THEBOYS - TEAM 105 - Project Report and Demo Video

Team members: psg4, sb70, sk120, deepaks3

Project Demo Link:

https://drive.google.com/file/d/1YDemf3Dwh6evEUQqNv4DtskFNcxsy_w9/view?usp=sharing

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Please list out changes in directions of your project if the final project is different from your original proposal (based on your stage 1 proposal submission).

The direction of our project did not change from our stage 1 proposal. Our initial aim was to build an application for the UIUC students to carpool. We fulfilled our proposed idea and also scaled it to work across the country.

Discuss what you think your application achieved or failed to achieve regarding its usefulness.

Our application has achieved its core purpose which is to let the students carpool between two end points. However, we have not implemented the alert messaging and rating features mentioned in the stage 1 proposal.

Discuss if you changed the schema or source of the data for your application

1) We added TripID column to the Rides schema to reduce the number of joins with other schemas, thereby, optimising our query execution time.
2) We have dropped the Alerts & Notifications schema due to the complexity of the messaging feature implementation in the UI.

Discuss what you change to your ER diagram and/or your table implementations. What are some differences between the original design and the final design? Why? What do you think is a more suitable design?

We dropped the Alerts & Notifications schema as we did not the implement the messaging feature due to its implementation complexity. Instead we allowed the riders

to send a comment to the owner during the ride booking phase. We felt this made the application simpler while achieving its purpose.

Discuss what functionalities you added or removed. Why?

1) Instead of having a fixed set of sources and destinations, we have integrated the Google API to our application in order to get the latitude and longitudes of sources and destinations that are new and were not recorded. This helps scale our application and make it more dynamic.
2) We have removed the rating and messaging feature due to the complexity of its UI implementation.

Explain how you think your advanced database programs complement your application.

We have implemented the trigger and stored procedure programs. The usefulness of each are stated below:

- Triggers: When a rider makes a request for a trip, the owner can either accept or decline the request. Incase of acceptance, we need to reduce the number of seats for that trip for other potential riders. This is achieved by the trigger. This way, no two riders can book a same seat.
- Procedure: When a rider searches for a ride with a particular source and destination, we use the stored procedure to implement a euclidian distance formula to check for all owners who have posted rides within 2km radius. This makes the search process more dynamic. It also helps users who have a destination that is close by but does not exactly match with the owner's destination.

Each team member should describe one technical challenge that the team encountered. This should be sufficiently detailed such that another future team could use this as helpful advice if they were to start a similar project or where to maintain your project.

psg4: Being new to the tech stack, I had few difficulties in setting up react , routing across pages and processing API requests in the backend. I heavily relied on the react documentation and youtube videos for the same and would suggest the same to others in the same bucket.

sb70: Adding a new textfield that communicates with Google maps API asynchronously to suggest the locations based on the user's text input was challenging. The documentation mentioned by google is outdated and didnt have the feasibility to get the latitude and longitude from the API and send it to the server so that it can be added to the DB.

sk120: Hosting the entire application on GCP was difficult as I was new to cloud. I managed to host the Database on GCP but we were not able to host the application on cloud as we it needed dockerisation.

deepaks3: Pushing the code base to the git remote repository was difficult as react adds a .gitignore file by default and does not allow the client to be pushed. The fix was to drop the .gitignore file, but it took us a lot of time to figure this out as it is an un-expected behaviour.

Are there other things that changed comparing the final application with the original proposal?

None. We have implemented all the major features mentioned in the proposal except the ones mentioned in the above questionnaires.

Describe future work that you think, other than the interface, that the application can improve on.

We want to implement this as a mobile application so it'll be more accessible. We would also like to implement chat and call features so that the owners and riders can communicate beforehand.

Describe the final division of labor and how well you managed teamwork.

psg4 - Backend, Frontend, Stored Procedures implementation, and Google API integration.

sb70 - Backend, Frontend, and Triggers implementation.

sk120- Backend, GCP implementation and CRUD implementation.

deepaks3 - Frontend, Backend and CRUD implementation.