TEAM AURACLE

Map. Think. Move

Technical Overview

1.Chasis dimensions : 30cm*22cm*20cm

2.Motor controller : Arduino Nano

3.Microprocessor: Rasberry Pi 5

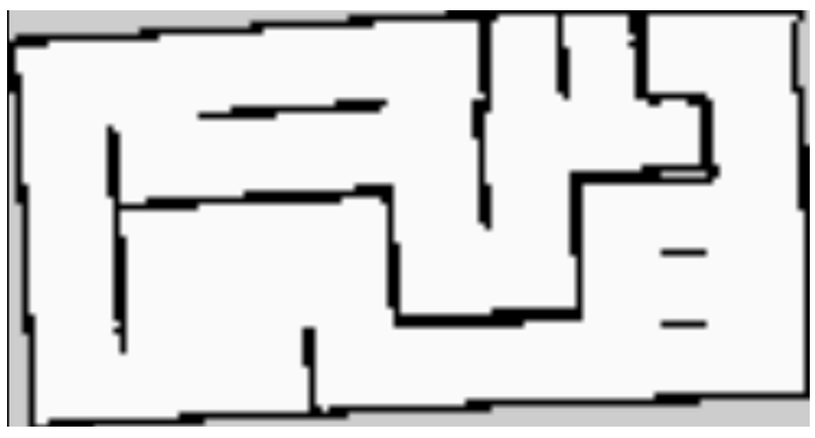
4. Li-Po 3S 12V battery power supply

5.RP- LiDAR

6.Motors : Stepper & DC gear motor



Visualization



With RViz,
Mapping and navigation data are transformed into 3D visuals, allowing us to see paths, obstacles, and movement in real time

Achievements

- Mapping – Built a system to create and update environmental maps for navigation.
- Terrain Navigation – Robot moves reliably across uneven on complex surfaces.
- Image Detection – Integrated vision system to identify and classify objects.
- Object Handling – Automated loading and offloading of items with precision.

Components



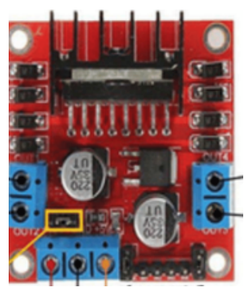
- Provides 360° laser scanning for mapping and obstacle detection.



- Acts as the brain, running navigation, vision, and decision-making software.



- Handles low-level control of sensors and actuators.



- Regulates power flow to motors for speed and direction control.