CPG No: 148

Autonomous Taxi

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AIM

To develop a self-driving taxi which, the user can book through our website and would help to reduce the operational costs and guarantee increased safety along with many other benefits.

INTRODUCTION

India has a serious problem of mobility. Not everyone can afford a car or knows how to drive and renting a normal taxi with a human driver is not always safe, especially for women. Therefore, Autonomous Taxi gives more freedom to people to travel even at odd hours and not worry about their safety.
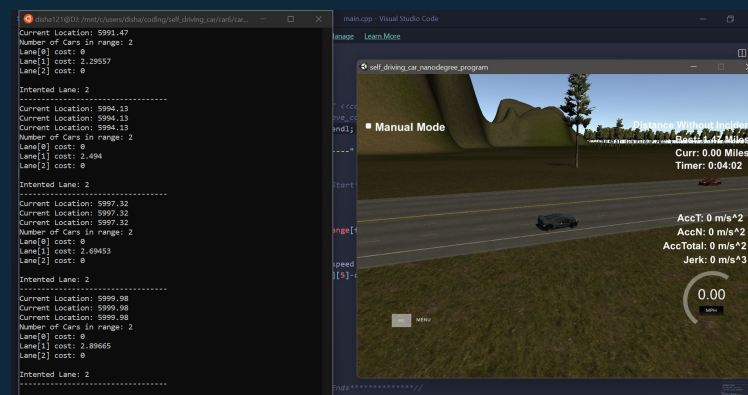
PROJECT OUTCOMES

- A website that can:
  - Successfully sign up / login user.
  - Check availability of a taxi.
  - Book a taxi

- An autonomous taxi that can:
  - Smoothly move on trajectory.
  - Stay in lane.
  - Avoid collisions with other vehicles
  - Switch lanes when necessary
  - Stop at predefined destination

METHODOLOGY USED
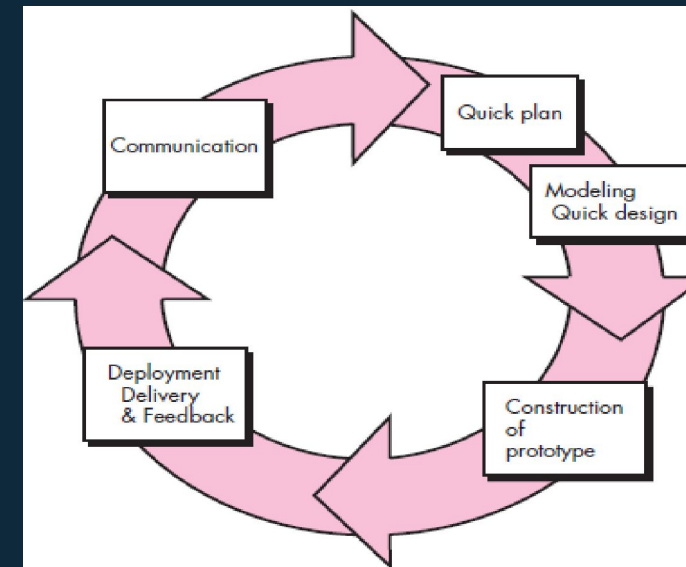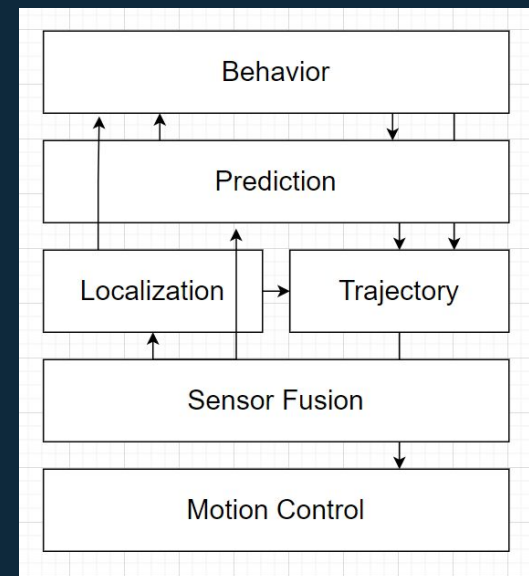
SNAPSHOTS

FUTURE SCOPE

- More than one location can be added.
- The stop and start motion of the taxi can be made smoother.
- Location detection through GPS can be added.
- Secure payment option can be added on the website.

CONCLUSION

The website can perform successful sign up / login and can also book a taxi. The taxi can move smoothly on the predefined trajectory and successfully change lanes when needed while avoiding most of the collisions with other vehicles. It can also stop at the destination point.

REFERENCE

[1]Burghout, Wilco & Rigole, Pierre-Jean & Andréasson, Ingmar. (2015). Impacts of Shared Autonomous Taxis in a Metropolitan Area.
[2] Han, Miyoung & Senellart, Pierre & Bressan, Stephane & Wu, Huayu. (2016). Routing an Autonomous Taxi with Reinforcement Learning. 2421-2424. 10.1145/2983323.2983379.