



MS101 | Makerspace Lab

Project Report

Week 1

Team Name: P3-T13

Team Members:

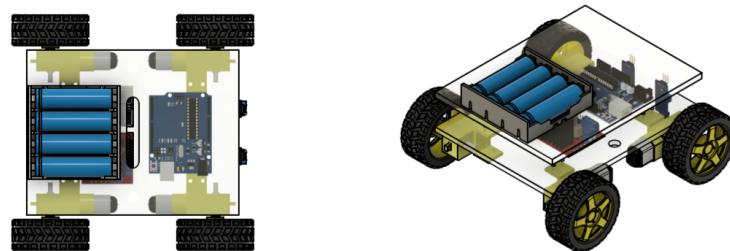
1. 22B2253 (Krishna Patil)
2. 22B2254 (Vedant Agarwal)
3. 22B2255 (Aryan Gupta)
4. 22B2256 (Krishna Khandelwal)
5. 22b2257 (Niranjan S)
6. 22b4511 (Ayush Mishra)

Salient steps in the Project

We will be laser-cutting two chassis for our project. Two IR Sensors will be used for the line follower bot. We have used the skid steering technique for the steering mechanism. The 4 wheels are connected to 4 BO Motors(100 rpm). We are using a power supply of 12V. We are using one L298n motor driver. It allows you to switch the direction of the current, which means you can make a motor spin in both directions.

Extra features include a Bluetooth-controlled robotic arm/claw. The components for this will be procured using 3D printing/Laser-cutting. The arm will be controlled using servo motors. Claw movement involves the rotation of gears. We are using the HC-05 Bluetooth module to accomplish this task. We will also have manual control over the car's wheels using this Bluetooth module.

Draft Drawings



The above is a rough estimate of our project, which we made on Fusion 360. Note that the arm has not been shown here. (Few components have been taken from <https://grabcad.com>)

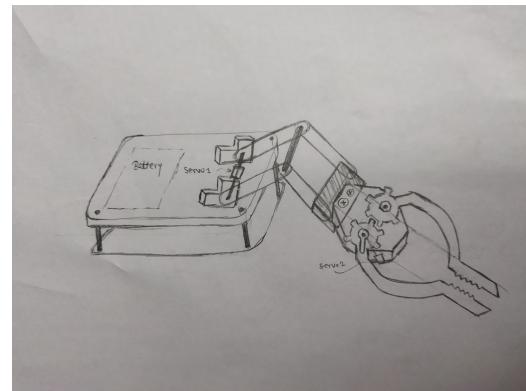
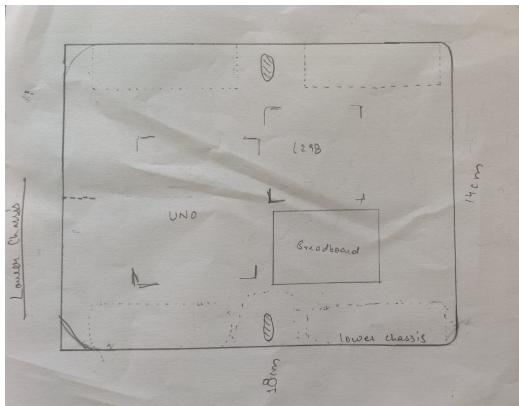
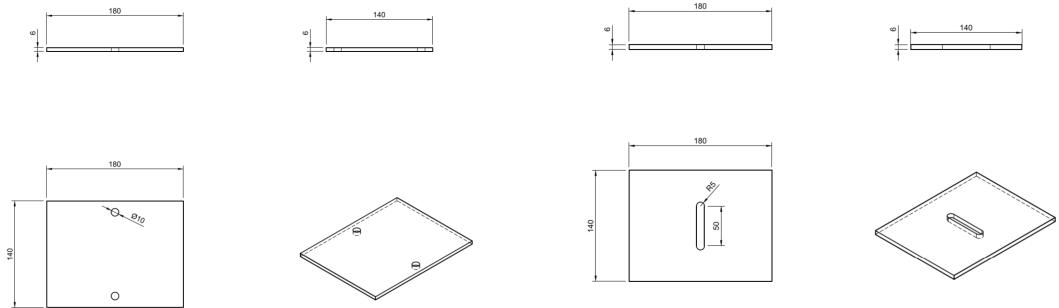
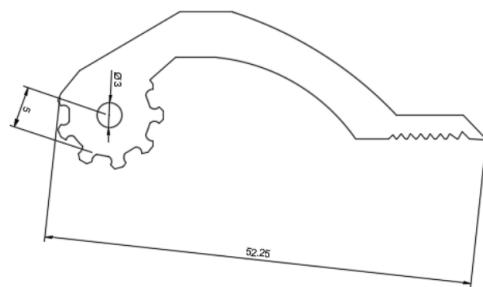


Diagram not drawn to scale

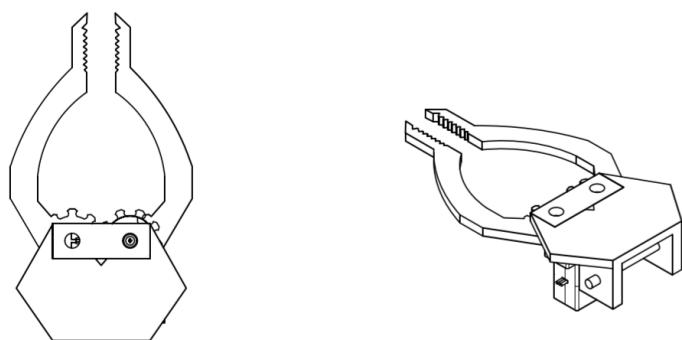


Lower Chassis

Upper Chassis

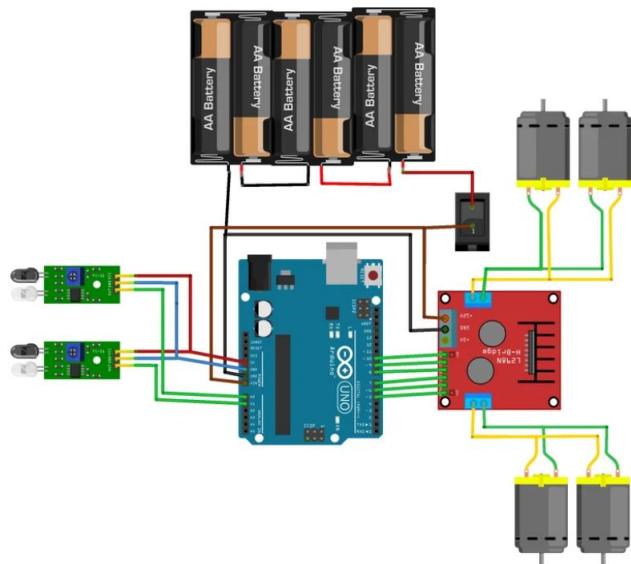
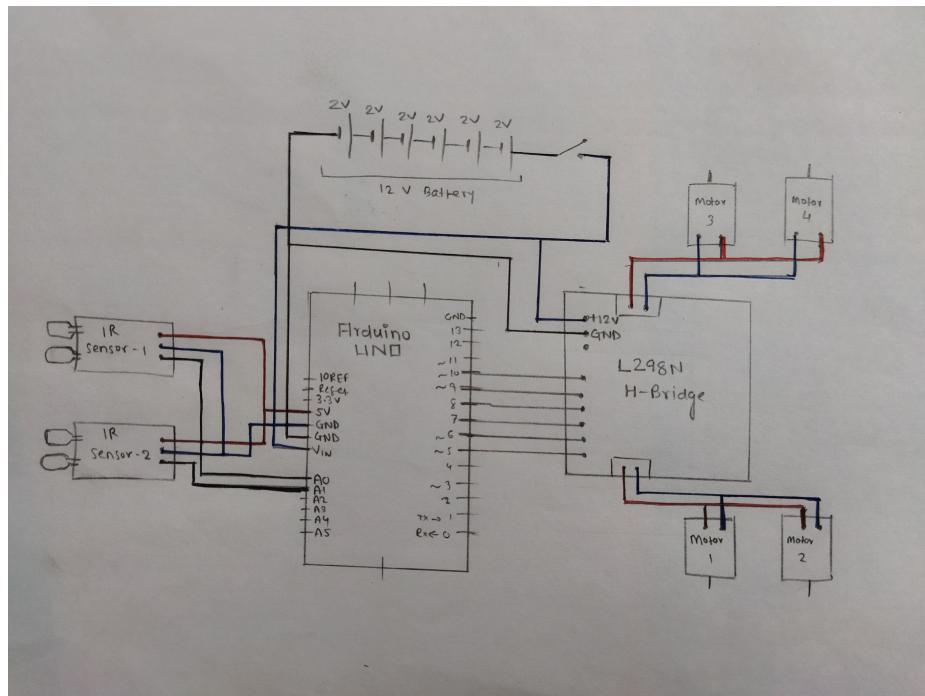


Claw Teeth



Complete Claw with Servo Motor

Electrical circuits



Source : <https://www.instructables.com/Line-Follower-Robot-Using-Arduino-Uno-and-L298N/>

Bill of Materials

Item	Quantity	Source	Cost(INR)
L298n Motor Driver	1	Personal	0
Wheels(65mm)	4	Personal	0
BO Motors(100 rpm)	4	Personal	0
Breadboard	1	Personal	0
IR Sensors	2	Personal	0
Chassis	2	Laser Cutting	0
Battery(12V)	1	Mangaldeep Stores	440
Clamps	4	3D Printing	0
Bluetooth Module(HC-05)	1	Personal	0
Servo Motors	2	Personal	0

Estimated Cost = ₹440

References

- <https://www.instructables.com/Line-Follower-Robot-Using-Arduino-Uno-and-L298N/>
- <https://grabcad.com>
- <https://youtu.be/F2m7U23CCfs>