Window Cleaning Robot

Tinkering Lab
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PG-12

Members:

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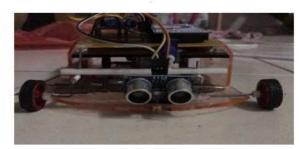2022CHB1040> Aman Jain
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Our Approaches:

- Magnet based robot
- ➢ The project could have been mobile.

  Failed as the magnets were too small and hence not strong enough for thick glass + made the model heavier

We lost
Mobility
.

Hence We Switched to the Suction cups based approaches.
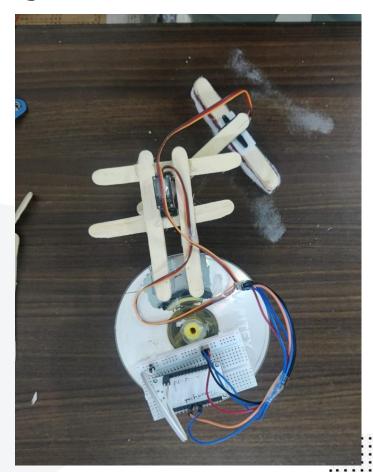
Final Project:

We used two servo motors to provide 180 degrees rotation on 2 joints/ axes.

The control website could be accessed using the address : 192.168.4.1

<u>Shortcomings and Difficulties faced</u>:

>The robot cannot move, and hence, has limited AoE.

>There is the issue with multiple connections.

>The Power Supply to the controller is limited to the power provided by the ESP32.

>There were both Mechanical and power Issues with running 4 motors at a time, hence, a reduction in the number of motors.

>The project unit is not that Sturdy.

>In our case, weight was a crucial factor.

Possible improvements:

>Mechanical:
- The Structure stability could be improved with the application of better materials.
- The Joints could also be improved, if better fasteners were to be used rather than the Hot glue.
- There could exist a better and more sophisticated design as ours is very primitive.

>Code:
- The website could be prettier.
- More automation could be introduced.
- In fact, with the usage of more sensors, We could improve and introduce a lot of automation.