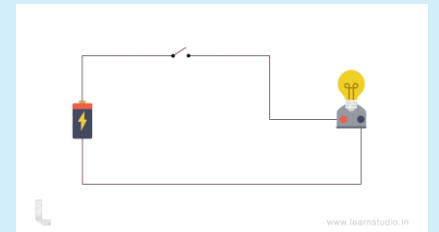
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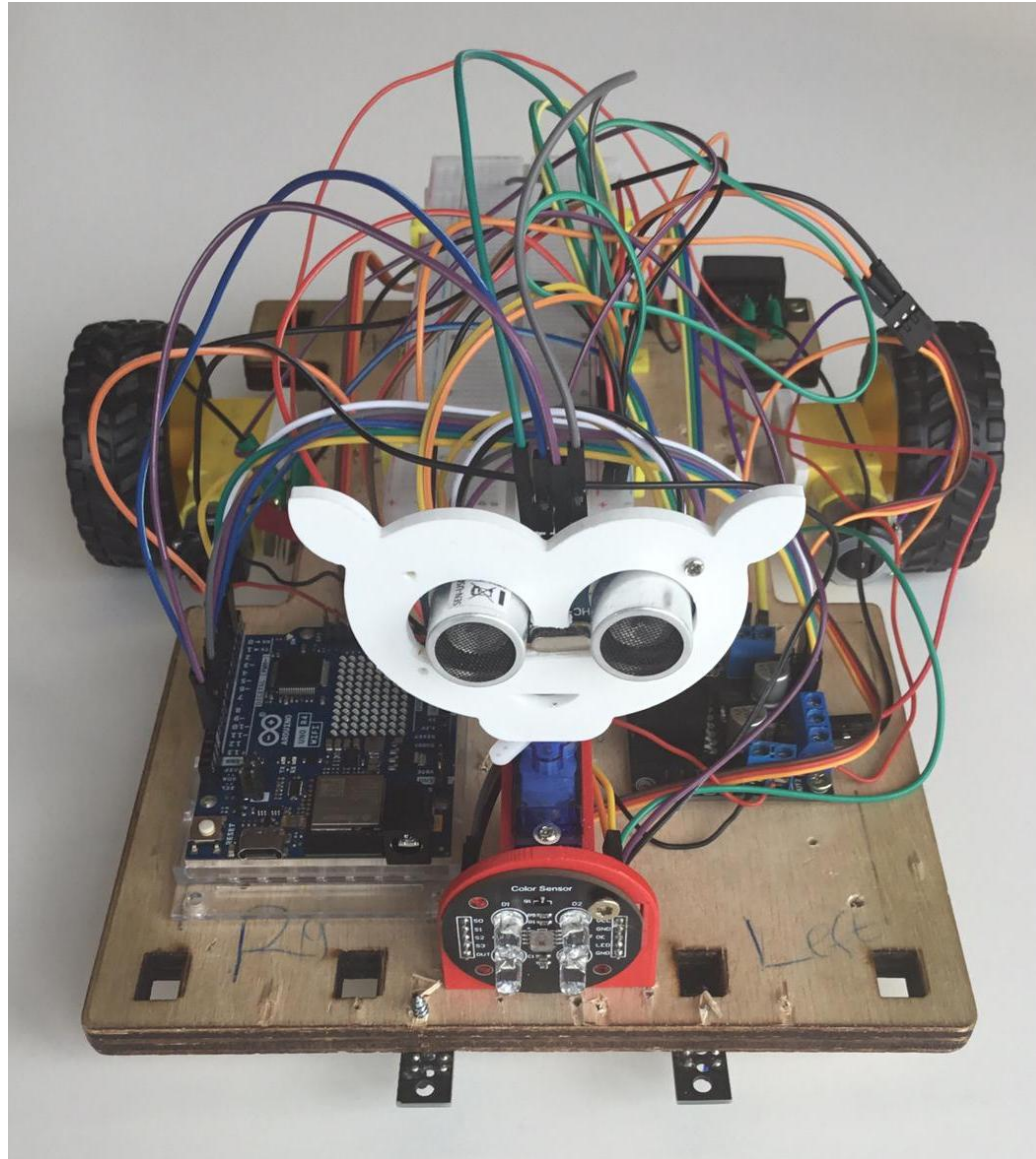
03

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Our Final Prototype



Thinkercad Simulation

