SUMO PROJECT

SOFTWARE COMMITTEE

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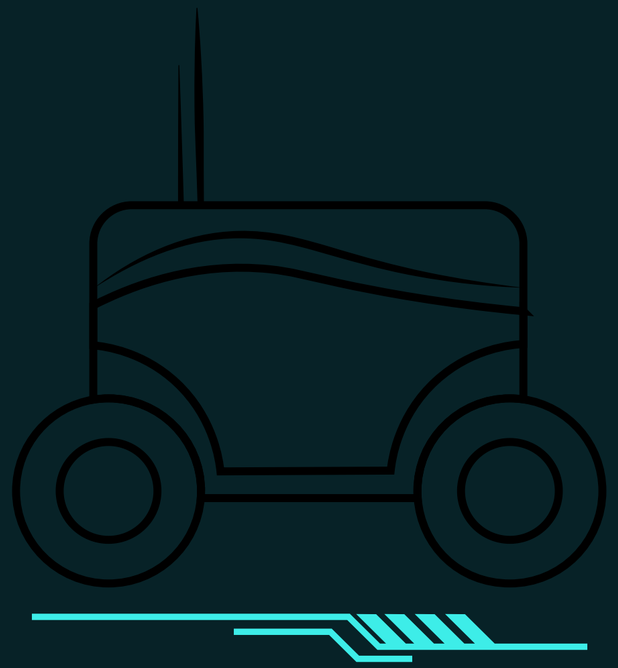
Strategy

Since we can't move at high speeds, our strategy tends to be basic, simple, and efficient. Basically, we let the robot move forward, then turn right 45 degrees, and finally turn left 90 degrees to position itself 45 degrees away from the starting position. This allows us to cover the blind area effectively. Of course, we made sure to check the ultrasonic sensors after every move until the enemy enters their range. Once the enemy is within range, the robot starts moving towards it, attempting to push it out. The IR sensors keep the robot inside the ring until the enemy is closer than 10cm. At that point, the robot gives priority to the fight.



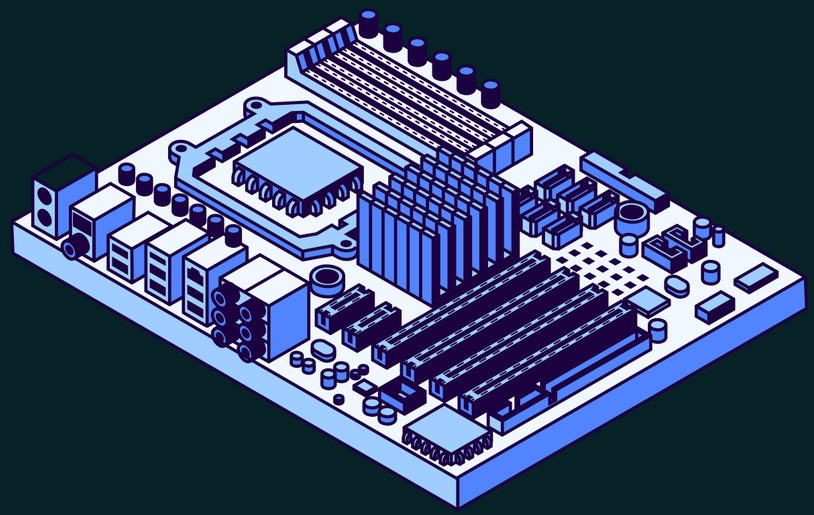
Coding Challenges

These are some challenges we had during the coding process:

- Integrating and calibrating sensors like ultrasonic sensors and infrared sensors.
- Implementing precise and responsive motion control to navigate the robot within the sumo ring while maintaining stability.
- Developing an effective strategy for the robot to identify the opponent, analyze the situation, and make decisions.
- Identifying and fixing software bugs, logic errors, or sensor calibration issues.

Hardware Related Issues

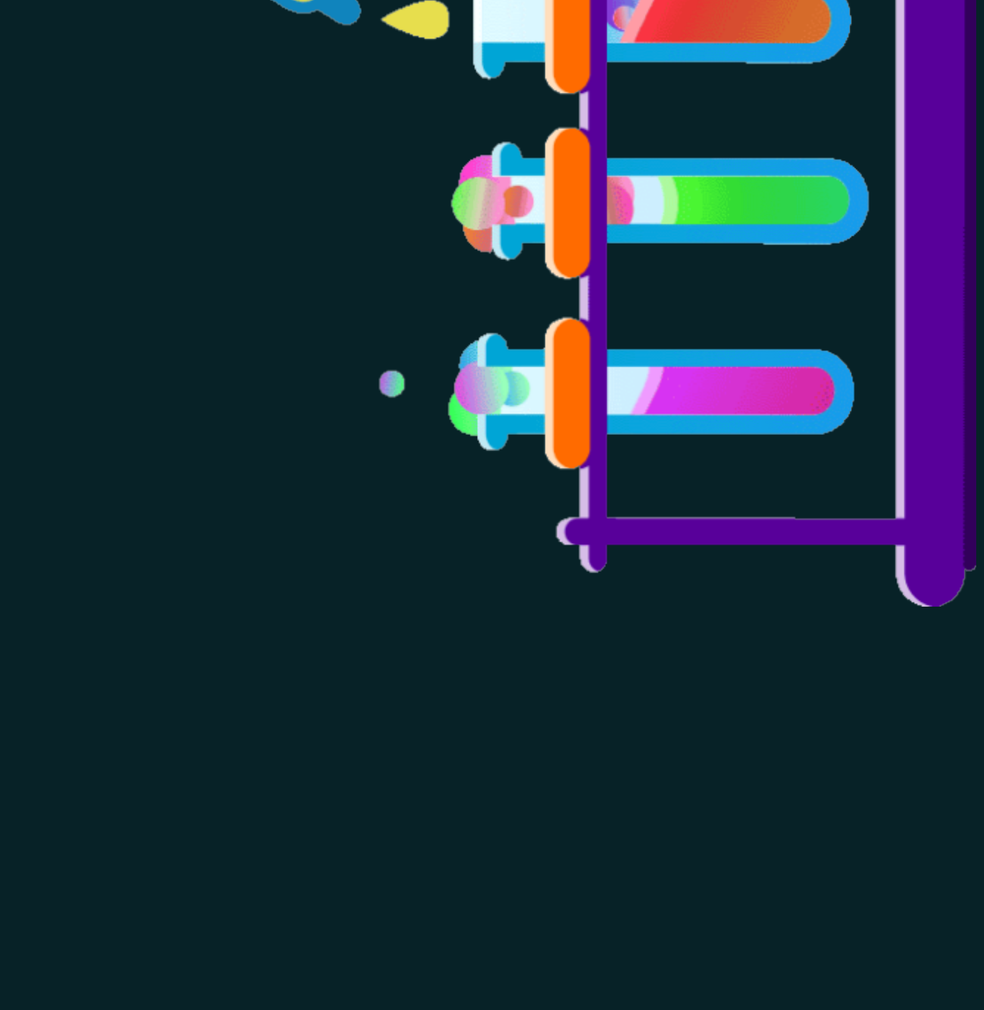
Not to place blame solely on the hardware committee, but we could have tested and improved our code sooner if they had finished earlier. Additionally, we could have utilized better motors for enhanced performance.



Mechanical Related Issues

We encountered two main issues related to the mechanical design: the placement of the ultrasonic sensors and IR sensors. However, we were able to collaborate and find a solution in the end. Additionally, due to the delay caused, we were unable to test and improve our code and strategy earlier.

Testing Challenges



Meet Our Team

Islam Mohammed

Omnia Sherief

THANK YOU