EVOLEON

Evoleon Mobile App

Project Handover

Trimester 3, 2022

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Project Overview

Initial Goals for the trimester

- Continue user interface development for app features.
  - Display more information in the pop-up box when clicking on a charger in the map.
  - Clustering the markers on the map to make it more efficient.
- Continue implementing and improving the user authentication process.
  - Work on database with custom user information for personalised account on app and work on displaying the personalized information on app when user logs in.
  - User authentication/login with google.
- Remove hardcoded EV Socket Locations within the applications map. Connect the EV Location map to the current database of locations in Firebase.

Project Members

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Location of project resources:

- Evoleon App play store listing (use evoleonapp@gmail.com to access as admin)
- Github Repository
- Github Build Pipelines
- Evoleon Expo Project (React Native Build Pipeline & submission to play store)
- Evoleon Trello Board
- Figma Board
- T3 2022 showcase video

Additional information:

- GitHub repository is being moved to the Chameleon company GitHub organisation after the end of T3 2022.
- Evoleon Gmail 2 factor authentication will be set up on a junior student's phone from the Best EV Locations Data Science team. This is due to their being no junior students on the Evoleon app development team and will ensure there is Gmail access for future trimesters.
- New starter guide for application development is located in the EV Adoption Tools MS Teams channel: [STICKY] New starter guide - App Dev.docx

Completed Deliverables T3 2022

Evoleon Application Development

Deliverables achieved this trimester and member contributions:

- Created a method to retrieve EV Location data from a Firebase database into the Evoleon app. Replaced the hardcoded location test data within the application with the data stored in Firebase. (Abraham)
- All EV Location data is now retrievable from Firebase and is connected to the applications map and map marker popup. This includes each location's amenity details that are displayed in the popup. (Abraham)
- Added capacity for unique names for each charger marker popup. (Abraham)
- Created custom popup for when a map marker is clicked using hard coded data within the app. The popup also displays charger location amenity details such as parking, restroom, and restaurant availability at that location from test data. (Leda)
- Obtained access to Evoleon google cloud console from Trimester 1 2022 and disabled the databases which resulted in significantly reduced costs by 100% from November to December. These databases are not used by the Evoleon app as we currently store our data in Firebase. (Leda and Abraham)
- Created a format in Visual Studio code that the location data for each charger can use to have their coordinates and details translated onto the applications map. (Abraham)
- Updated and created Evoleon project accounts. Moved repository across to an account attached to the Evoleon projects Gmail address, to enable the team to assign appropriate permissions to contribute to the repository in Trimester 3 and in future trimesters. Also updated GitHub workflows and secret keys, to be connected to Expo account during automatic checks when creating a pull request. (Leda)
- Added a database collection within Firestore to store the user information for a personalised account within the app. Connected the Evoleon application to this user information database. For example, updated the program code to create a Firestore document when a new user signs up for an account. Information is stored using the users unique ID. (Leda)
- Created a new feature for a user to favourite EV charger locations. (Leda)
    - The Firestore user information database is connected to the app to allow for this feature.
    - This feature is only available in the app if a user is signed into their account within the application.
    - A user's favourites can be viewed on the map, with different map marker icon styles indicating if the charger is in the users favourite list or not.
    - There is a switch to select to view only the user's favourite chargers. If the switch is off then all available markers are visible, and if the switch is on then only favourited markers are visible.

    - A user can add or remove a charger in the map marker popup when the user selects the heart icon. The Firestore database will be updated according to the user's actions. The heart icon in the popup will also change style according to if it is in the user's favourites list or not.
    - The users list of favourite chargers is stored as a sub-collection in the users unique Firestore document that was created when signing up for an account. Each new favourite charger is added as a document to this sub-collection.

- Profile page was improved to reflect the Figma designs and add functionality and personalisation. (Leda)
    - If a user is signed in, their display name is now visible on this page.
    - User can now sign in/ sign out from a button in this page. The button text and page title changes if a user is authenticated in the app. If a user selects the button to sign in, the app takes them to the original authentication process pages.
- Authentication process was improved so that the user is alerted if sign in or sign up failed or the incorrect email/password was entered. (Leda)
- Created a Trello Board that will allow our team to have access to one place for planning and organising all future and current sprint tasks for this trimester. The Trello account was created with the Evoleon app Gmail address. (Leda)
- Implemented marker "Clustering" which reduces the number of markers that appear on the screen at once and groups them the more zoomed out a user is. This was done with the goal of optimising the map so that older devices can better run the application. (Abraham)

Roadmap

Proposed Deliverables for 2023

- Work on adding real EV Location data into the new Firestore locations database created in Trimester 3. There was real EV Location data collected by data science students in Trimester 2 2022 which is stored in Firebase and in excel files in the EV Adoption Tools team's channel. This location data can be added into the new Firestore Locations collection, which will mean this real location data can be displayed in the app. The Best EV Locations team might have some data of real EV locations which could also be included in the Evoleon Firestore database.
- Create a navigation system for the applications map to travel to a selected EV charger.
- Add option to filter EV chargers on the map based on amenities stored in database for that EV charging location. (For example, display charger locations that have a restaurant). Designers could also create a design for filtering chargers displayed in the map. Could move or alter the favourites switch to have that included in the new filtering design.
- Move the hamburger menu from the top left of the screen to a menu at the bottom of the screen, similar to the Figma designs. The sign in/sign out button was added to the clients/profile page in Trimester 3, so that button doesn't need to be included in the menu.
- Complete a cyber security review of the app's authentication process, data storage, code in GitHub repository, and apps terms and conditions.
- Add the process to reset a user's password or delete an account.
- Continue adding user interface code for the applications pages.
- Implement splash screen (according to Figma) to the app. https://docs.expo.dev/guides/splash-screens/. May need to discuss with design team on what to use for this.

Product Development lifecycle

New Tasks

At of the start of the Trimester the team discusses what they would like to work on. Some returning senior students may have already identified tasks they wish to work on from the previous trimester as well. From there a list of tasks are created and assigned to people within the Trello board. Tasks currently not being worked on are placed in the backlog, ready to be picked up by team members in later sprints.

If team members identify new/extra tasks they wish to work on during the trimester, they can create a card within the Trello board and assign themselves to the card. The person taking on the new task can then notify other team members, to insure there is communication about tasks that are currently being worked on. This helps make sure there is no doubling up of work, and any technical issues can be identified or discussed by the team if required.

Once a week there is a meeting with the team to update about the progress of tasks, and to discuss what will be worked on over the next week. During the weekly meeting team members also communicate about tasks that they plan to pick up from the Trello back log during that week, or if they will continue with the current task they are working on.

Definition of done

For application development, a task is considered complete if the code works and is written in a style that is clear and maintainable. Generally, the function and variable names should be descriptive and communicate what that part of the code is trying to achieve. Comments can also be used to help communicate sections of the code if needed. However, the priority is to use descriptive naming. Using descriptive naming as a priority over comments ensures that if functions or variables are moved or changed, that there is no mismatch and that the code can be understood by future programmers.

Task review

Once the code is completed, a pull request is made from a branch in the repository to the main branch. Then at least one other team member should review the pull request to make sure the new code looks good. This includes making sure the code is readable and maintainable for future trimesters, and that the logic appears correct.

Testing

1. Before starting a pull request, the developer must first check everything is working in the simulator.
2. Then when the developer starts a pull request or merge into the main branch, there is a workflow that runs a build in expo. These checks need to pass before merging the PR into the main branch. The pull request must be from a branch into main for the expo login to work in the checks. (If it is a pull request from a fork, then the login won't work and therefore the checks won't pass).

3. When the pull request is being reviewed by another team member, they can test the project in a simulator to ensure it is working as expected before merging the code.

Branching Strategy

When using GitHub team members work on tasks in either their own task branch or fork. After completing a task, a team members can create a pull request, where it must be reviewed by one other team member before being approved. Once the code is approved, it can be merged into the main branch.

Currently the team uses GitHub desktop to do things such as switch between branches in a repository, clone, commit, and manage the repository locally. We recommend using GitHub Desktop for students in future trimesters due to the user interface making it easier to use, specifically for students who are new to GitHub.

Product Architecture

Tech Stack:

- React Native
- GitHub
- Expo
- Visual Studio
- Firebase / Firestore – a database that is low cost and easy to use.
- Figma – used to help understand the user interface designs created by the designers. There is useful information such as the CSS details which assists with styling the code. For example, finding the code for specific colours used in the designs.
- Trello – used for planning the teams work, assigning tasks, and tracking progress.

Login Credentials

Log in details can be found within the files of the EV Adoption Teams channel. The log in credentials document is not stored on GitHub to keep accounts secure. The document contains the login details or process for the following accounts:

- Evoleon Google Account
- Trello
- Expo
- Google Cloud console (not currently in use for project)
- Evoleon GitHub (Inactive after T3 2022, moving repository to Chameleon company GitHub)
- Figma (Contains the Evoleon app designs and the EVCFLO website designs from T3 2022)