Software Engineering
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5abini

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Submitted in partial fulfillment of the requirements
of B.Sc. Degree in Computer science

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Certificate

It is hereby certified that the project titled <5abini>, Khaled Abulawi 1531904, Ahmad Alsoub 1837661, AL-Motasem Alamleh 1834683, in partial fulfillment of the award of the Degree of Bachelor <Software Engineering> embodies original work done by them under my supervision
Project Supervisor: Aladdin Hussein Baarah
Department of Software Engineering.

Acknowledgment

This project has given us an idea how companies may work and organize themselves. We had many hardships and challenges we had to go through, but the progress we made in a new language and workflow we never experienced made us proud. It's an experience we'll never forget.

We would like to thank Dr. Alaa Ba'arah for his guidance and gearing our ideas in a better direction. Sharing some of his wisdom with us proved nothing but beneficial for us.

We would also like to thank Dr. Bashar Al-Shboul and Dr.KHalid Al-Sarayreh for their assistance we needed them.
We wouldn't have made this app without your assistance, thank you all a lot for the support.

Abstract

As people who lived a big major of their lives using Social media apps, and us being aware that newer generations will do the same, we, throughout our experiences, came to appreciate things we didn't consider in our earlier days, Privacy.
Nowdays, almost all social media apps focus on public interactions and people knowing who you are, we've seen success in this trend of course, but we've also seen withdraw in actual human interactions or confrontation, because everyone knows who you are.
While discussing this subject, we came with the idea of an app that focuses on privacy, not because it hides your information, because it doesn't have it (the not so major ones at least). That's how 5abini was born.

Contents

1 Introduction

1.1 Background

5abini as an app (that works on Android and IOS alike) focuses on privacy as a social media app. The usage of the application will be mostly from users and moderates, users will be able to:

1. Browse posts by colleagues in the same facility
2. Comment on posts that interest them
3. Share interests, questions on the app directly to other people's feeds with posting a new post
4. Change apps looks if they choose to
5. Change facility if others interest them
6. Choose one of the default avatars
7. Write in both languages: Arabic and English

1.2 Problem statement

Most social media platform are geared toward talking to people you already, or at least know they have something in common with you. There isn't a platform that allows you to share something that's not common between people and still get reactions and have some interactive experiences, as most there is a program as far as we can tell that links the posts you see geographically, there's features in some apps, but at that point the time line is so bloated that there's isn't roam for your niches.

1.3 Objective

5abini is an app that was built while focusing on privacy and intention to gather people with no social fear or anxiety. To build an environment with confidence in

confidentiality that allows you to share what you love, care about, ask questions and help people who do so. 5abini is geared into anonymous interactions, that will remove fear of social criticism and anxiety, as who you are will never be unknown. Make friends, get knowledge and share yours!

2 literature review

2.1 Existing programs

2.1.1 Reddit

Reddit allows users to comment and posts as "anonymous" but they generally collect user information and their UI isn't organized nor user friendly. You can easily be tracked down by other users since you post history is visible and on what "Thread (Hashtags)" you frequently use.

2.1.2 Facebook

As the biggest social media giant, we take it as granted that our information is safe, well kept, and untraceable, but because of the scale of information Facebook has, when a leak happens, 600 Million account information leak, we're built fundamentally different than Facebook and similar applications, this allows for a security that's hard to get, as you know closing the door is the better than setting traps and letting intruders come in.

2.2 The effects on anxiety

The findings suggest that the cognitive and behavioral processes that characterize socially anxious face-to-face interaction are also evident in online communication. Suggestions are made for the clinical implications of such findings.[1]

2.3 Privacy and Confidentiality

Most of the social media sites have information that's required, like your birthday and email address. Identity thieves tend to gather their victims's personal information from the information available on the social media sites. They argue there is a persistent confusion between these two concepts and that privacy is an important but neglected ethical concept within human services. Many identity thieves tend to

hack their victims email accounts by simply using the personal information available on social media profile.[2]

3 Requirement Elicitation

In this sections, many argue requirement elicitation is the most important in creating software, we will be using approaches proposed by Alexander and Beus-Dukic.

3.1 Identifying stakeholders

First of all, we have to identify the stakeholders (Clients), but as we (the participants) are the only Stakeholders, the elicitation we'll be conducted in methods that allow us to bring forth Ideas that will be as if they are requested by the client.

3.2 Modeling the context (SCOPE)

Before any step, we have to know what we're stepping into. We had to understand and set the environment the Software and we will be working in. As the creators and developers, We had to always keep in mind that we'll be working inside the campus of Hashemite University, with the students and being our customers and users.

3.3 Identifying scenarios and brainstorming

We used hypothetical scenarios that users may go through, we asked ourselves what will they expect, how would they navigate, and what will they react to and focus on the most. We'll see later on how this helped us build our user case.

3.4 Analyzing priorities

Priorities is a name we can easily replace "5abini" with, as it's already (as a software) geared into something very specific, we had no problems in seeing what should we focus on and what would our user base care about.

4 Requirements

4.1 User requirements

1. User shall be able to sign up.

2. User shall be able to select an academy.
3. User Shall be able to select their major.
4. User shall be able to post.
5. User shall be able to delete their posts.
6. User shall be able to delete their comments.
7. User shall delete any comments on their posts.
8. User shall be able to report Posts.
9. User shall be able to report comments.
10. User shall be able to up-vote posts.
11. User shall be able to down-vote posts.
12. User shall be able to up-vote comments.
13. User shall be able to down-vote comments.
14. User shall be able to search for posts he's interested in, through Hash-tags or keywords.
15. User shall be named "Poster" when they post.
16. User shall be Assigned a "Name" that reflects their position in the post, the first time they interact.
17. User shall be able to track their activities.
18. User shall be able to track activities on their posts.
19. User shall be able to track activities on their comments.
20. User shall be able to review posts from other users.
21. User shall be able to sign out.

4.2 System Requirements

Portability

1. System shall run IOS, tablets and smart phones, and also emulators.

Security

2. Database security is world class, provided by Google itself.
3. Flutter provides a secure data storage plugin for both the leading operating systems with the name of NSUserDefault for iOS and SharedPreferences for Android.

System and User Interaction

4. User shall be able to sign up using their University number and Phone number.
5. System will check for any University number duplication upon sign up, if the system finds any, user shall be notified with a warning message.
6. User will have to confirm their identity with an OTP (One-Time-Password) that will be sent to confirm that they own the Phone number, and that it's correct.
7. User shall be able to assign a password that will agree with password requirements.
8. Passwords must use at least three of the four available character types: lowercase letters, uppercase letters, numbers, and symbols.
9. User shall be able to sign in with their Phone number and the OTP that will be sent.
10. User Shall be able to select the App's theme after confirming their identity, the options will be "light-mode" and "dark-mode".
11. User shall be able to comment on each post with a different name, unless it's in their own posts, it will always be "Poster", that will also show when they comment.
12. User that comment on a post will be given a name that reflects when they commented on the post (if they are the first to comment, their number will be @, second to comment will be @ Etc.)

13. User shall be able to report Posts by pressing the ellipsis button (three dots) on the post and selecting report. An interface will be shown, asking the user to select the reason for the report, and allowing the user to write his own personal reasoning and comments. The same procedure occurs with reporting comments.

14. User shall be notified with a "Pop-up" of activities related to their posts and comments.

15. User shall be able to Up-vote and Down-vote posts and comments by pressing Either the Up-vote button (arrow head pointing to the top) or Down-vote button (arrow head pointing to the bottom)

16. System shall only allow posts to last up to hours, user will have the option to select between and hours regarding his post availability.

17. User shall have an interface where they can see recent activities on their posts and comments that are still available.

System properties

18. System should always be up, aside from maintenance

19. User's time-line shall be shown depending on the Major and academy they choose.

20. User shall be shown # of posts, comments, upvotes, his most interacted post and recently available ones in the Account Interface.

21. An Admin will be assigned for human involvement if needed, giving them permission to delete others posts and comments.

22. System shall add posts, comment, delete, do other requests from 0.5 to 2 seconds maximum under heavy load.

23. System shall be able to handle 10000 thousand request at a time..

5 Models and Diagrams

5.1 USE CASE

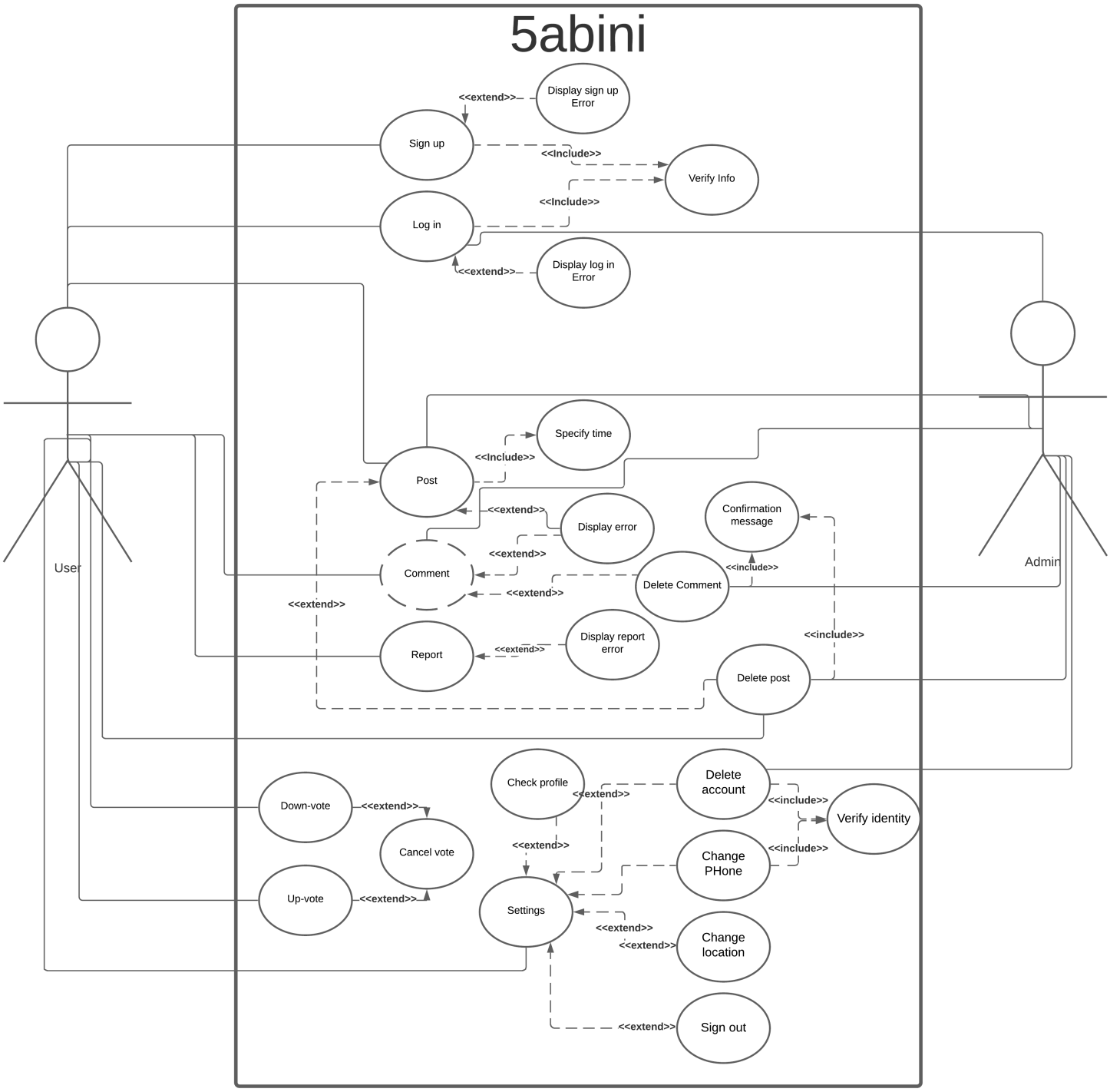


Figure 1: USE CASE

5.1.1 Use cases

Log in

1. Enter Phone number
2. Enter OTP
3. Click "Log in"

Sign up

1. Enter University ID
2. Enter Phone number
3. Enter OTP
4. Click "Sign in"

Post

1. Enter content
2. Set duration

Comment

1. Choose post
2. Press comment Icon
3. Enter content

Report

1. Click arrow to open list on post
2. Add report content
3. Click "Report"

Upvote-Downvote

1. Choose post
2. click Arrow-up to upvote, Arrow-down to downvote

Check Profile

1. Click on "Settings"
2. Click "Profile"

Delete account

1. Click on "Settings"
2. Click "Delete account"
3. Confirm Identity with OTP
4. Confirm delete

Change phone Number

1. Click on "Settings"
2. Click "Change phone"
3. Confirm Identity with OTP on old number
4. Enter new phone
5. Confirm Identity with OTP on new number

Change location

1. Click on "Settings"
2. Click "Location"
3. Choose "A Facility
4. Click "Change"

Sign out

1. Click on "Settings"
2. Click on "Sign out"

5.2 ER Diagram

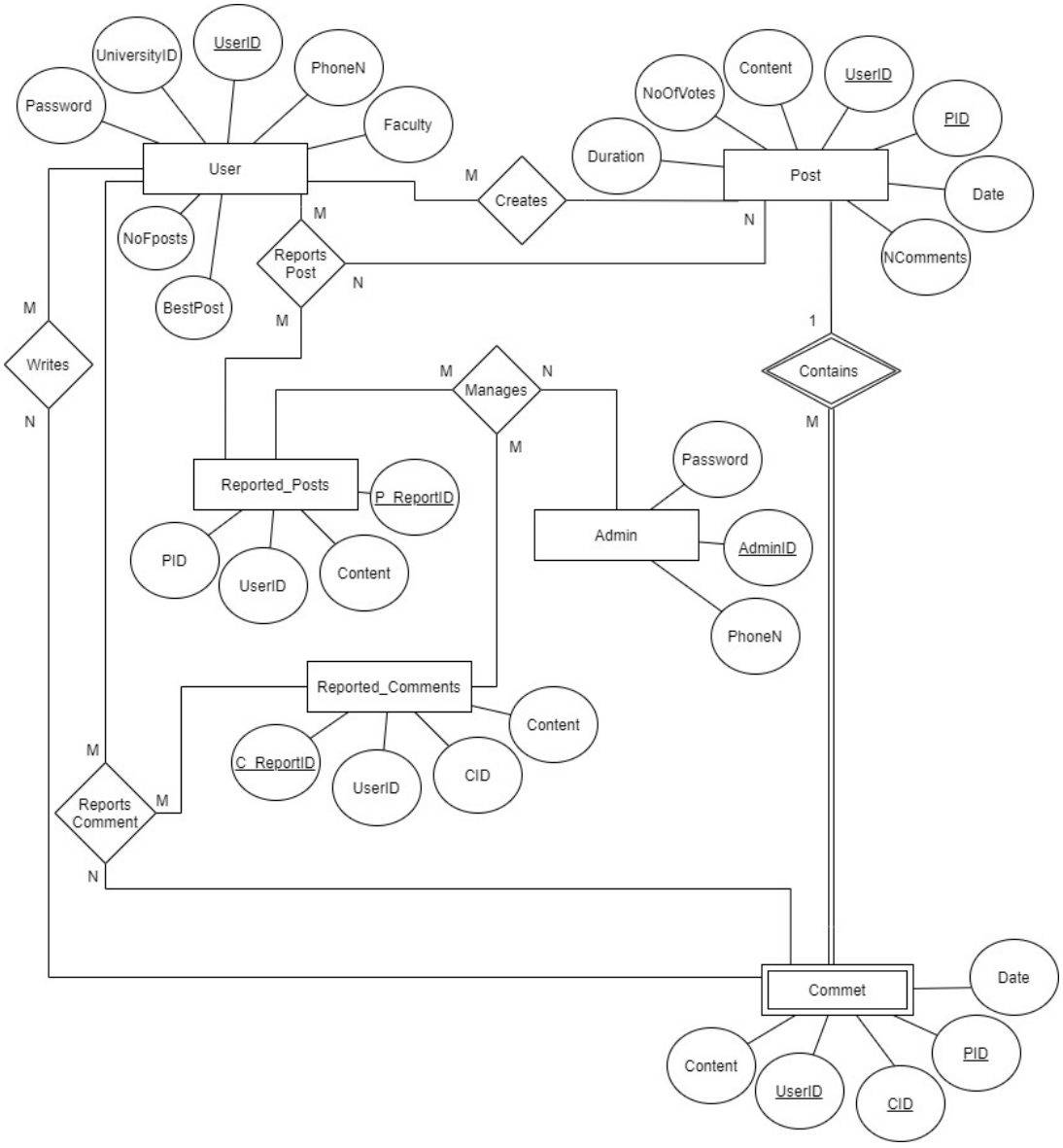


Figure 2: ER Diagram

5.3 Sequence Diagrams

5.3.1 Sign-up

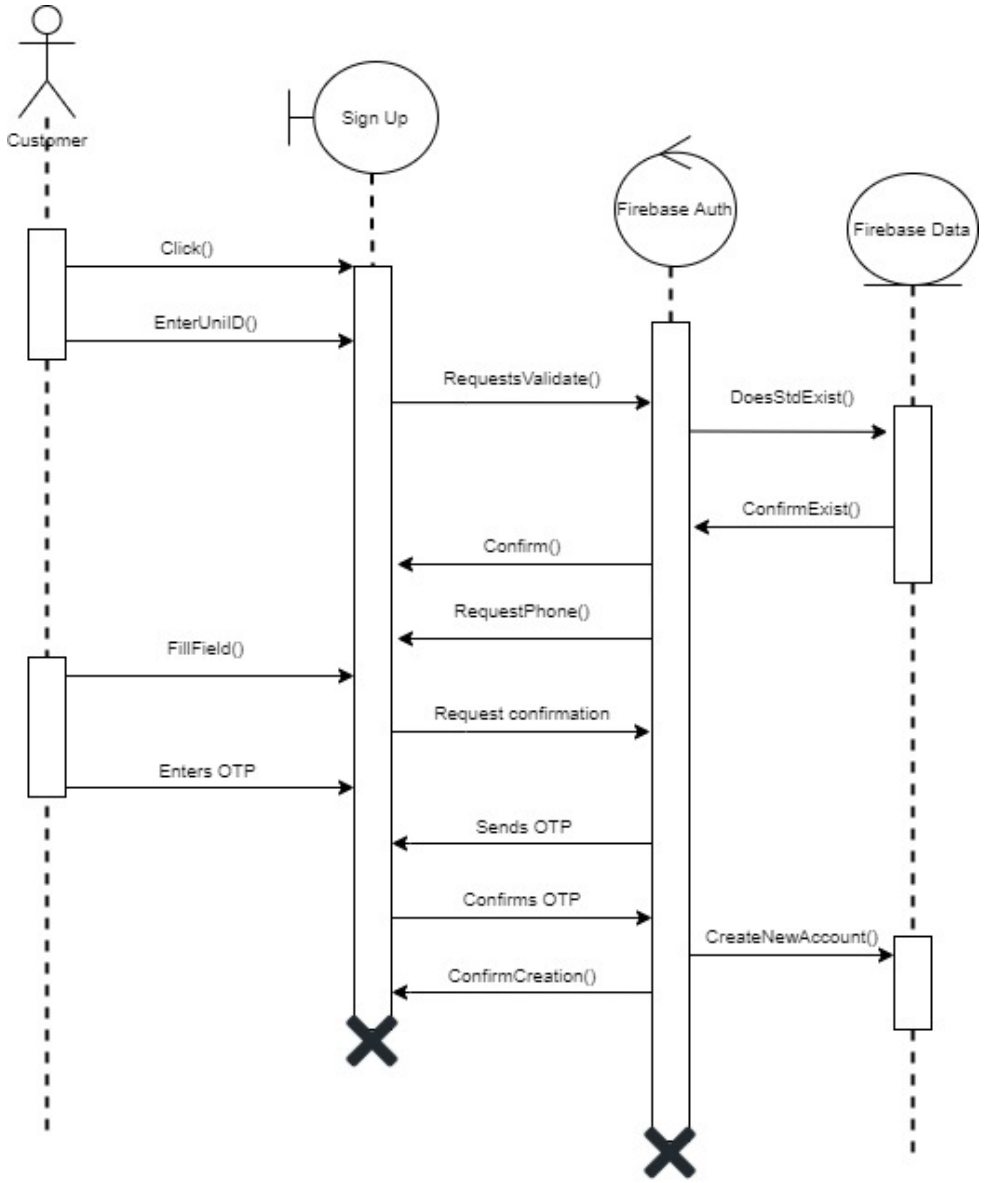


Figure 3: Sign-up sequence

5.3.2 Post

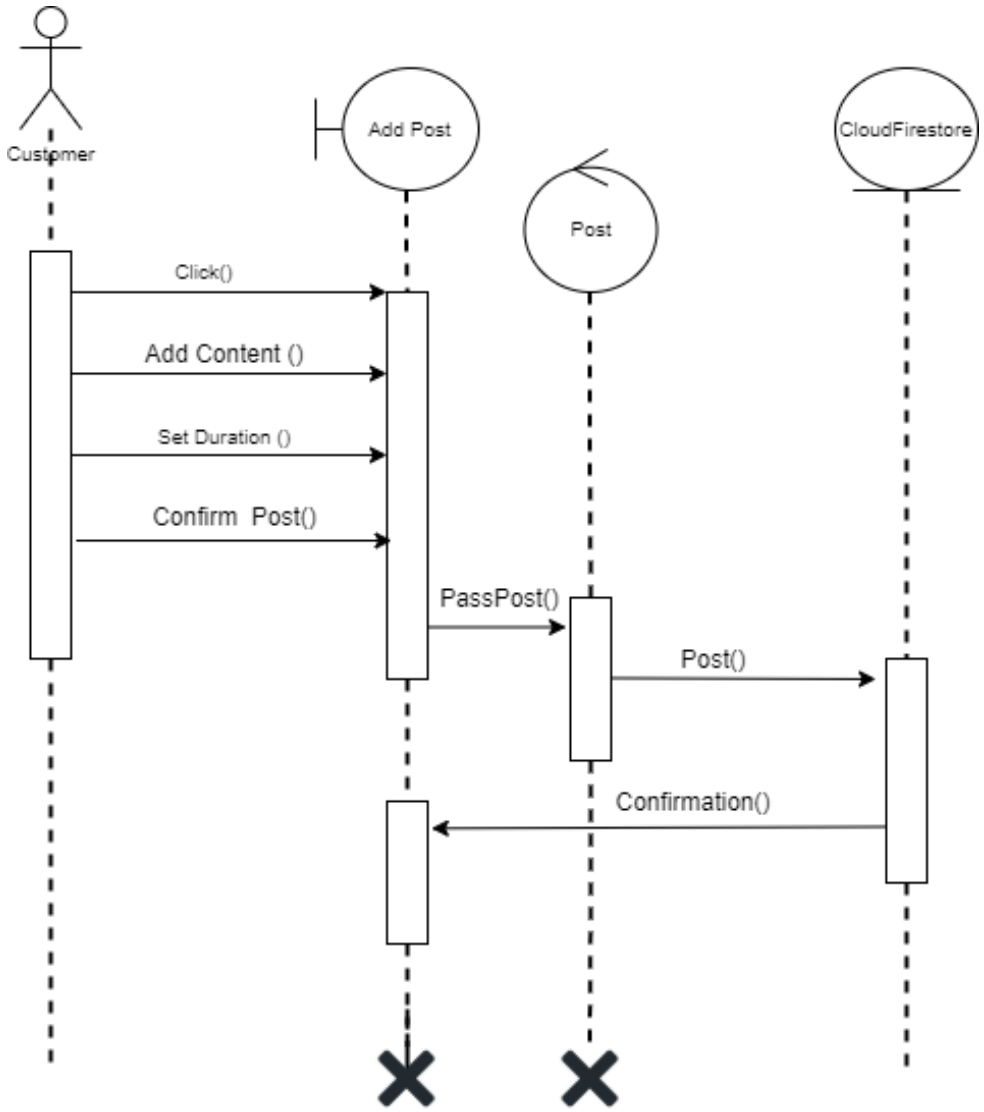


Figure 4: Sign-up sequence

5.3.3 Class Diagram

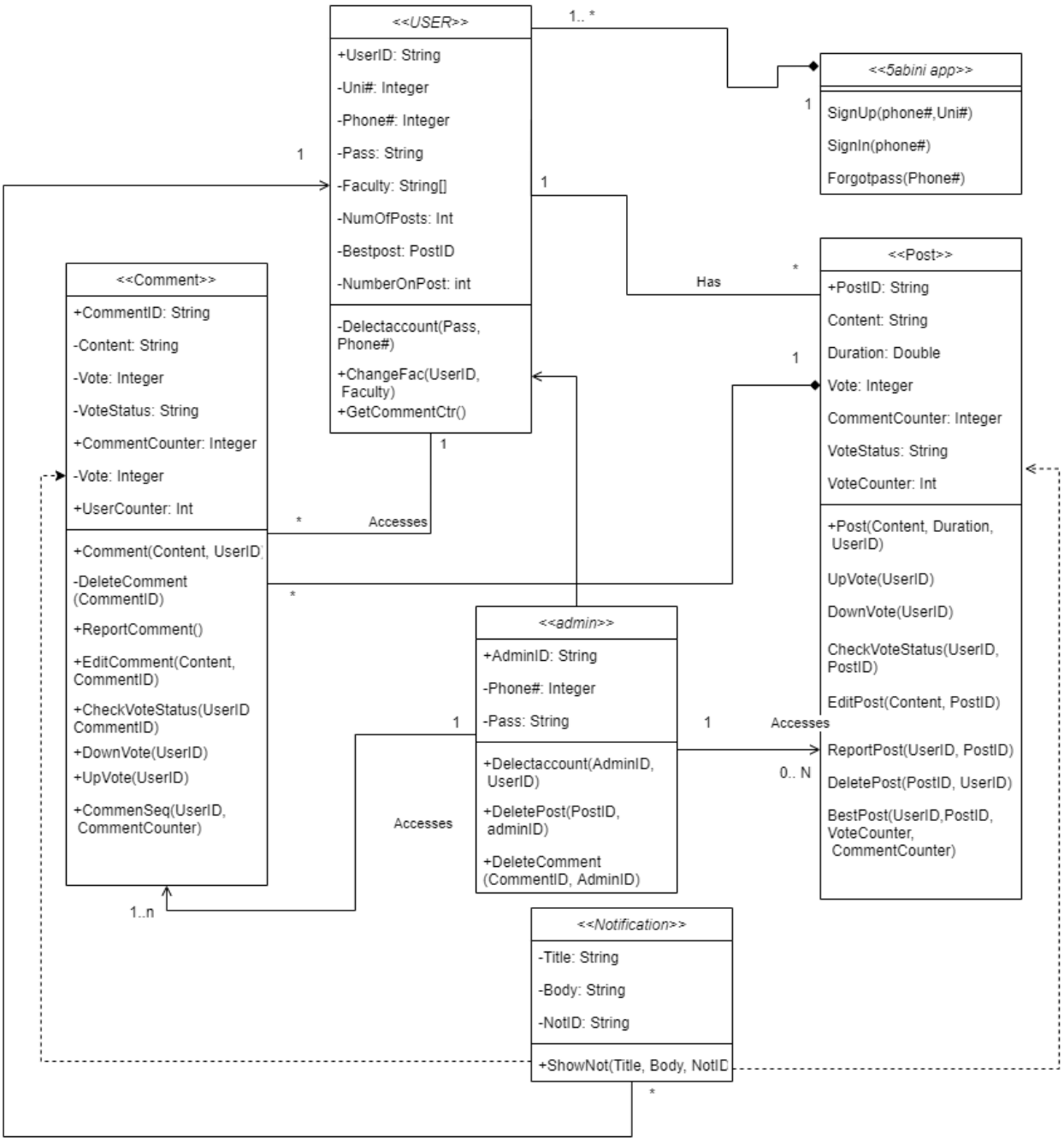
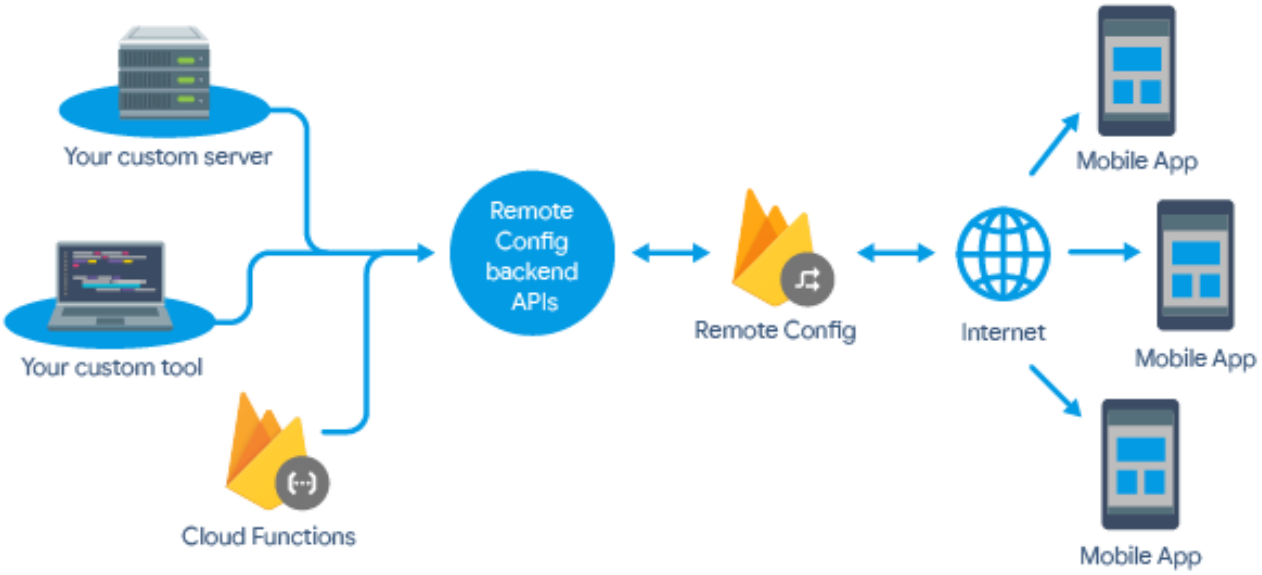


Figure 5: Class Diagrams

5.4 Software Architecture



6 Software Implementation and Testing

6.1 Tools

- LaTeX (Academic document preparation tool)
- Android Studio (for Coding)
- Github (Documentation and Code sharing)
- Firebase (Used to maintain fully functional cloud-based database that's encrypted by google)
- JSON
- Lucid Chard (Diagrams and models)
- Draw.io (Diagrams and models)
- Firebase Authentication (API's that are used for user Authentication)

6.2 Languages

- Flutter
- Java.js

7 Testing

Sign-Up			
# number of inputs	Input	OTP Status	Expected outcome
1	University ID is correct, Phone number is correct	OTP is sent to confirm and entered correctly	successfully registered
2	University ID is correct, Phone number is incorrect	OTP is not sent	unsuccessful, user Notified with error
3	University ID is incorrect, Phone number is incorrect	OTP is not sent	unsuccessful, user Notified with error

Posting		
# number of inputs	Input	Expected outcome
1	Content entered and is not empty	post created
2	Content is not entered and is empty	post not created, user notified

References

[1] Sophie E Carruthers, Emma L Warnock-Parkes, and David M Clark. Accessing social media: Help or hindrance for people with social anxiety? *Journal of experimental psychopathology*, 10(2):2043808719837811, 2019.

[2] Mike Collingridge, Seumas Miller, and Wendy Bowles. Privacy and confidentiality in social work. *Australian Social Work*, 54(2):3–13, 2001.