AKDENIZ UNIVERSITY ENGINEERING FACULTY DEPARTMENT OF COMPUTER ENGINEERING SENIOR PROJECT FINAL REPORT

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Contents

1. Problem Definition

-Why do we need to create such an application?

First of all, we aim to provide an environment to accelerate this solution process, which is already progressing, rather than bringing a solution to a problem. Pages created by volunteers in many animal adoption organizations, shelters and many social networking platforms in Turkey are a part of this process. Our aim is togather this branched structure under one roof by providing them with more favorable conditions.

-So what will it change if we gather these communities under one roof?

First of all, we will have established a larger communication network. We will have a broader coverage network as a reactive community rather than a dispersed multi-community. While shared ads were seen by thousands of people in the group, they can now reach millions thanks to a single network. In this way, the voice of animals in need will be louder.

2. Challenges

1- User-Friendly Design

Due to the theme of the design, it is important that it creates a feeling of love in you. Since our subject and theme are creatures in need of help, we need to create a softer and warmer theme instead of an aggressive theme and keep the user in the application in this way. After choosing colors based on pre-made logos and design examples, we made the colors a little lighter and paid attention to highlighting the visuals of the application contents.

2- Ease of use

The simplicity of use of the application is an important factor for the age range, and it enables users to be more active and faster without any difficulty in the application. The benefit of this is that if a user performs a transaction without difficulty, he remains more connected to that platform. For example, it is easier to share from the Instagram application that is already on the phone. On the contrary, people make these posts on their blog pages before. Now, in addition toInstagram, we offer a platform where they can follow this whole process. With the button positions, navigation bar and return system in the design, theuser will be abletouse it very comfortably and will be very comfortable in sharing and researching.

3- Application performance

Application performance is a two-sided factor. While we are happy with the user experience, it is important that the system works fast so that the processes carried out on the background can proceed without any damage and problems. By addressing all these, it is the first priority for the application to be able to address all systems on the platform to be prepared and at the same time, this process can proceed smoothly.

4-Data management and security

Data management is very important in terms of application performance and data security. The area you will use as my system, the api etc. Factors you will use for this plays a big factor. The system we will use here is highly supported by the environment in which we developed the application, and the area we use as a data store has been made very secure and it continues to work on it. The harmony between these two systems facilitates data management within the application and increases performance.

5- Compatibility withdifferent OS versions

Today, many mobile development environments support more than one OS. Flutter is one of them, but it is a highly preferred and supported development environment in this field. Of course, as in everyfield, there are deficiencies or areas where flutter falls behind. However, for the application we will develop, it can provide an environment that will run smoothly on most operating systems. That's why we decided to develop the project in flutter environment.

6- Choosing development technology

Firebase is our web service. It is a Google-backed application development software that enables developers to develop iOS, Android and Web apps. Firebase provides tools for tracking analytics, reporting and fixing app crashes, creating marketing and product experiment. It use stream so we can pull datas instant. It also provides that if we have no internet connection, pulled datas are stored in cache so we can stil see them. A/B testing, 10k authentication per month, stored data until 1GiB total and real-time database can be used for free by Google Firebase.

We have also use flutter as language. It is an open-source UI software development kit created by Google. It is used to develop cross platform applications for Android, iOS, Linux, Mac, Windows, Google Fuchsia, and the web from a single codebase

7- Choosing the right software architecture pattern

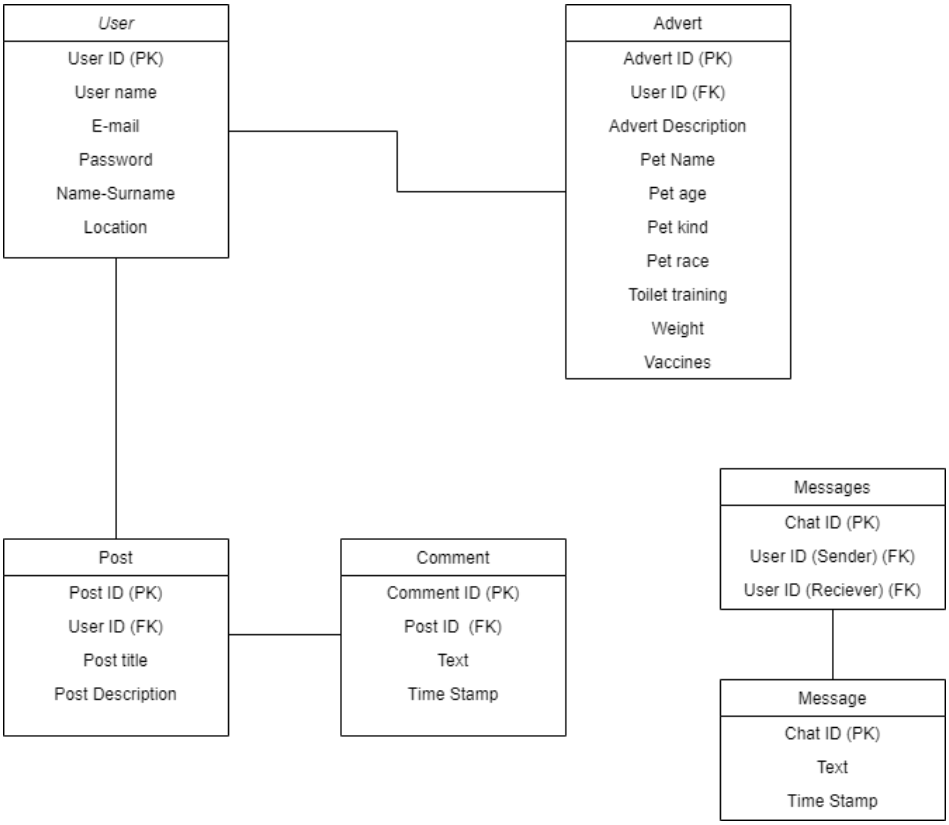
We use MVVM with repository architecture. This architecture provides a proper state management. Also, If we want to change our web service or write our backend, it can implemented on app easily.

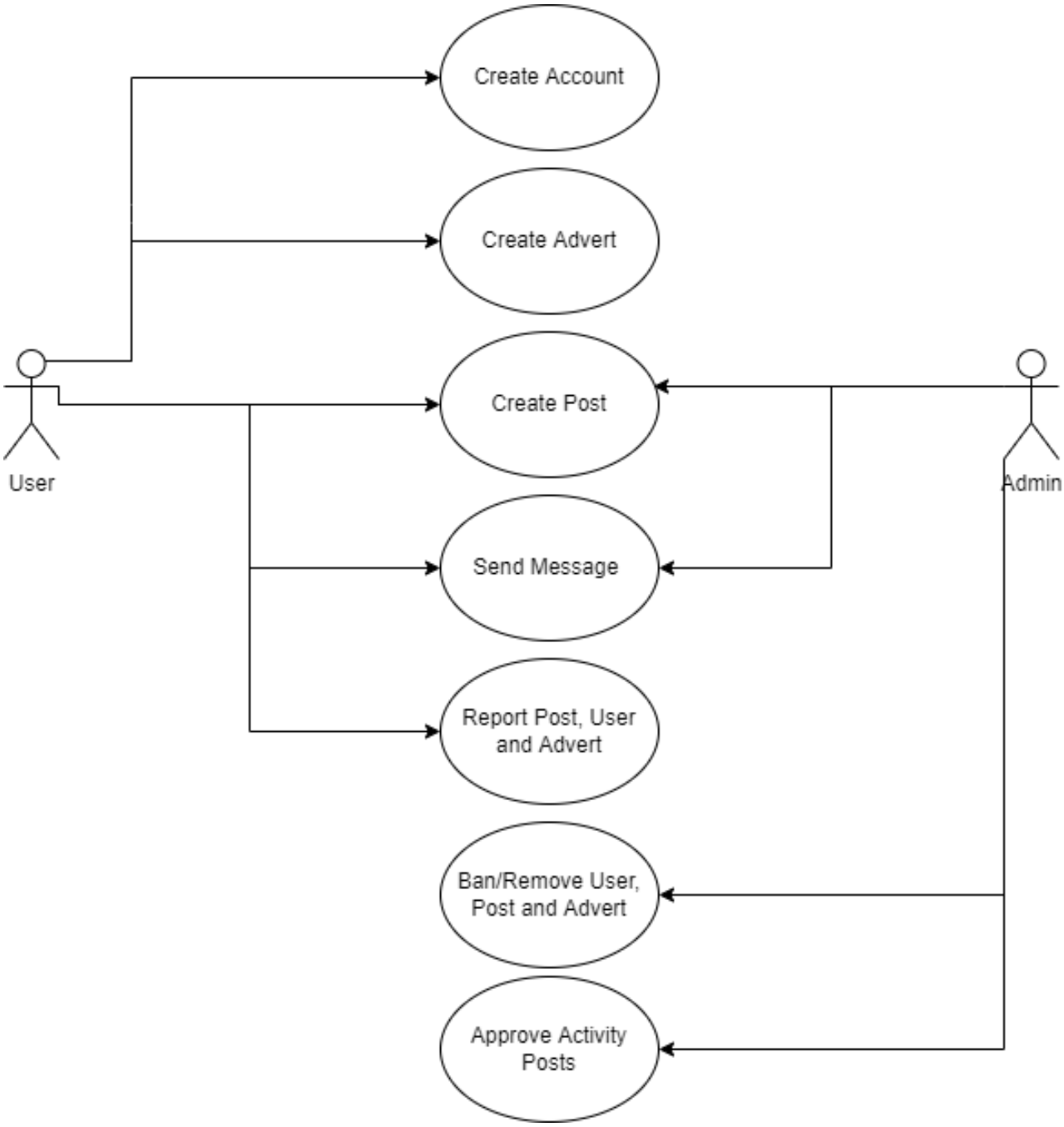
3.Our Contribution

We already mentioned this situation in general in the problem part, actually our contribution is a project based on the integration of disjointed masses. Our aim is to accelerate the process and as the process accelerates, the number of things people can do will increase and we will be the voice of souls who cannot speak in this way. This project is a volunteer based project.

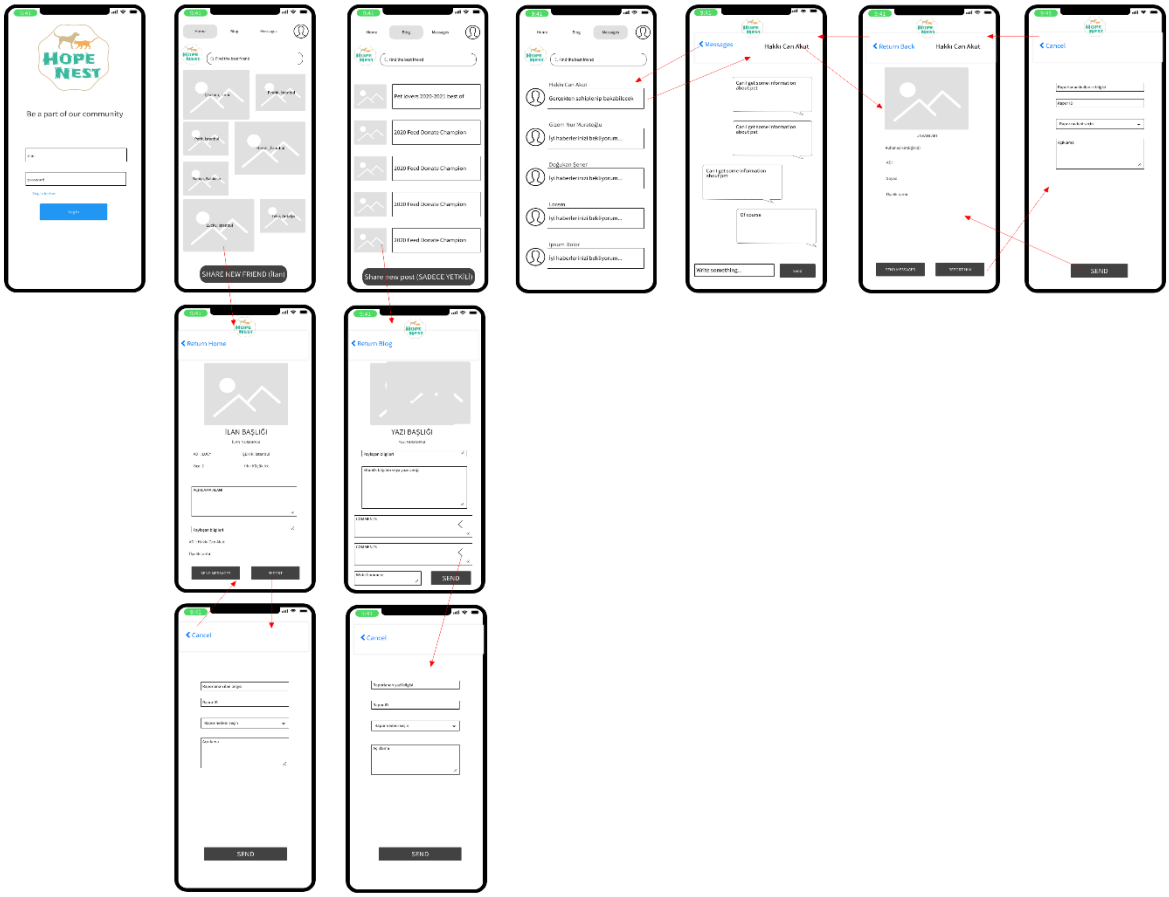
4. Technical Details

4.1 UML Diagrams




Create Account
Create Advert
Create Post
Send Message
Report Post, User and Advert
Ban/Remove User, Post and Advert
Approve Activity Posts
User
Admin

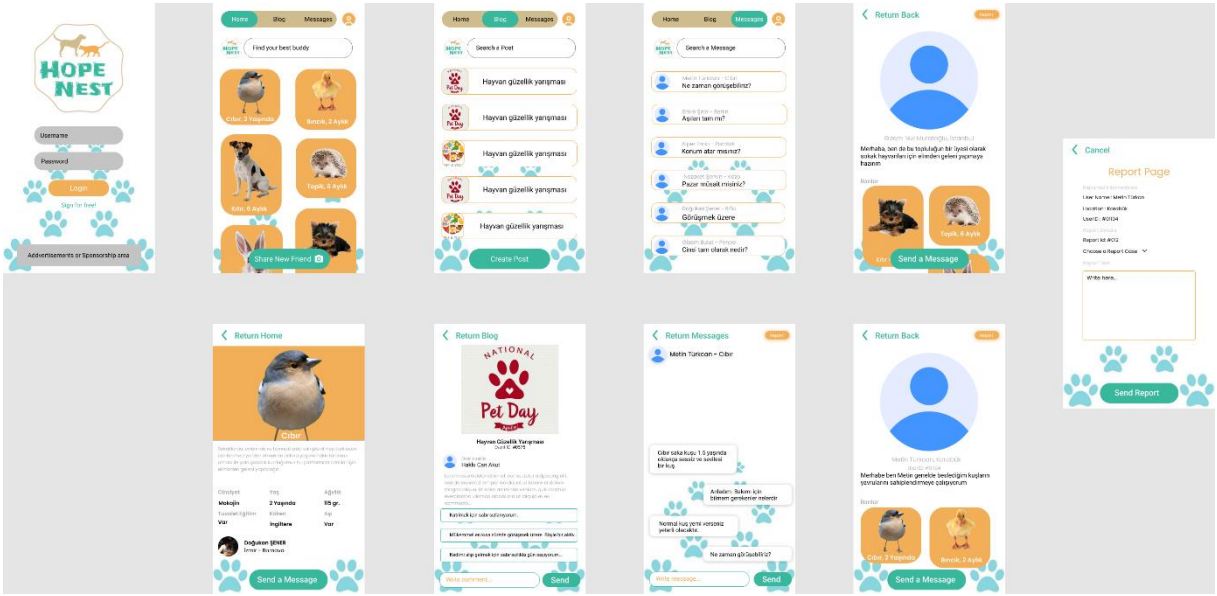
4.2 UI Design Techniques



UI phase 1:

We started with the drawing of the moment components and general structure of the design. At this stage, positions and relationships are more important to us than colors and shapes. We have worked on basic elements such as what will be on a page, which elements and structures will be used (button, box, navigation, img), and content areas and redirects on the pages. We continued this work online and we did it on mockflow.

We did not need reference applications much during the study. We have prepared a suitable ground according to the structure we have in mind and what we may need, and we have prepared a suitable environment for the physical internal structure of the application.



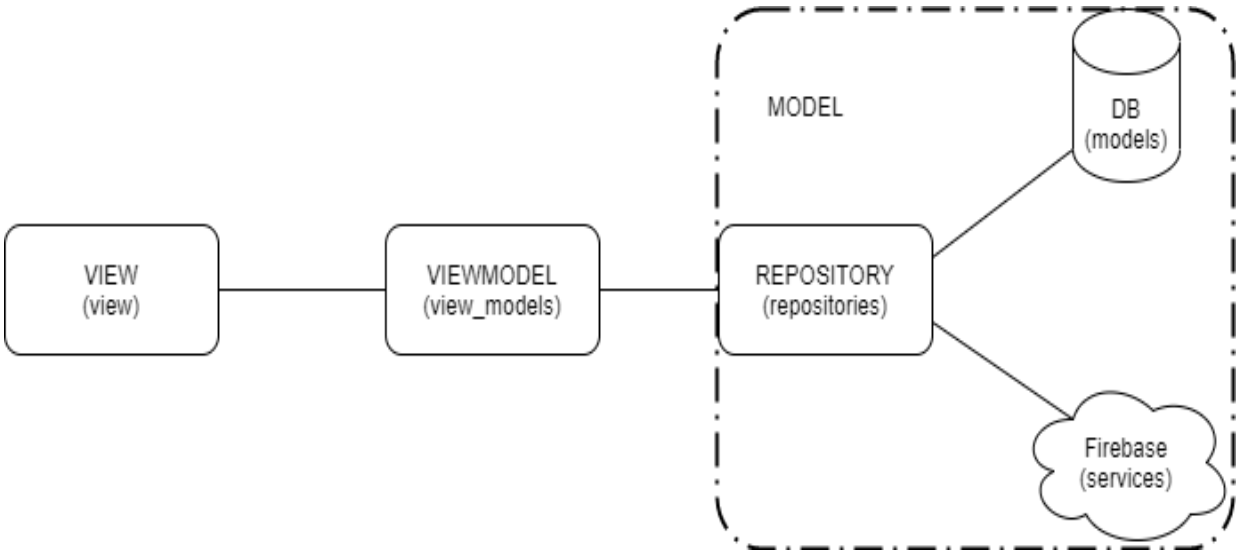
UI phase 2:

At this stage, we needed to make the application more realistic and attractive. We needed a simple, stylish and friendly design that would keep the user in the application and not tire the eyes while using it.

For this, we first looked at the application web pages with color tones and similar content, then we distributed the colors we will use in the design, and we did sizing and scaling operations, now we had an active design.

4.3 Software Achitecture

Our architecture is MVVM with repository.We use MVVM because it reduces complexity of the code, since we separete view, state management and our methods.The reason for adding the repository is easiness when we change our web service.



View: Manages user interfaces, if AppState(application state) is BUSY shows circular progress indicator, If not then shows screens(Login page, Home page etc.)

View Model: Manages AppState, if there is a call for back-end methods, (such as authentication methods etc.) it changes AppState to 'BUSY' state, when back-end method returns a response then changes AppState to 'IDLE'.

Repository: Controls which service will be used, with this if we decide to change web service or add new one it would be much more easier to implement.

Service and Model: Does back-end requests and returns needed data.

5 Functional Requirements

ID: FR1

TITLE: Download mobile application

DESC: A user should be able to download the mobile application through either an application store or similar service on the mobile phone. The application should be free to download.

RAT: In order for a user to download the mobile application.

DEP: None

ID: FR3

TITLE: User registration- Mobile application

DESC: After the user download the app, they can register from sign in screen which is implemented as a button on login page. Button can directly move to sign in page.

RAT: In order for a user to register on the mobile application.

DEP: FR1

ID: FR4

TITLE: User (Admin) log-in - Mobile application

DESC: Given that a user has registered, then the user should be able to log in to the mobile application. The log-in information will be stored on the phone and in the future the user should be logged in automatically.

RAT: In order for a user to register on the mobile application.

DEP: FR1, FR3

ID: FR5

TITLE: Mobile application- Search

DESC: User can searc for advert or post on content pages also can use groups for specify the type of adverts or posts.

RAT: In order for a user to search for a adver or a post.

DEP: FR4

ID: FR6

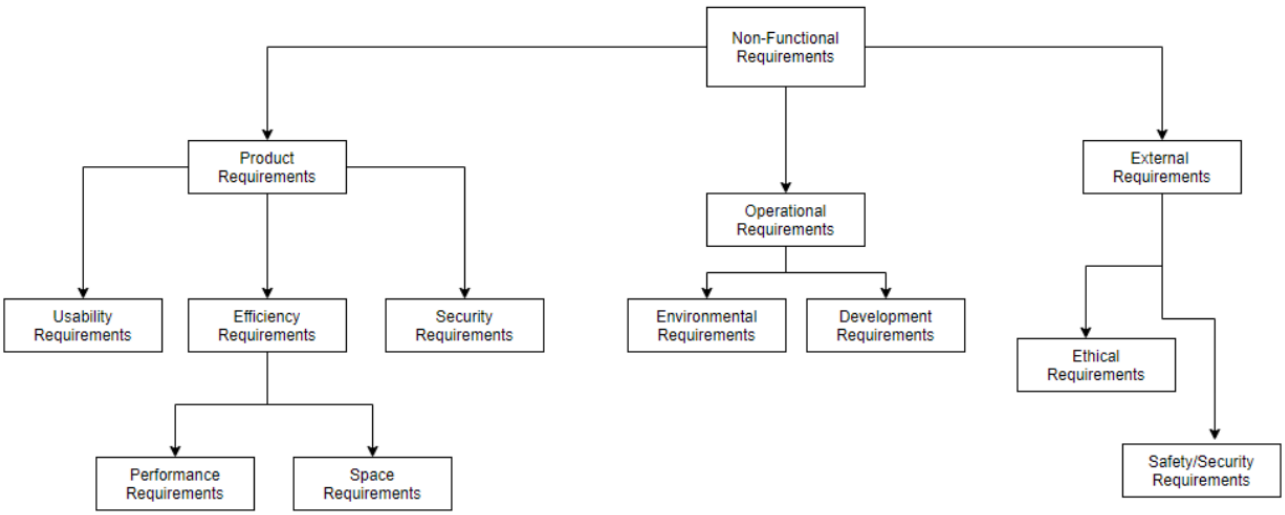
TITLE: Mobile application - Profile page

DESC: On the mobile application, a user should have a profile page. On the profile page a user can edit his/her information, which includes the password, e-mail address and phone number.

RAT: In order for a user to have a profile page on the mobile application.

DEP: FR1

6 Non-Functional System Requirements:



6.1 Usability Requirements

You can easily select product and add your basket which is shown before UI diagrams. Also you can see information about your order from another page on the app.

6.2 Space Requirements

You must download the app your mobile device. So you have give a space on your storage of your mobile phone to use the services.

6.3 Performance Requirements

You need internet connection for the app. It must be upper bound of the standart to reload the map actively. Also you can use the quality on the product search page.

6.4 Security Requirements

We have user login use system and every user have own user information. Your order is related directly you so our system take your order and give a non-busy driver to make that deliver as much us quick. Also all IDs are encrypted on the system so no one can reach or create process on your ID.

6.5 Ethical-Safety/Securit Requirements

We use your location during the delivery state after complete the order. The system can not use your location anymore. So, deliver can not reach you location on the map anymore. We beyond the rules split the system with user informations.

7.Other Requirements Creating on feature.

- Security Updates new systems SMS verification,

- More usefull driver create system for application who needs to be driver on this company can send message to system create an application being a diver.

- More safe and quick decline system for oders. Users can take repayment fast when they decline deliver