CSD 345:SOFTWARE DESIGN LAB

MOLA

MY ONLINE LOCAL AMBULANCE

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What is MOLA?

- Web App
- Three views: Patient, Organization View, and Super Admin View
- Allows the patient to book different types of ambulances in real-time based on their availability in the vicinity of his location.
- Allows the organization to optimally add and allocate the ambulances as per the demands of the patient.
- The patient can choose the type of ambulances as per the requirement.
- Super Admin view is provided to view all the ambulances and bookings made.

Prime Area of Concern

Our main focus was to ensure timely ambulance availability depending upon:

- Upon the type of ambulance needed
- Location of the patient

Tech Stack

1. Realtime Database: Firebase
2. Frontend: HTML, CSS.
3. Backend: Javascript and Google Maps API.

Motivations behind MOLA

The impact of COVID 19 made us realize the wide disparity in the healthcare services available and the issues faced by the general public in accessing them. If cabs can be booked online why not ambulances?

Improvising the plain ambulance booking system by differentiating the types of ambulances available to the user based on his needs, motivated us to build MOLA.

The novelty of the cause that MOLA would cater to made us final zero into this idea which would allow us to do our bit to serve the community by bringing ambulances to travel to us on our screens in a simplified manner.

Executing the Program

System Specifications

Platform: Windows 10 / Linux / MacOS
Client-Side Validation: JavaScript
Server-Side Validation: Firebase
Database: Firebase

Pre-Requisites

1. An IDE that supports HTML, CSS and JavaScript.
2. A V8 web browser

How to Start?

MOLA->Test Frontend-> HTML -> page0_home.html

Program Flow

1. Begin with the page0_home.html, which provides you with the three options of user view, organization view, and super admin view. You can visit any of them based on your needs.

2. First, we go through the user view, this will make you reach the login page for the user (page1.html). Here, you are provided with three options: enter your email id and password, 'Sign Up!', and 'Forgot your password?'. There is also a feature of 'remember me' to hold your login details.

3. In the navigation pane, we have 'About' (aboutUs.html) and 'Contact Us' (contactUs.html) provides the user with the details regarding our software.

4. First, we register a user by going to sign up (page2_sign_up.html) and providing all the necessary details. Upon registering the user, our database will check whether the user already exists and all the necessary validation regarding each field. After registering, you will go back to the login page and a verification link will be sent to the registered email.

5. You will have to verify yourself first otherwise it will show an alert when you try to log in. After verifying, you can log in which will move you to the main page for the user (page3_map_user_view).

6. When this page loads up, it requests for you to enable your location. Click on 'allow' and the map will load showing all the "available" ambulances near you. When you click on the ambulance of your preference you will see a dialog showing the driver's name, phone number, and ID of the ambulance. To check how much time, it will take for the ambulance to reach you click 'Check Distance' and it will display distance, ETA, and the cost of the ride. Click on 'Book Now' to book the ambulance.

7. You will reach the page (page4_user_booking.html) where it will ask for your location, after selecting 'allow' you will see an alert showing your ride has been booked and the details will be shown regarding the booking.

8. In the navigation bar you can check the status of all the rides you have booked from 'Your Rides' (page5_your_rides.html).

9. Click on 'Logout' to log out from your account. For proper authentication, we have enabled the feature, so that no one can log back in after logging out from clicking back only.

10. Now let's say you forget your password and click on 'Forgot your Password?' you will go to the reset password page (emailVerification.html) where you will have to insert your email and click 'Reset', a reset password link will be sent to your email where you can set a new password.

11. You will reach the home page by clicking back in the navigation pane.

12. From there we go to the organization view. We arrive at the login page for the organization (Hospital_login.html) which is provided with the same features as the one for the user login page with the slight variation of adding their organization ID during registration. (Hospital_sign_up.html).

13. After logging in, a map will be shown with all the ambulances spread across India registered under the respective hospital (Hospital_map_view.html). Upon clicking on an ambulance, you will be able to see the driver's name their phone number, and the ID for the mentioned ambulance.

14. The Navigation bar is provided with 'About', 'Contact Us', and 'Our Providers' (ServiceProviders.html) to show a list of all the organizations that are attached to our service.

15. There is also a feature of 'Add ambulance' (organizationAmbulance.html) where you can insert the necessary details of an ambulance and register it for it to be used by the software.

16. From here you can log out again using ‘Logout’ which has the same features as in user view.

17. There is also a feature of ‘Add ambulance’ (organizationAmbulance.html) where you can insert the necessary details of an ambulance and register it for it to be used by the software.

18. From here you can log out again using ‘Logout’ which has the same features as in user view.

19. Now we move to our third view that is the super admin view, which is built for the creators of the software.

20. You click on ‘Super Admin View’ and reach the login page (super_admin_login.html), provide the email and password, and log in.

21. When this page loads up (super_admin_map.html) we are able to see ambulances of every hospital in India registered on MOLA.

22. In the navigation pane, we have ‘About’, ‘Contact Us’, and ‘Show Bookings’ (super_admin_booking.html) where you can see all the bookings made by each customer.

23. From here we can simply log out using ‘Logout’.

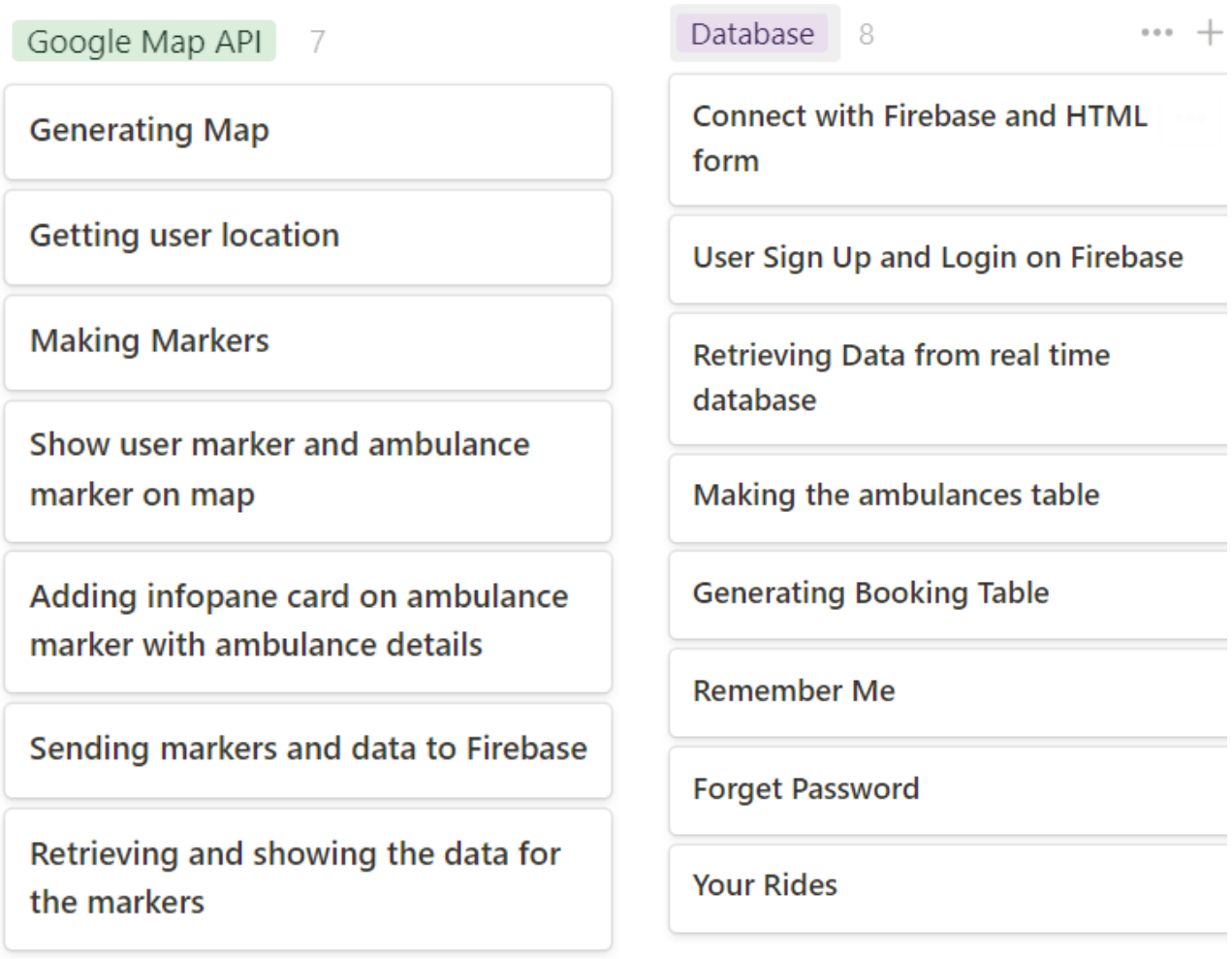
Special Features

Some special features have been implemented both at the backend and on the frontend to enhance the working of the web app while ensuring the security of the account of the user.

1. Different types of color-coded ambulances are shown on the map: PTV, ICU, super-fast, free.
2. Haversine Distance and Ariel Path for displaying the path between ambulance booked and user.
3. Mail Verification
4. Used Cache
5. Remember Me for the password
6. Customizable Costs of ambulances (Can change based on location)
7. The heuristic used in cost calculations
8. Your Rides to view all the rides associated with the user.
9. Automatic availability of ambulance after ETA is over.
10. Super Admin view for viewing all the ambulances and the bookings.
11. Reset Password: FROM FIREBASE ITSELF

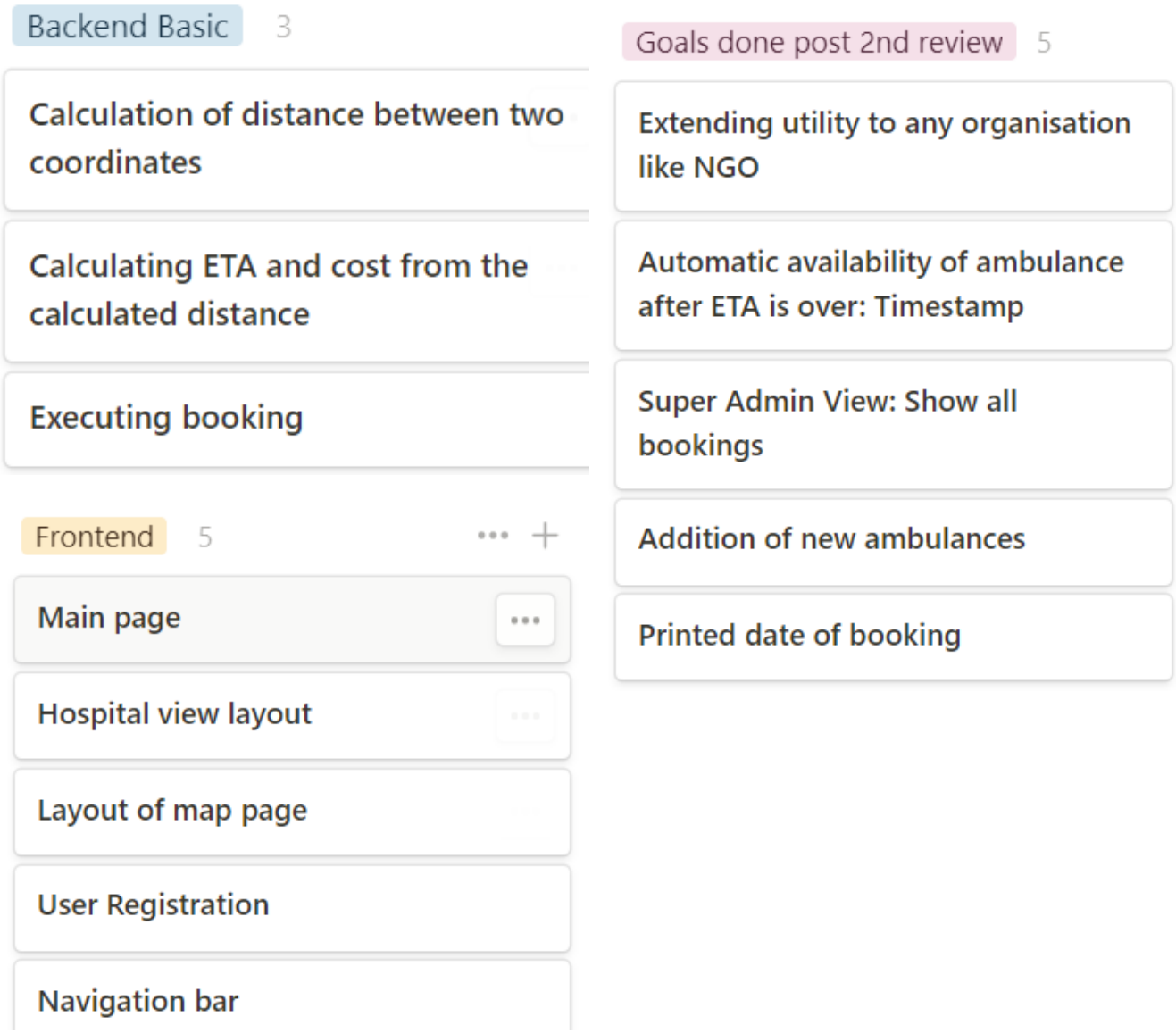
Objective Tracker

Category wise objectives met are listed below:



Objective Tracker

Category wise objectives met are listed below:



Limitations Faced

Paid APIs posed us a monetary challenge and thus we had to resort to Haversine Distance for ariel distance calculation between the ambulance and the user as the API feature to calculate the distance using satellite information was paid.

Also since the product was in the initial stages, we have worked on dummy data.

Future Aspect

1. Extensibility as a formal product for any organization use by incorporating GPS for tracking.
2. Contacting the hospitals to partner with MOLA and thereby working on real data.
3. Increased reach to smaller and rural regions of India to contribute as a youth in the digitization of the country.
4. Adding payment options along with the booking system.

Key Take Aways

1.Novel Idea Generation

We developed research skills in brainstroming to come up with an innovative idea with a strong sense of novelty.

2.Development Phases

The group went through different development phases to progress from a mere idea to final draft by adding unique features by visualizing it in a real space.

3.Developing Technical Skills

Learning about the use of API, integrating map and implementing the booking system while exploring with the database on Firebase were some of the major technical aspects of the project.

4.Handling Limitations

Progressing the application from testing to debugging phase and final product stage after series of testing.

5.Group Management

This involved leveraging the strength of each member, handling multiple tasks at a time and finally amalgamating the efforts of all the individual members to deliver a final product.

Acknowledgements

We would to thank Prof Dr. Snehasis Mukherjee for his continued guidance throughout the development of the project. Our sincere gratitude to him and Prof Dr. Pooja Malik for their valuable feedback received post the reviews.

Thank You.