# System Evaluation

In milestone 1 it was written with an assumption of the application fully functioning in terms of features and components, where those will be evaluated. The criteria that are to be evaluated are as follows: Response time, pages load time, main functionality (navigation), other functionality (signing up, requesting for password change etc.), and overall usability. Though it cannot be evaluated as my primary role was a UI UX designer in this research, thus the criteria will be changed into evaluating the screen and layout itself. It will be judged upon the design on Figma (Figma, n.d.), and application itself using an emulator (front end wise).

Evaluation Criteria Table

|  |  |  |
| --- | --- | --- |
| Screen | Outline of Elements | Functionality / Purpose |
| Splash Screen | * Application icon / logo | An introductory to the application. |
| Home screen | * Application Icon / logo (Smaller version) * Form tab * Confirmation button (Login button) * Quick links | Where the user either logins, or use the other allocated links |
| Sign up | * Forms * Confirmation button * Quick link | Where the user signs up |
| User created | * Quick Link | Congratulating and informing the user that it was a successful sign up |
| Forgot Password | * Forms * Confirmation button * Quick link | Where the user inputs their chosen email to reset their password |
| Password Sent | * Quick Link | Informing that the password reset link has been sent |
| Navigation (Idle screen) | * Forms * Quick Link * Current location | Displaying where the user currently is, and where they enter their desired location to go to |
| Navigation (Functioning) | * Current location * Traffic light status * Users within the vicinity information * Quick link * Indicator (where the user is headed) | Displays the traffic light system and how many seconds it is in that colour for. Informs of how many registered users are within the vicinity. |

### Application icon or logo

The application logo. serves almost no purpose in terms of functionality.

### Forms

Form tab where user can enter information such as their name, password, destination etc.

### Confirmation Button

The application logo. serves almost no purpose in terms of functionality.

### Quick links

Can be in the form of an icon, or text (highlighted in blue).

### Current Location

Current location status icon, which is only applicable in the Navigation screens, idle and functioning

### Traffic light status

Showing status of the traffic light in the form of an icon, and text. Only applicable when navigation is in progress.

### Users within the vicinity

An icon showing the current users within the vicinity. Only applicable when navigation is in progress

### Indicator (Where the user is heading)

Along side the current location status icon, this is represented in a coloured route to show where the user should be heading towards.

*Note: All pictures (Higher resolution) can be found within the GitHub repository documentation folder or the appendix section. For documentation purposes, it has been shrunk.*

Home Screen

|  |  |  |
| --- | --- | --- |
| Low-Fi | High-Fi | Application output |
|  |  |  |

Assuming that the splash screen is working as intended, this will be the main home screen right after that. The evaluation in milestone 1 states that this screen and other screens should be loaded within 1 second. However, from the newly refined evaluation criteria table, the elements can be seen on the screen. The low-fi design was created alongside milestone 1 and was presented to the allocated users (My chosen persona’s) where their valuable feedback was provided. Feedback such as familiarity of the application, and other ways of how to use the app, such as a quick trial before investing into the app. “Due to the limited patience of users, the form of information transmission must be simple and clear.” As said by Jinxian, (2020). With this quote alone and user feedback from both my users, it was a clear indication that the app should be simple, and straight to the point to match their personalities, that they do not have time to spare. With familiarty in mind, heavy inspiration was taken from Instagram (Meta, n.d.) specifically the login screen. This provided the user with the sense of familiar locations on where to enter their username, password, and the confirmation button. As of writing this documentation (2022) Instagram currently has a 3.8 star rating, with 135 million reviews, 1 billion plus downloads, and is ranked #2 in the field of social applications, in Google Play Store (Google, n.d.) thus with its reputation, the source of familiarity within Instagram can be trusted, hence the selection. Additional quick links were added, but slightly less obvious, yet still readable and noticeable. Although it was a low-fi design, the font was strongly rejected by the users. It was seen as unprofessional and inconsistent, which the feedback was taken heavily, thus in turn using the font “Noto Sans JP” which was simple and readable, provided by Figma. It is preferable that designers should adjust weight, size, and colour of the font, instead of changing the font overall as it will give the user a sense of disorder and misunderstanding whilst using the application. (Jinxian, 2020). Lighter colours are suggested in the interface to match with the background, allowing the user to interact or continue browsing. Different sets of colours will likely have the opposite effect as their attention is to decrease (Wen, 2021), therefore the main colour was between a shade of grey, white, and black mainly. Taken from the feedback and design approach, the fonts, and familiarity sense of usage was heavily applied throughout the entire user interface on each page, to create consistency. In terms of the refined evaluation criteria table, all elements are present in the high-fi and application output, thus the criteria has been met.

Navigation (Functioning)

|  |  |  |
| --- | --- | --- |
| Low-Fi | High-Fi | Application output |
|  |  |  |

In Milestone 1 it was stated that this page will be deemed evaluated successfully if the main components are functioning as expected, such as having very little to no lag or delays, as navigation in process should be as accurate as possible to help avoid unnecessary accidents etc. Traffic lights and the progress bar should also be a representation at the current location’s traffic light. Similar approaches as the home screen and other screens were applied, where criteria have been refined to fit my role’s criteria. Although it was a rough low-fi, the design was not desirable, thus some changes were to be made to fit not only my users, but with the assumption that their feedback will be correct to be socially acceptable as a navigation application. It was seen as the main component (navigation) being as a secondary component due to its smaller than usual sizing, while other components almost got half the screen and a very cramped traffic light, seemingly like it was forcefully in. Boundaries such as lines are often used by UI designers to divide blocks, and screen boundaries. Though these boundaries can make separators will make the interface simply too crowded when there are multiple elements within the interface (Jinxian, 2020). The secondary components (Traffic lights and users within the vicinity) have been reduced in size and placed at the bottom. The users within vicinity were originally going to display multiple personal avatars, but it was noted that it may seem distracting while driving, therefore it has been reduced to a simple avatar that is not customizable. The progress bar has also been replaced with a simple text acting as a countdown for the traffic light. Though majority of the navigation will be very similar to google maps as the aim of the application is to use its API and services. This will also help create familiarity with navigation apps as Google Maps itself is renowned and well known throughout the entire world. As of writing this documentation (2022) it currently has 3.8-star rating, over 15 million views, and over 10 billion downloads (Google, n.d.), therefore it is a trusted app to build inspiration and familiarity upon on.

# Usability Test

“An application or product is considered ‘‘usable’’ if it is pleasing, easy to use, and works as expected user interface. Most companies majorly focus on the application’s functional requirements but put minimal effort into user experience (usability).” (Ali, et al., 2022). To achieve my high-fi, a small set of questionnaires was asked during the presentation of my low-fi presented to my two users. Simple questions such if they have difficulty following my instructions on how to navigate through the application, and what other features can be implemented. The feedback given by the users are provided in the test metrics.

## Low-Fi

|  |  |  |
| --- | --- | --- |
| Test Metric (Low-Fi) | User 1 (Neku) | User 2 (Kristen) |
| Able to understand the concept of the application and navigate through | 100% (Highly able) | 100% (Highly able) |
| Suggestions | Font size or font overall needs to change and look more professional. Would also like a trial function instead of being forced to register with the app in order to use it. Would rather find alternatives if being forced to register | Font needs to be changed. The navigation page needs to be revised (Navigation function). Icons and so seem almost as big as the map and does not feel right being placed directly at the top. |

As the application was aiming towards simplicity, it was seen that the app was quite easy to understand in terms of concept, and what the functionality is expected to do among my two users, therefore they were both rated as “highly able” in terms of usability, thus the explanation is fairly obvious. Valuable feedback was recorded as shown in the test metric and was worked around upon.

## High-Fi

|  |  |  |
| --- | --- | --- |
| Test Metric (High-Fi) | User 1 (Neku) | User 2 (Kristen) |
| Able to follow my instructions and navigate through the application | 100% (Highly able) | 90% (Highly able) |
| Suggestions | A reminder on where we are heading to. (Navigation Functioning page) | The green arrow icon should be changed. (Navigation idle page) |

When in turn the high-fi was presented, a few suggestions were also made for future works and implementation. Although Kristen scored highly able in the high fi, I still gave her a 90% rating, because there was a small little error she encountered as a user, which was also one of her suggestions. Although she is still capable of using the application, she got confused between the green button and search button in the navigation idle screen as shown in figures 1 and 2.

|  |  |
| --- | --- |
| Figure Current location button | Figure Search button (And execute) |

Neku being a web developer, was able to understand and navigate through the high-fi concept quite easily without any user errors. Though he did point out that there should be a reminder tab of some sort to show where they are heading towards or where they currently are.

# Conclusion and recommendations

## Limitations and strengths

The strengths of this evaluation were that the overall design was simplistic, that users alike were able to identify what sort of application it was, and able to navigate through with ease. Though the colour was not talked about as much, it can be assumed that it did not bother the users as well as being very distractive.

Although this project was done within a windows environment, the emulation could only be run on an Android emulator. However, this is still considered a strength because the framework used was React Native, which can also be run on a Mac environment and iOS emulator as well. Though if strongly required, iOS emulation can also be run on a windows environment with some tinkering and work arounds. Therefore, with this strength having said, this application and code base can be run on either Mac OS or Windows with no alterations needed as much in terms of coding. “It is possible to build an iOS app on Windows with React Native” (Dike, 2021).

However, the limitations within the UI design were found and have been considered such as a reminder of where the user is heading towards (in the navigation function screen). Other than UI, limitations was also discovered among exporting from Figma to working React Native code. Although with positive reviews, and number of “hearts” the plugins provided were not as effective nor usable. I went from Sizze, Figma to React Native, Unify, Builder.io, Anima, to finally Locofy, where Locofy proved to be the most user friendly in terms of exporting to working code. However, even Locofy has its limitations. Although Locofy proved great and helpful, it was only limited for only less than a month of usage, thus it must be done within a certain time frame and quick. Though if were to use this in the future, it will be a suggested plugin for exportation. Another limitation was that the design was not a complete 100% replica of the design from Figma itself, therefore some manual coding must be done. The other plugins as mentioned had similar limitations, or just simply over complicated on what was trying to be achieved in terms of exporting to code.

## Recommendations and reflection

Reflecting on what has been accomplished to get this application running in terms of UI, was challenging but rewarding as I was able to gain knowledge from being able to use other technologies to export designs into working code. No regrets for choosing React Native as the framework, so sticking to what was mentioned in milestone 1 in terms of chosen technology was a perfect option, would have it no other way. It has inspired me to do more work with React Native and learn further with its framework. Use of Adobe XD was also mentioned in milestone 1, however it got scrapped and replaced with Figma. Adobe XD could not be utilized because of licensing issues which lecture, and I tried to resolve, which ended up in failure. With that being said, the unexpected happened and was forced to use Figma, which another technology worth mentioning not regretting to use. Other than chosen technologies, reflecting on the chosen methodology, was questionable. In milestone 1 it was stated to use the methodology “intense scrum” where it is mainly using scrum’s methodologies and combining the roles of PO (Product owner) and team member, to help collaborate with desired users as well as the developer and designer. This part of the reflection was questionable because it felt more of a waterfall methodology process was being used. Reason for this feeling was because each task was done thoroughly before moving onto the next. The chosen personas also became questionable upon their evaluation. The users made my research felt very biased, as it was testing people who knew how use technology. Perhaps with more users and non tech literate people, the results and feedback might be different? Nevertheless, the feedback provided from the users was still valuable. Evaluation criteria from Milestone 1 did not help, therefore this should have been thought through more properly to be more aligned with milestone 2. There were unforeseen circumstances, that there had to be changes and could not strictly follow what has been said in milestone 1. Overall, I am still pleased with the accomplishment in this milestone as it has given insight that developers should be well prepared for unforeseen changes and adaptation that is needed.

Upon researching, there was little articles and literature reviews on navigation mobile systems. It is probably due to the assumption that everyone is using google maps and heavily relies on it now. It is recommended to have further research in this area.

## Future directions

In the recommendations where a suggestion is to be made in the field of usage of navigation apps. Going with the assumption that the application produced in milestone 2 is fully running, with proper functionality and so forth. The next research step would be to identify the user and their usage of the application while driving. Questions are to arise such as, what distracts the driver most? Is the navigators voice on time, or delayed? How does the user feel with the Navigators voice? Are the icons too much? Is it still safe to use such an app while driving? etc. These questions and answers should benefit future UI UX and developers if they were ever to create another navigation application.

# Video timestamp

Video link: <https://www.youtube.com/watch?v=4UdBHZs0yos>

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| --- | --- |
| **Timestamp** | **Reference** |
| 3:57 | Meta. (n.d.). *Instagram*. Retrieved from <https://www.instagram.com/> |
| 4:30 | Komarovskaya, E. (n.d.). *Mediatation App "MOON"*. Retrieved from <https://www.behance.net/gallery/154193795/Meditation-app-MOON?tracking_source=search_projects%7Cmobile+ui+figma> |
| 5:45 | Locofy. (n.d.). Retrieved from <https://www.locofy.ai/> |
| 7:10 | Figma. (n.d.). Retrieved from <https://www.figma.com/> |
| 12:28 | Meta. (n.d.). *React Native*. Retrieved from <https://reactnative.dev/> |

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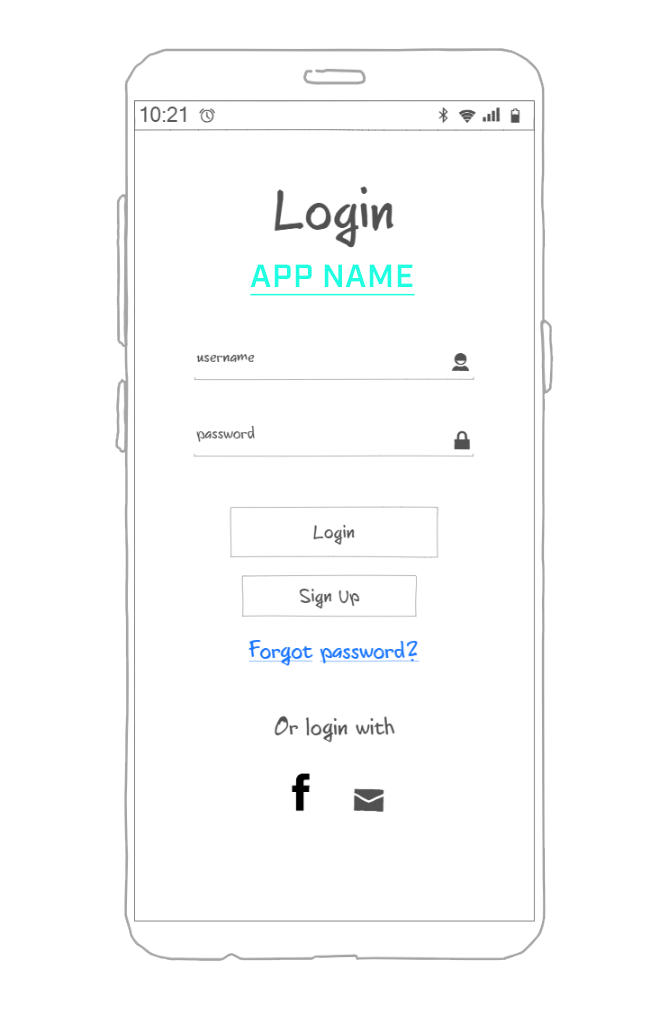
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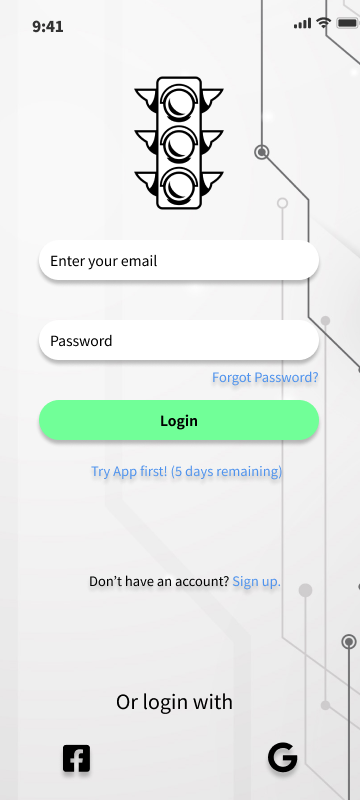
Meta. (n.d.). *Instagram*. Retrieved from https://www.instagram.com/

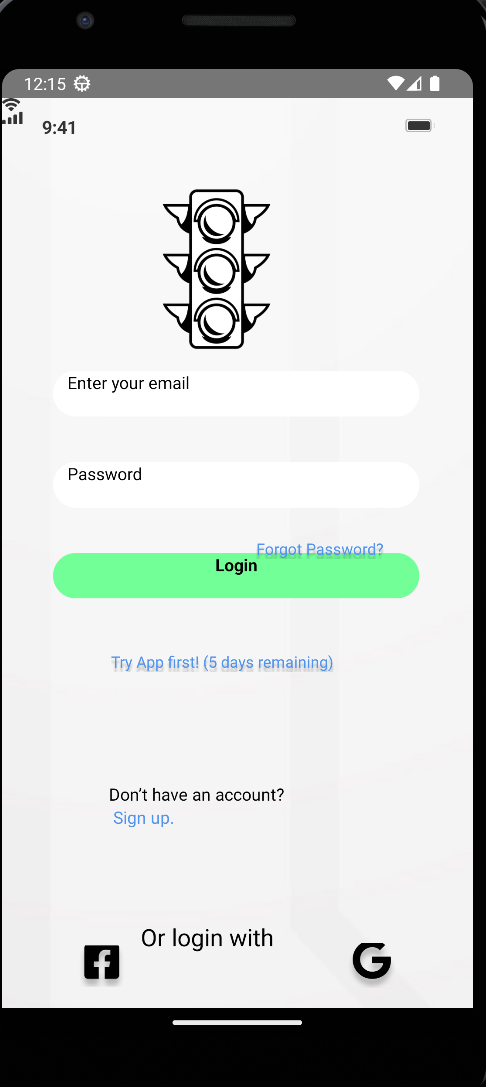
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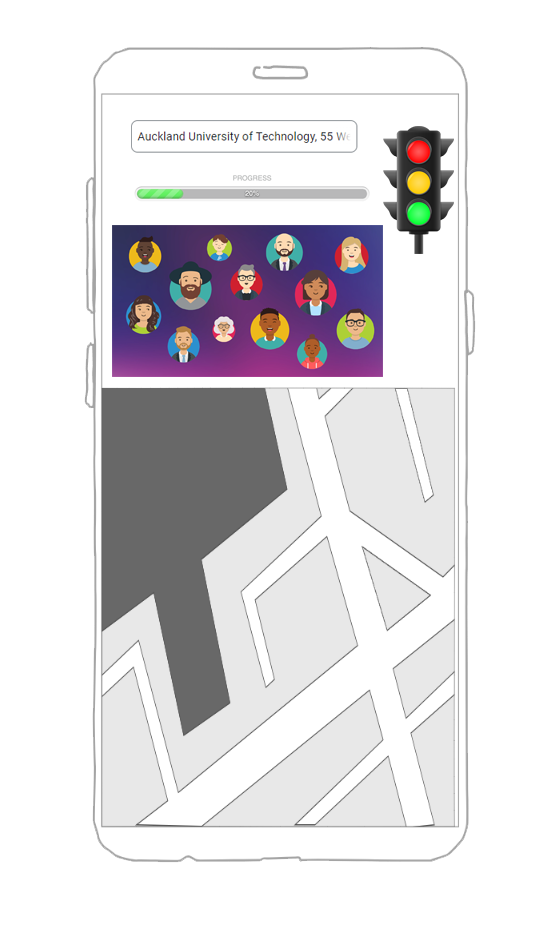
Wen, G. (2021). Research on Color Design Principles of UI Interface of Mobile Applications Based on Vision. *IEEE International Conference on Advances in Electrical Engineering and Computer Applications (AEECA)*, 1-4.

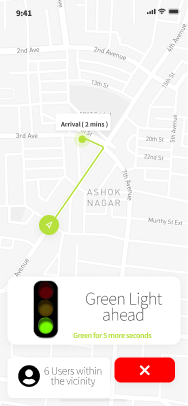
# Appendix









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