Wall Follower Bot

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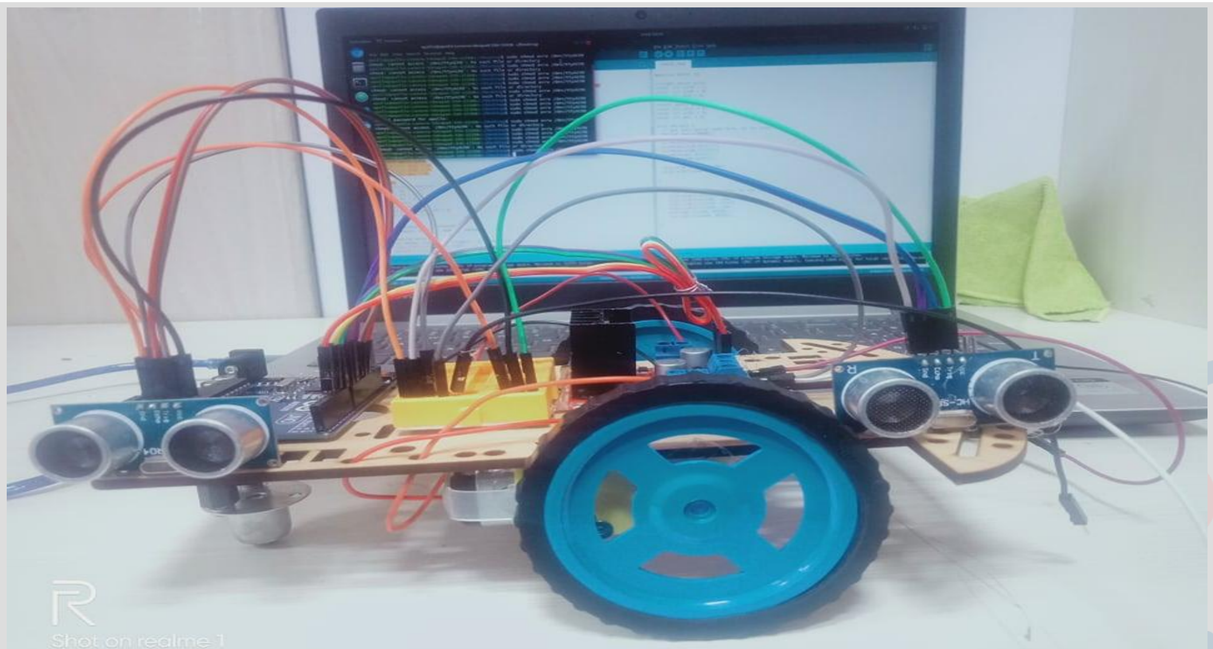
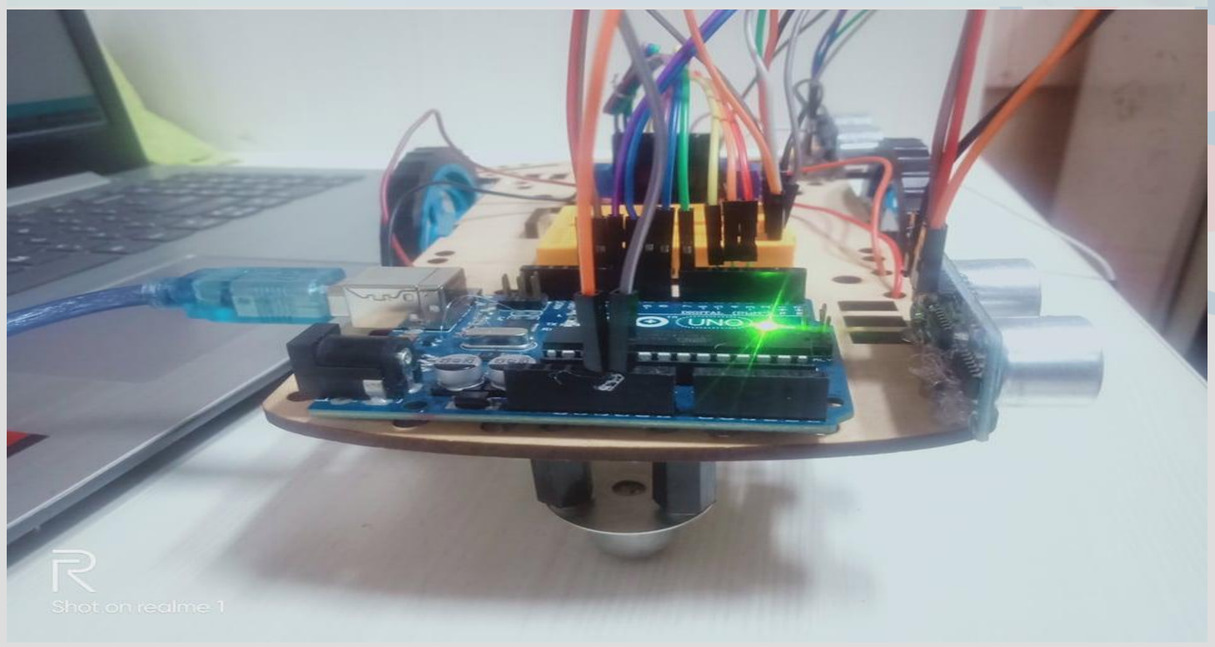
Abstract/Introduction

Wall follower bot is an arduino based robot which follows a straight path at a fixed distance from the wall.The bot itself is verybasic in nature however, it can be used in automation of selfdriven warehouse machines or such places where the space is very compact and we need to make the machines follow a straight path . In its better versions it can be modified to avoid obstacles which would further increse its efficiency.

Results





Methodology

The bot uses ultrasonic sensors (one at each of its rear and front end) to get distance from the wall. A region is defined in which the bot will traverse for a fixed distance from the wall.Whenever the bot crosses that region it will get signals from the sensors about its position and will act accordingly.

To take care of the relative position of the bot

Conclusion

Problems faced:

1.The sensors wont work properly if the angle between the bot and the wall is more than 45 degrees.

2.The motors were not ideal as a result the speed of motors for same value of theoriticalspeed were not same.

3.For proper fuctioning of PID we had to test a large number of trial runs in order to find the appropriate value of constants.

References

https://www.coursera.org/learn/mobile-robot

--The coursera tutorial about wall follower