

Introduction

CarmaGO is a futuristic mobile and web-based platform designed to take personal transportation a step further by integrating autonomous vehicles into daily life. The application allows users to:

- Use their personal cars to get from point a to b by simply typing in the address
- Monetize idle cars by assigning autonomous taxi jobs for potential extra income
- Fast, reliable, cheap ride for people that need mobility through the city

Purpose of the app

CarmaGO aims to reduce the cost of high transportation costs, reduce the amount of drivers needed for taxi jobs and help adapt the driverless cars to modern day transportation

Objectives

- Enable effortless navigation with optimized routes
- Making personal mobility inclusive and adaptable
- Allows users to earn income by deploying their vehicles for taxi services when not in use
- Incorporate Google Maps API for real-time tracking and navigation

Research

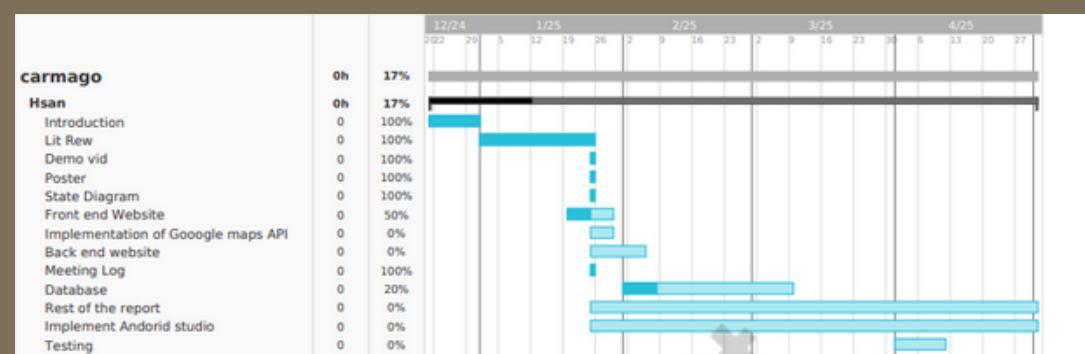
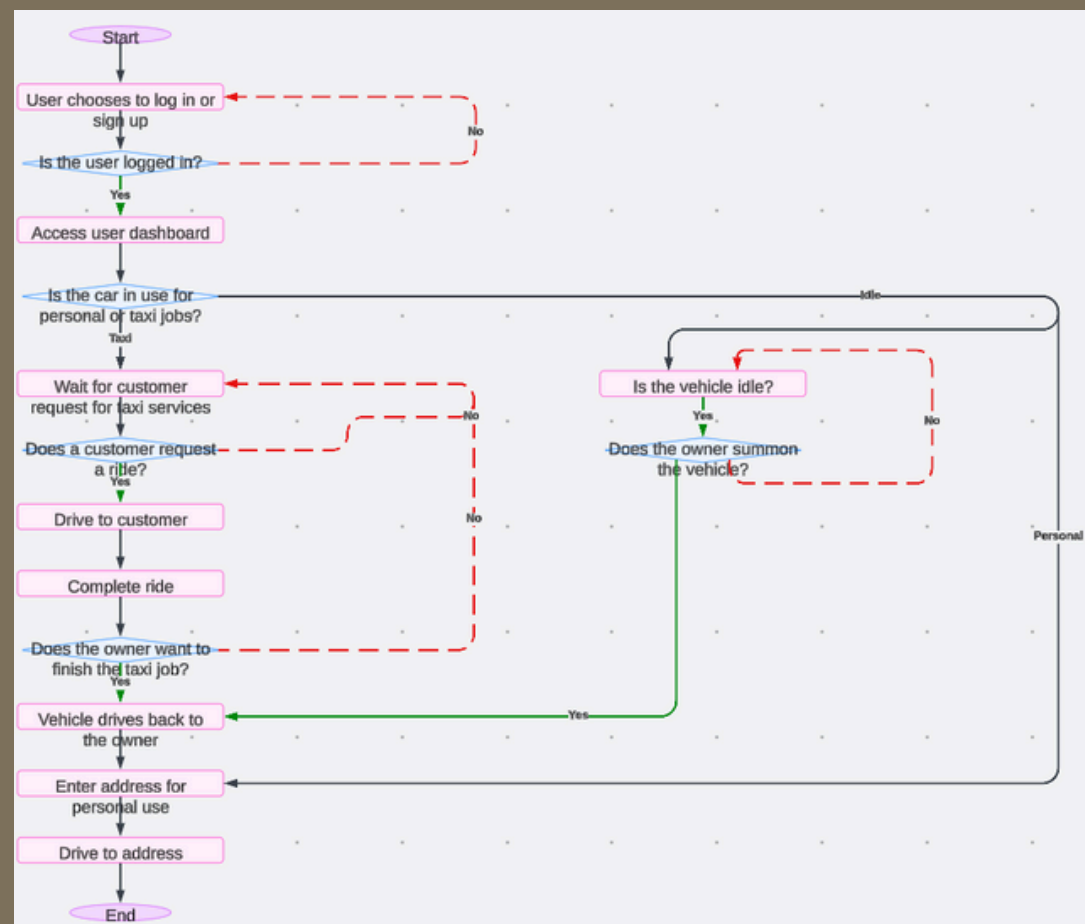
The integration of Ai to the vehicles has started with a challenge hosted back in early 2000s by DARPA since then the self-driving cars have been improving. This challenge laid a foundation for car companies, Tesla and Waymo are the leaders in this sector at the moment with their self-driving cars in the market. Regardless of these advancements, there are major challenges such as high computational demands for sensor data processing and people's doubts about artificial intelligence and how reliable it is. However the opportunities are as significant, such as reducing the operational cost, enchaining safety, battery efficiency and enabling modern business models such as vehicle-as-a-service. These developments continue to shape the future of transportation and it the growth of this industry for the past couple years is impressive and exciting to see what is next .

Key features

- Account management, this tool should handle log in and sign up
- Destination Input, this tool should allow user to input a destination
- Vehicle control, if vehicle in taxi job summon it with a button
- Taxi job, accept and complete ride requests.
- Cost calculation, calculate cost based on distance

Non functional

- Reliability, ensure the app and vehicle communication works
- Cross platform combability, app should work on website and android
- Usability, the app and website should have a clean interface



References

Defense Advanced Research Projects Agency (DARPA) (2004) The DARPA Grand Challenge: Development of autonomous vehicles. Available at: Incorporate Google Maps API for real-time tracking and navigation (Accessed: [1/25/2025]).

GeeksforGeeks, n.d. Unified Modeling Language (UML) State Diagrams. [online] Available at: <https://www.geeksforgeeks.org/unified-modeling-language-uml-state-diagrams/> [Accessed 25 Jan. 2025].