Software Design Specification
for
Picstant

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Supervisor
Sir Ahsan Shah

Group Members
Ismail Ahmed (2017167)
Syed Haider Abbas Kazmi (2017456)
Usman Farooq (2017492)
Wajahat Ahsen (2017496)

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1. INTRODUCTION

1.1. PURPOSE

The purpose of this document is to give a detailed description of the requirements of the "Picstant" software which is going to be developed for two operating systems i.e. Android and iOS in a native platform called Flutter. It will illustrate the purpose and complete declaration for the development of the system. It will also explain system constraints, interface, and interactions with other external applications. This document is primarily intended to be proposed to a customer for its approval and a reference for developing the first version of the system for the potential developers.

1.2. PRODUCT SCOPE

"Picstant" is a social smartphone application which helps people to connect with others in order to share their feelings and their thought to the world. In this, people share media like pictures and textual statuses to share what is on their mind. They have an option to like and comment on friend's pictures. People can communicate with each other through pictures and videos. They can also share others' posts like pics and videos. In order to use this app effectively, one has to follow someone to whom he wants to get connected with. The person can be unfollowed by pressing the unfollow button. This app has so many features that are very helpful for the users. For the account security of users, we have a public and private mode, this is helpful in securing one's personal pictures from the public. If someone has a private account, he also has to accept the "follow request" that someone sends in order to get connected.

Table 1: Terms used in this document and their description

Name	Description
Picstant	The concerned mobile application, under development.
iOS	Operating system of apple mobile devices.
Android	Main operating system used by many mobile companies. Developed by Google.
Firestore Database	A cloud-based database. Can be used as an API and works as the main database storage for Picstant.
Firebase	Short for Firestore database.
UI	User Interface

1.3. OVERVIEW

"Picstant" is a social smartphone application which helps people to connect with others in order to share their feelings and their thought to the world. This application is designed for almost everyone in this era who is interested in socializing via a digital platform like none other. In this, people share media like pictures and textual statuses to share what is on their mind. They have an option to like and comment on friend's pictures. This mobile app would enable users to easily obtain relevant information about their friends and family, the people they are interested in e.g. celebrities (what they do, who they are friends with and various other pages that they follow along with other activities). Any person can be unfollowed by pressing the unfollow button. For the account security of users, we have a public and private mode, this is helpful in securing one's personal pictures from the public. If someone has a private account, he also has to accept the "follow request" that someone sends in order to get connected. This application will able to run on both iOS and Android smartphones. Also, it will be an open-source project and it has a very active developer team to support it and provide feedback to users.

2. THE OVERALL DESCRIPTION

The description of the proposed system is given below. This description defines the product in different directions.

2.1. PRODUCT PERSPECTIVE

This application is designed for almost everyone in this era who is interested in socializing via a digital platform like none other. This mobile app would enable users to easily obtain relevant information about their friends and family, the people they are interested in e.g. celebrities (what they do, who they are friends with, and various other pages that they follow along with other activities. The most common device to the people of this era i.e. mobile phones will be used to solve the above-stated problems. This application will able to run on both iOS and Android smartphones. Also, it will be an open-source project and it has a very active developer team to support it and provide feedback to users.

3. WORK BREAKDOWN STRUCTURE

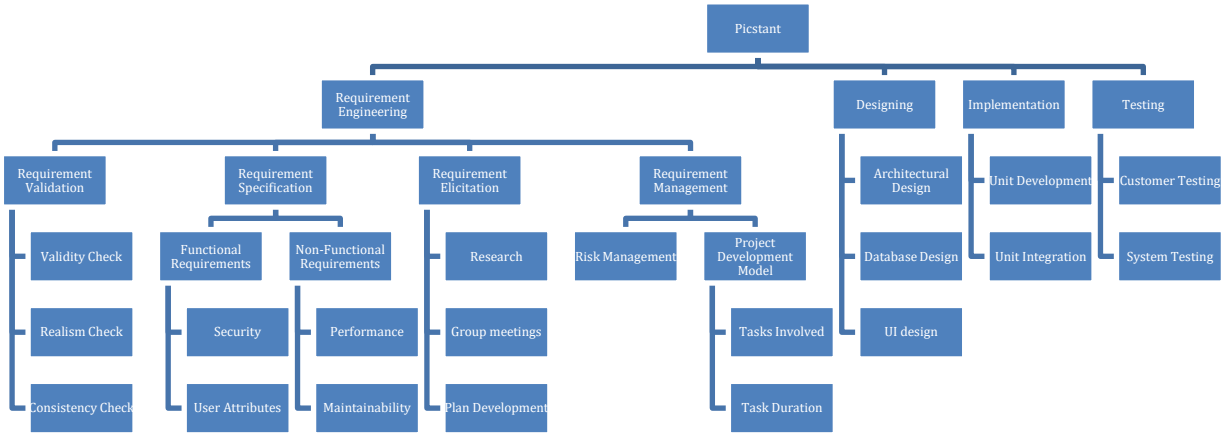


Figure 1 Work Breakdown Structure

This is the work breakdown structure of the development process of Picstant app. The approach in this project was a combination of both agile and plan driven. For the plan driven part, there is extensive documentation but on the other hand the coding was being done in parallel, representing the agile approach. Hence, it would be right to classify this as a hybrid approach.

4. Design

4.1 LAYERED ARCHITECTURAL DESIGN

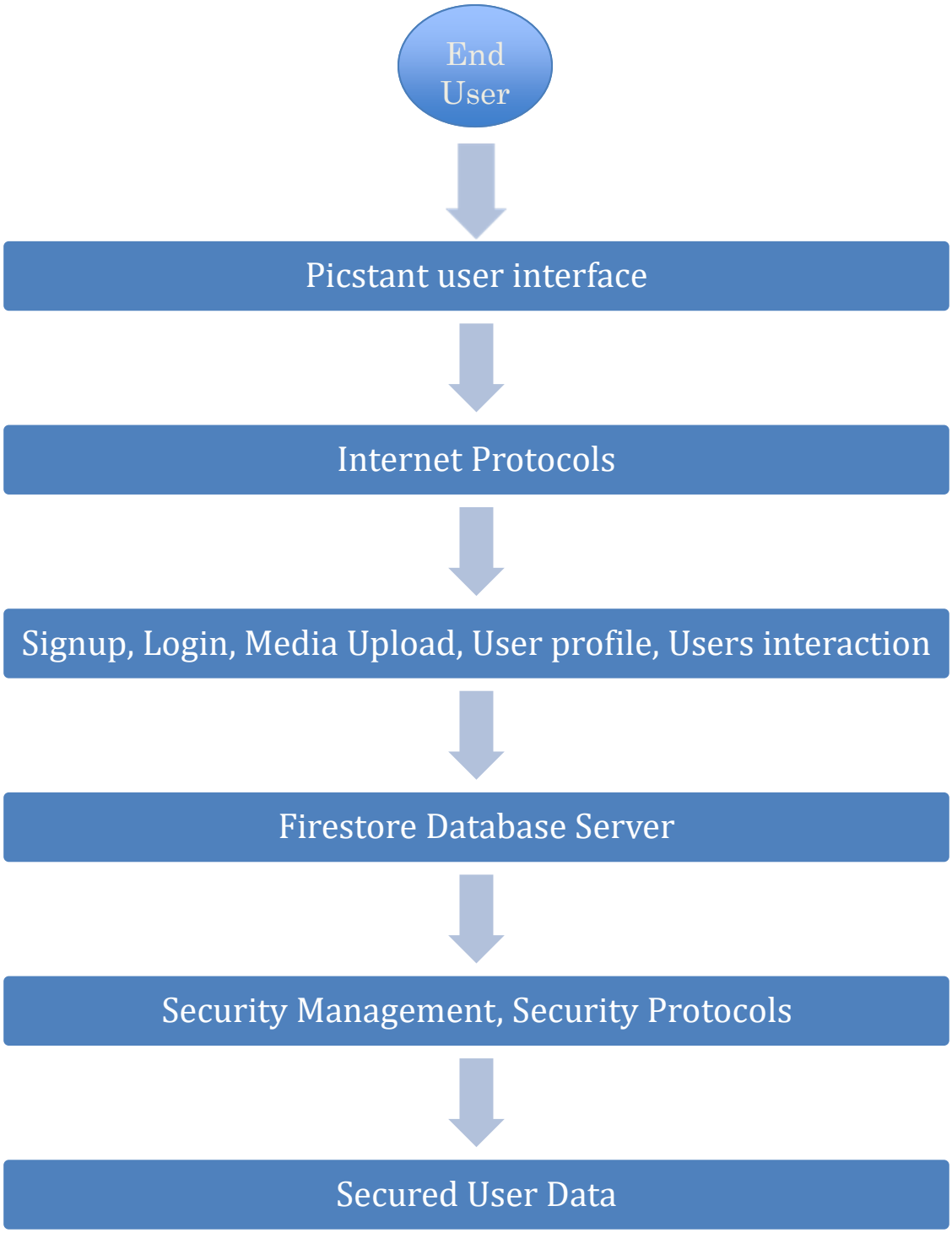


Figure 2 Layered Architecture Design

4.2. Why we choose Layered Architecture Design?

As *Picstant* is a social media app and is scalable to have a large number of users, thus it becomes necessary to provide security. That is why layered architecture is used for it. This ensures security and also enables a sense of reliability in potential users. From the business perspective, since the user data would be secure, people would feel more comfortable to join our social network and share their data (pictures) on it. By cashing this feature we can attract more users and make *Picstant* a successful social network.

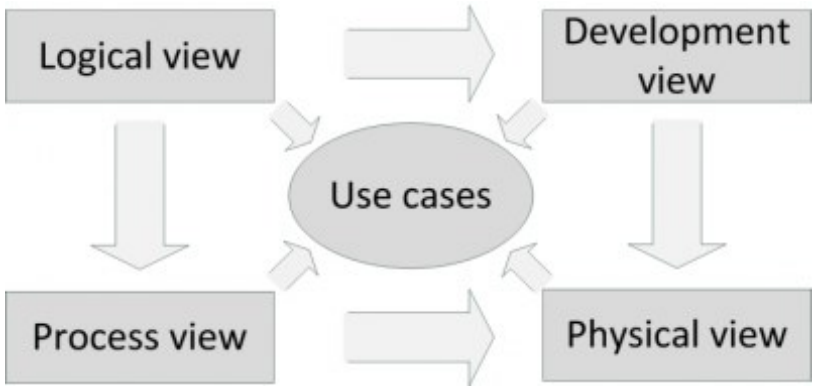
4.3. MODULE IDENTIFICATION

The identified modules of Picstant are written below:

- Create an account
- Home
- Posts
- Profile
- Activity Log
- Firebase

5. 4+1 ARCHITECTURE VIEW MODEL

In this section, the architecture using the views defined in the "4+1" model are drawn.



4+1 Architecture View

5.1. Use Case View

This is a list of use-cases that represent major functionality of the final system:

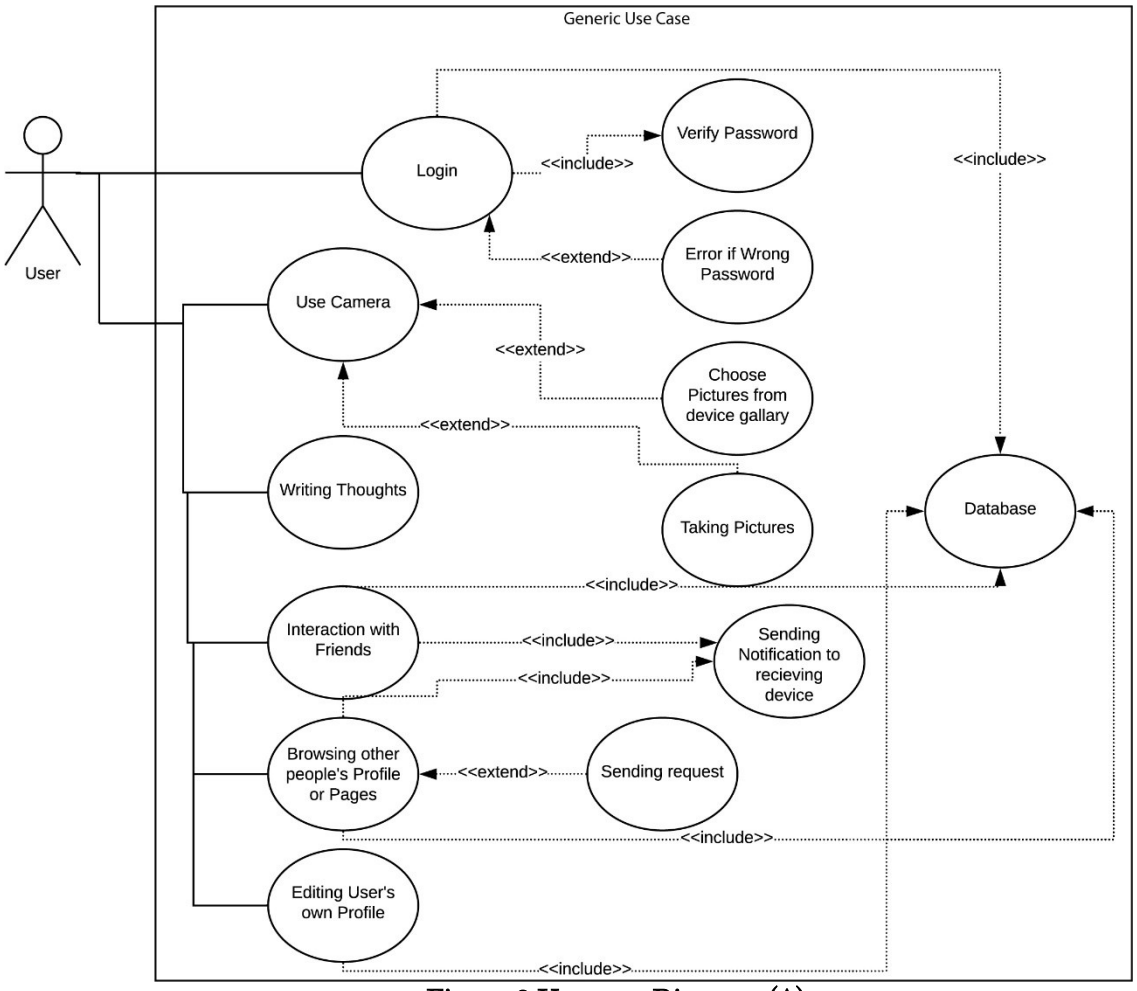


Figure 3 Use case Diagram (A)

This use case diagram represents the use case of how a user will use the app and what possibilities he/she will have. This diagram briefly describes the options that are available to the user along with the possible events. The next use case diagram shows the interaction among two users.

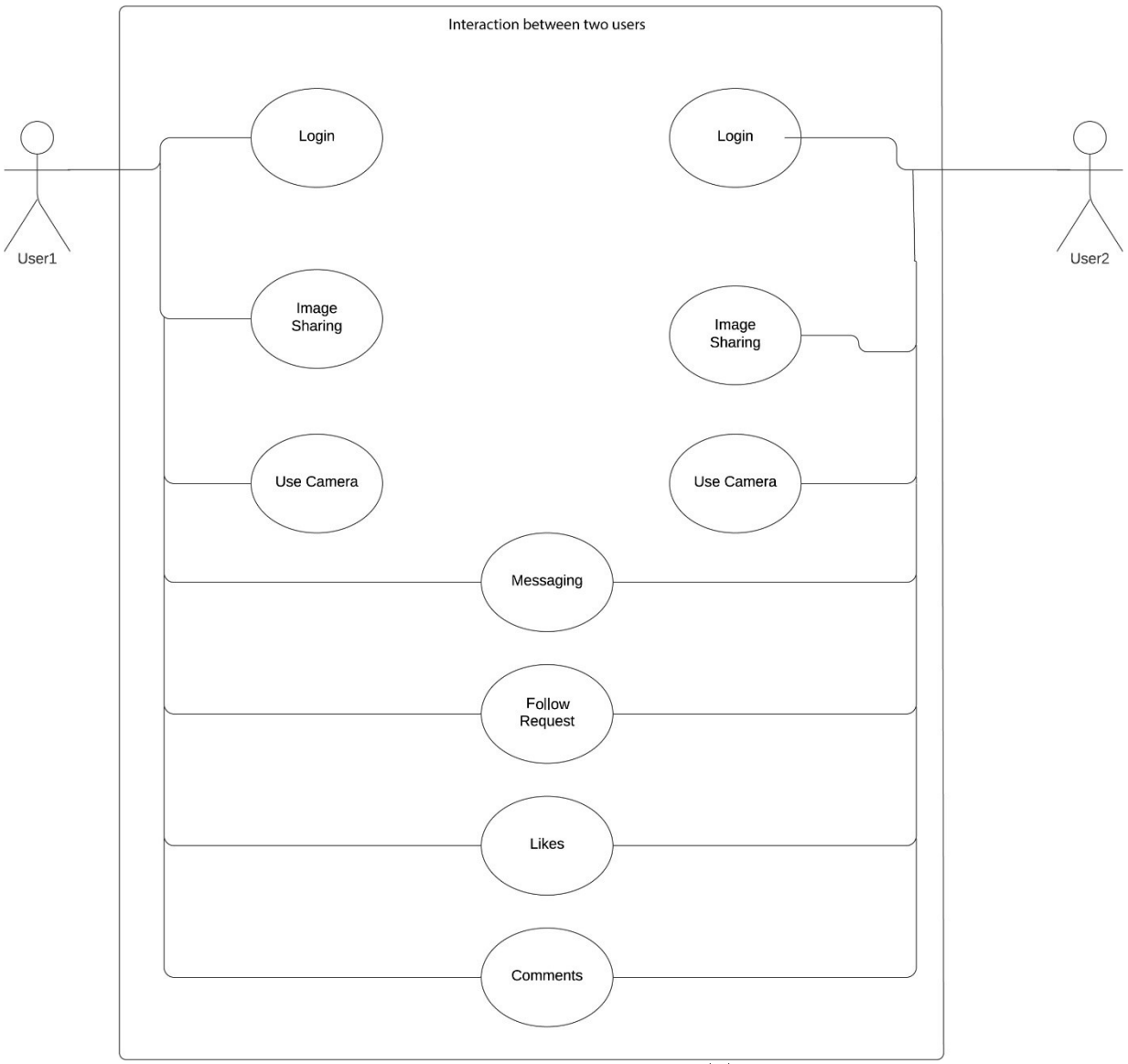


Figure 4 Use case Diagram (B)

This use case diagram shows the interaction among two users. Each user will log into his/her account and will use his/her own camera to share pictures on their own account. Moreover, they can also communicate with each other i.e. message, follow, like, and comment on each other's posts.

5.2. Logical View:

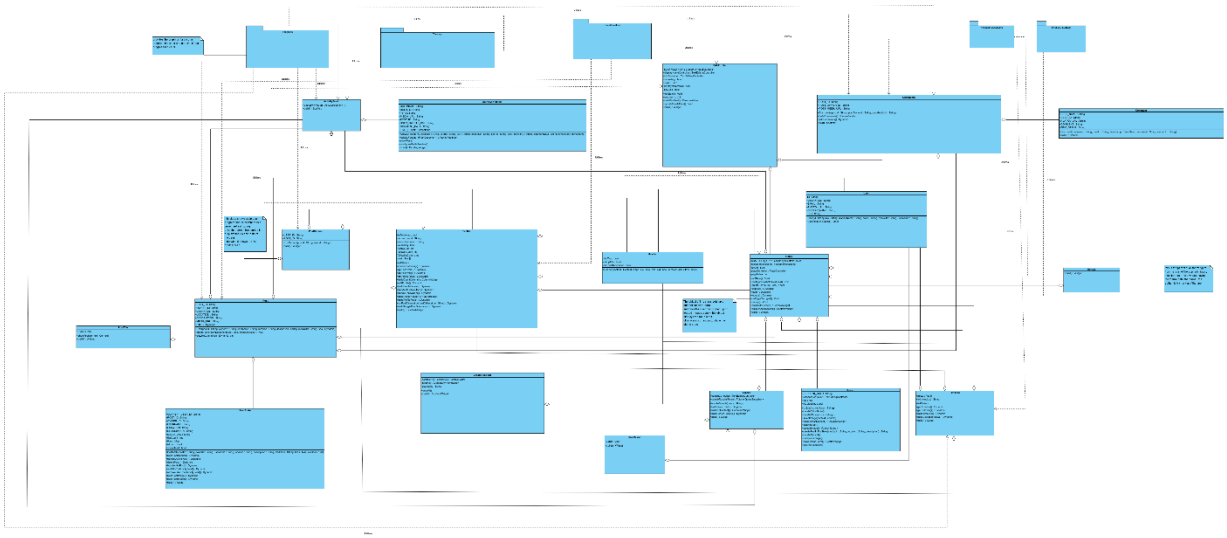


Figure 5 Class Diagram

This is the detailed class diagram. This shows the class structure of the app. The relation of different classes with the firebase module is also shown.
Kindly zoom in to have a better. A high-quality image can be sent separately if asked.

5.3. Development View

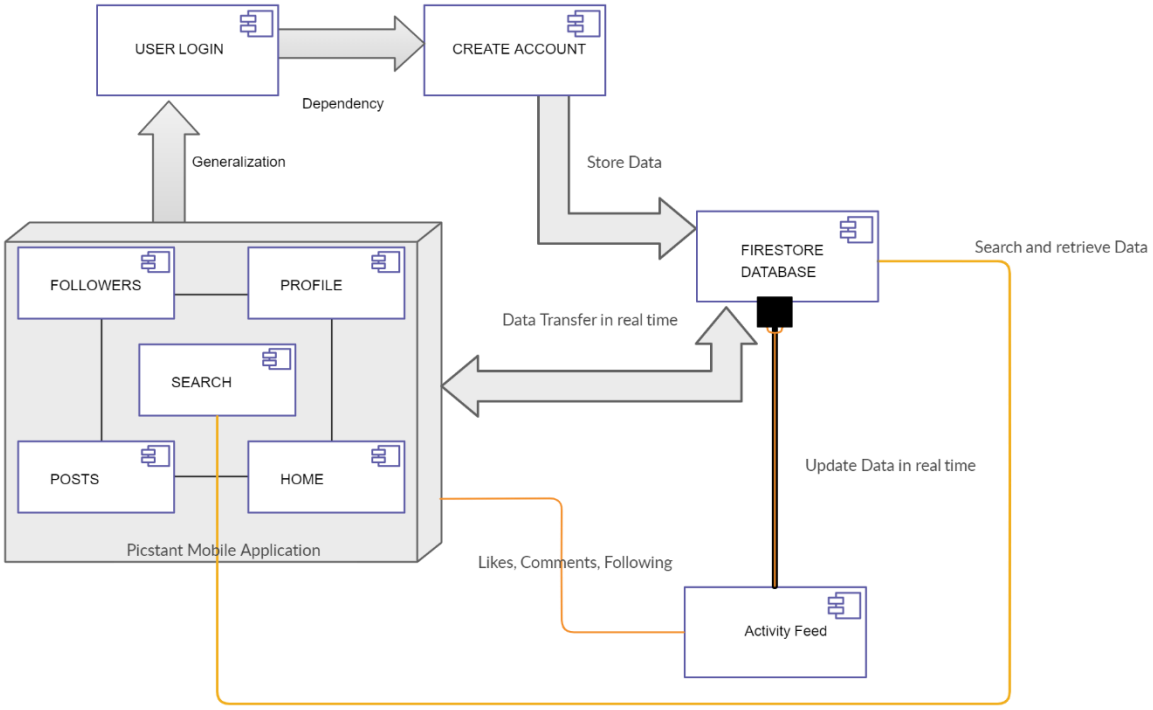


Figure 6 Component Diagram

This is the deployment view represented by the component diagram. It shows different components and their correspondence with each other. The arrows represent the flow of data/events. Since the data is transferred between the database and UI in both directions thus the double-sided arrows are used to represent the two-way flow of the data.

5.4. Process View

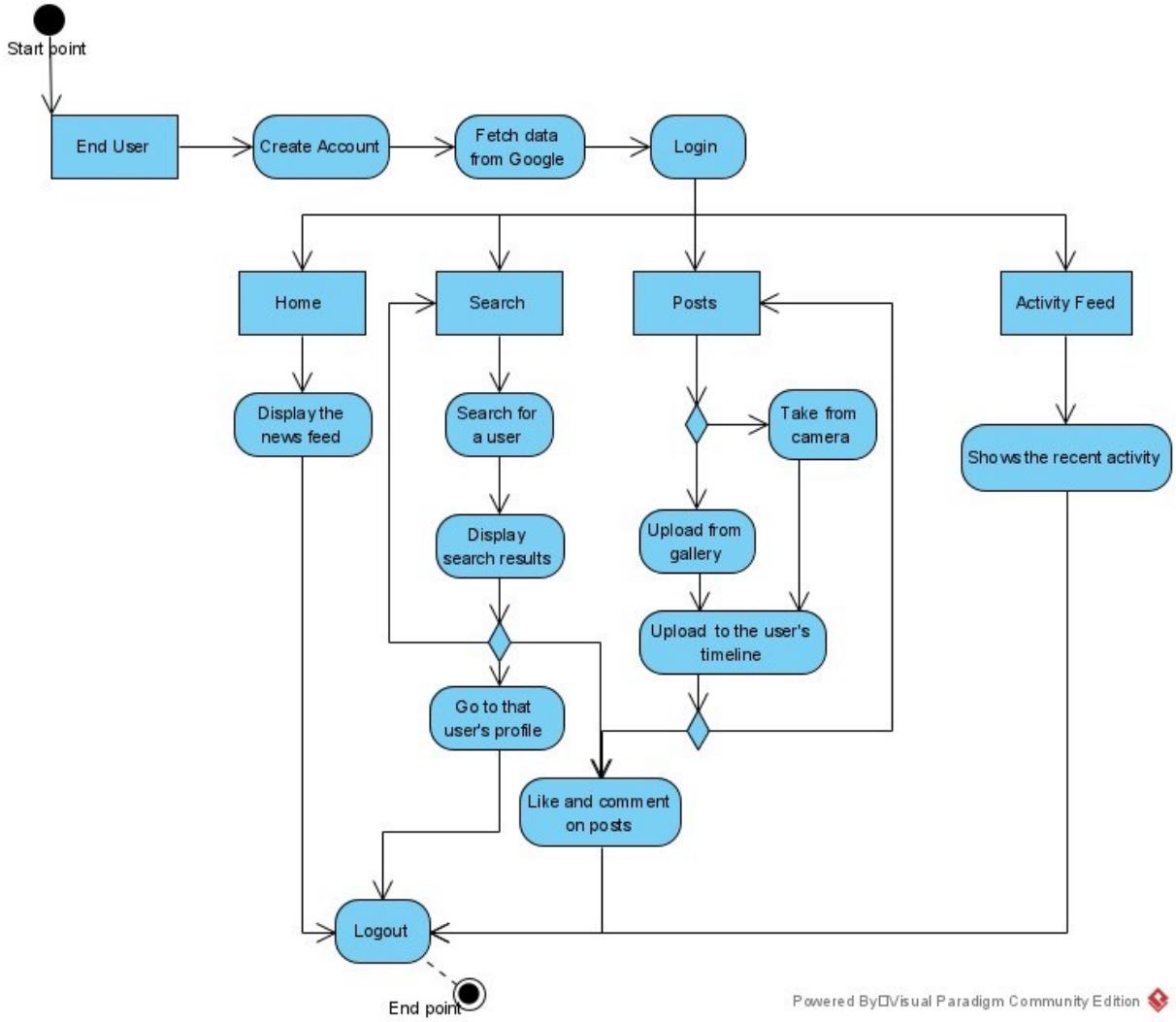


Figure 7 Activity Diagram

This is the activity diagram that shows the process of logging in and performing the basic tasks and then logging out of the app. To make it simple and understandable, the process of only a single user is shown.

5.5. Physical View

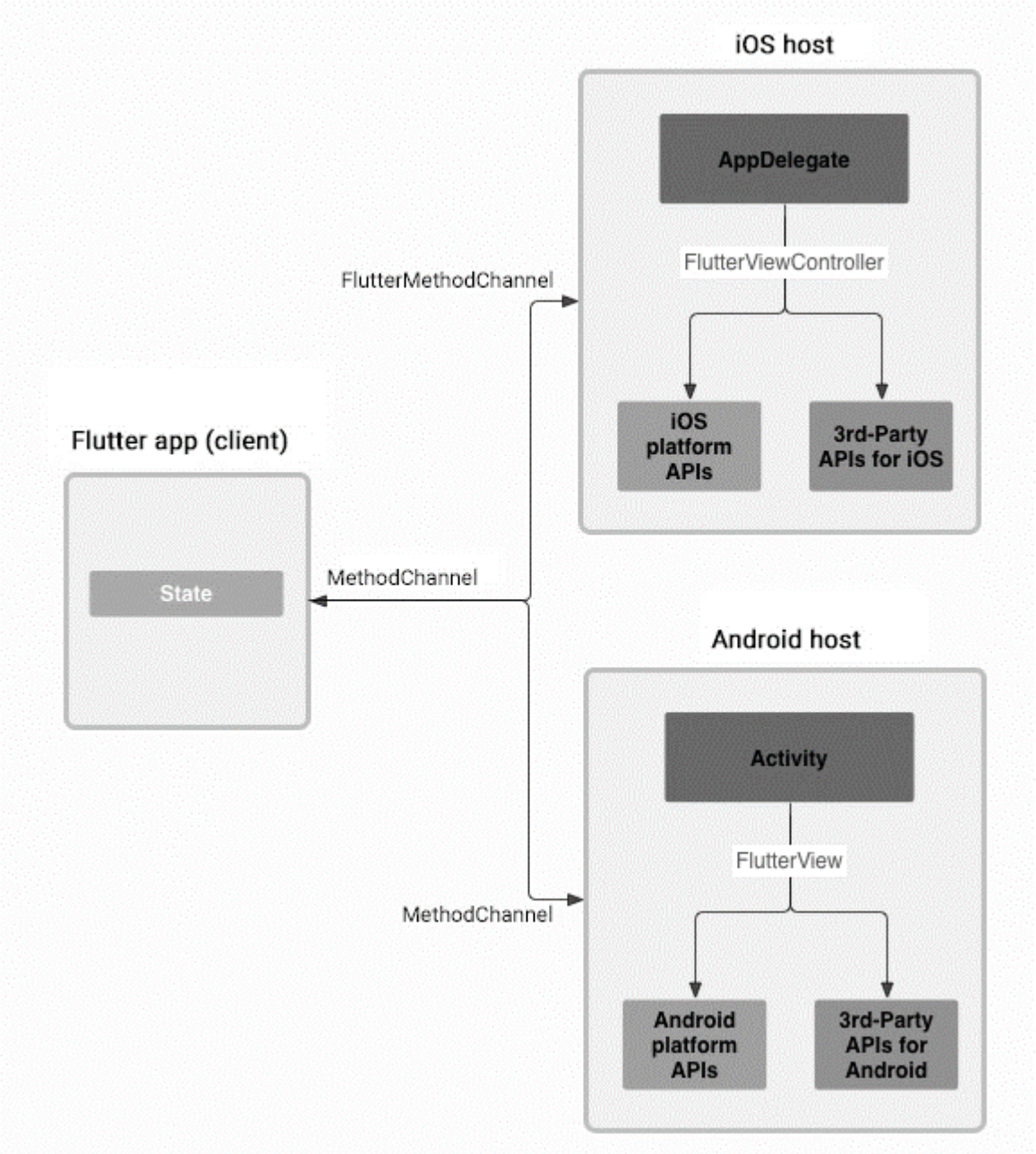


Figure 8 Deployment Diagram

Since Picstant is developed using flutter, it can be deployed for both android and iOS devices hence it has separate channels for iOS and Android deployment. Although flutter allows cross-platform development, yet it ensures performance by converting the dart code into machine language. This allows the app to show smooth performance on both android and iOS devices.

5.6. User Interface Design

The following are some screenshots of the actual user interface of Picstant.

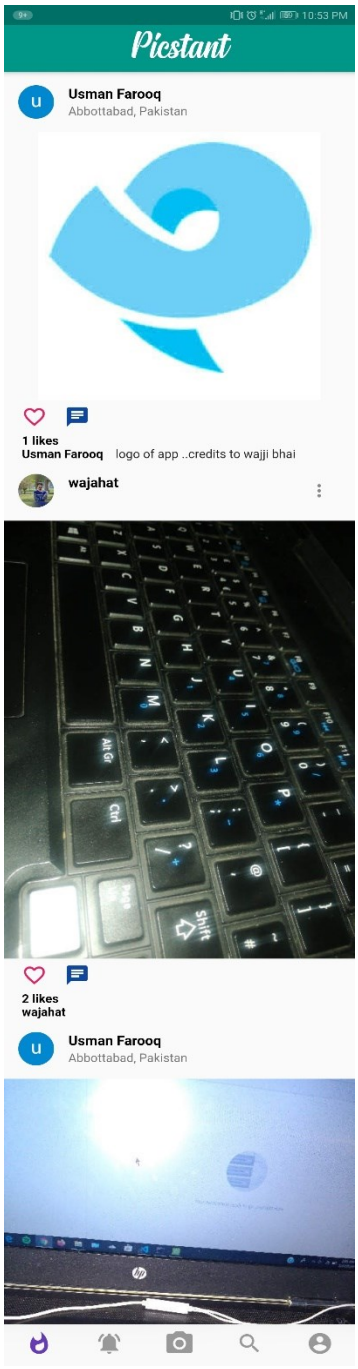


Figure 9 News Feed UI

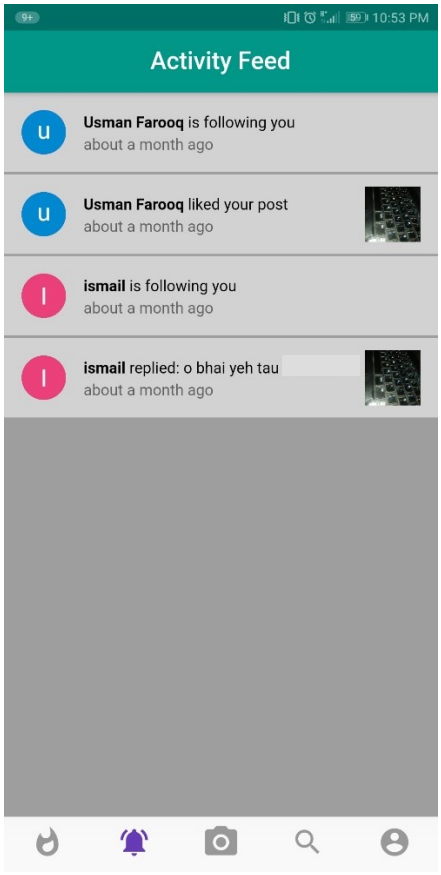


Figure 10 Activity Feed UI

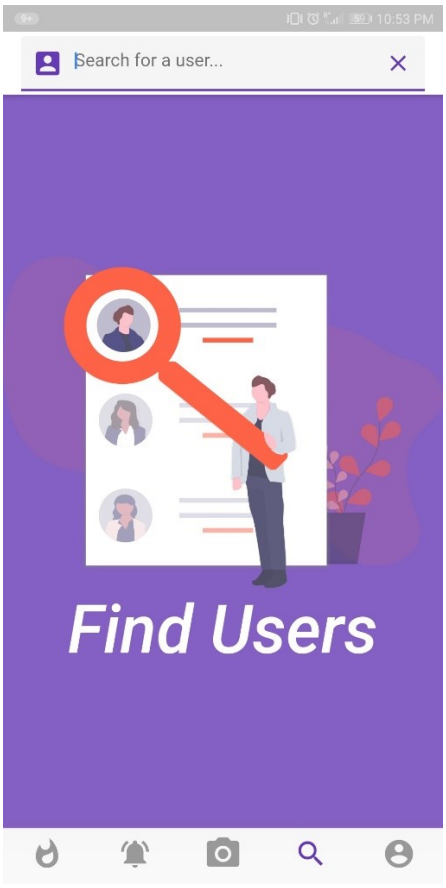


Figure 11 Search Section UI

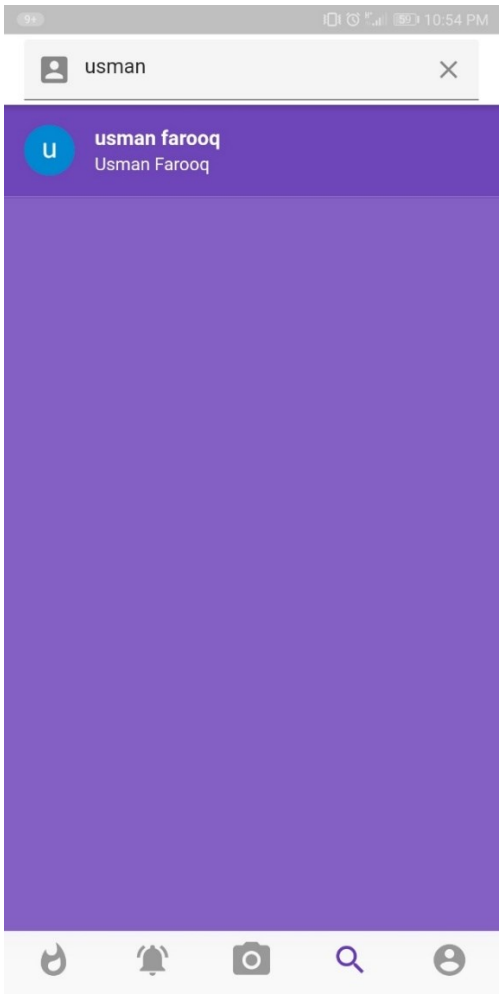


Figure 12 Search Results UI

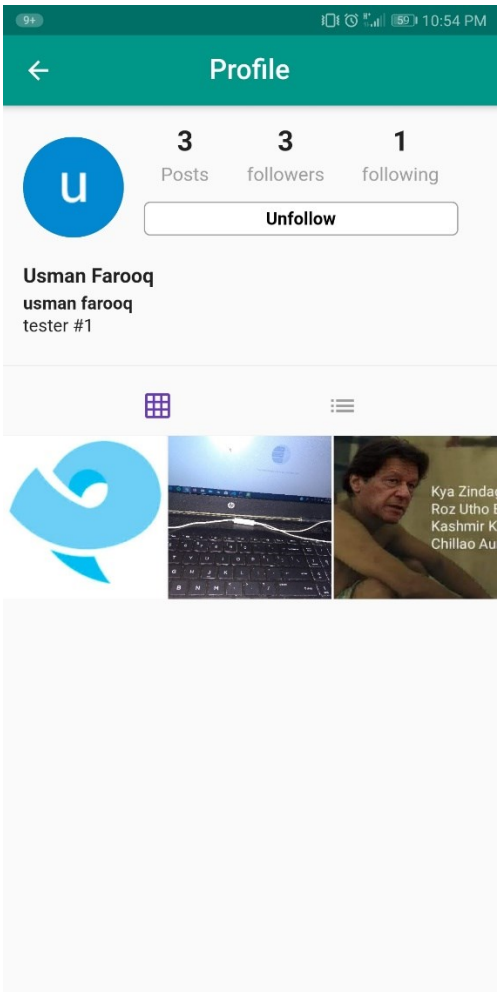


Figure 13 User Profile Section UI

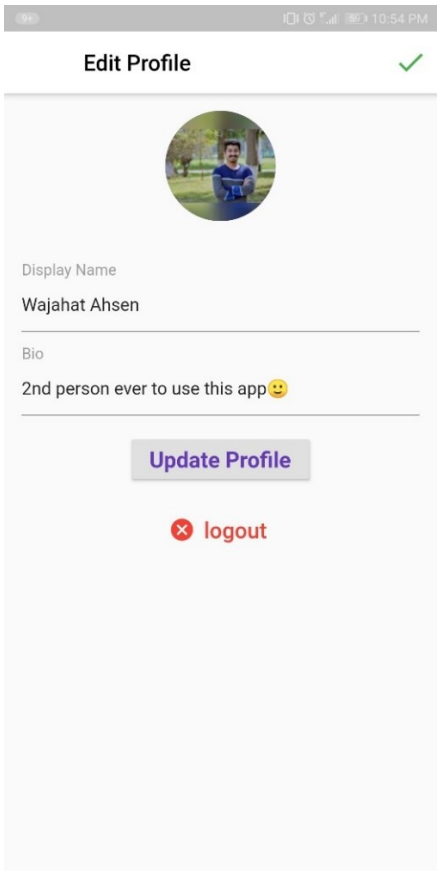


Figure 14 Edit Profile Section UI

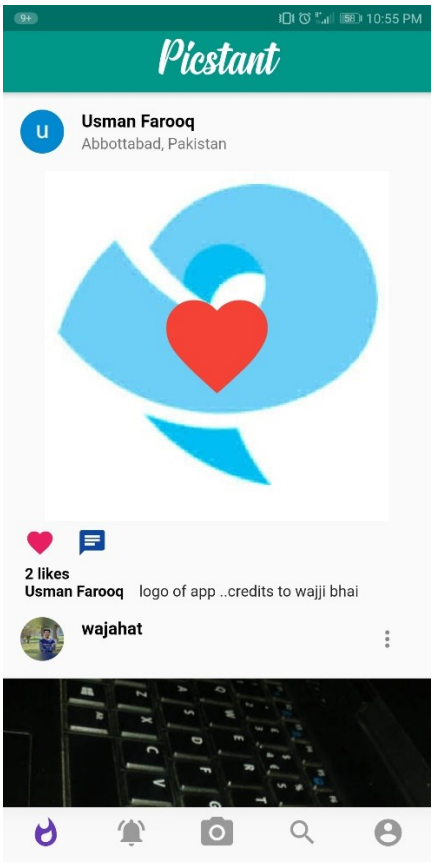


Figure 15 Heart Animation by double tapping the picture