

Welcome to Cheney App

Team No. 1



Team Details



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Project Overview

Welcome to Cheney is a non-profit dedicated to fostering community through reliable information sharing. Our mission is to build a vibrant and thriving community through strategic & intentional communication, bridging connections, and facilitating action.

This project was sponsored by Maria Fell as a means to develop an alternative to noisy social media apps. The Welcome to Cheney mobile app uses a three tier user system in order to maintain the credibility of sources that share information.

Viewers will be able to view posts and submit information for approval by an admin. Posters will be able to automatically submit/edit/delete their own posts. Admins will have full control over all posts and the ability to edit the tier of other users and delete other user accounts.

Requirements List

- R1(U1,2)** Admins must be able to create posts and edit any post.
- R2(U3)** Admins must be able to delete any post.
- R3(U4)** Any user that can create posts must be able to add tags to their post.
- R4(U5)** Any post tagged with “Event” must have buttons to allow users to RSVP.
- R5(U6)** Admins must be able to upgrade/downgrade to the privileges of another account.
- R6(U7)** Admins must be able to delete other accounts.
- R7(U8)** Viewers must be able to choose pre-determined tags regarding information that interests them.
- R8(U9)** Users must be notified when a post that contains a tag they currently have selected is posted.
- R9(U10)** All Users must have a personal feed that will contain all recent posts with tags that they currently have selected.

- R10(U11)** All Users must have access to a global feed that contains all recent posts regardless of tags.
- R11(U12)** All Users must be able to sort posts by multiple metrics(most recent, tags, title, ect.)
- R12(U13)** Viewers must be able to fill out a Specific Fillable Form (SFF) to share possibly useful information to an Admin.
- R13(U14)** All Users must be able to create an account using a unique username and a password.
- R14(U15)** All Users must be able to change their password at any time.
- R15(U16)** All Users must be able to delete their own account.
- R16(U17,18)** Approved Posters must be able create posts and edit their own posts.
- R17(19)** Approved Posters must be able to delete their own posts.

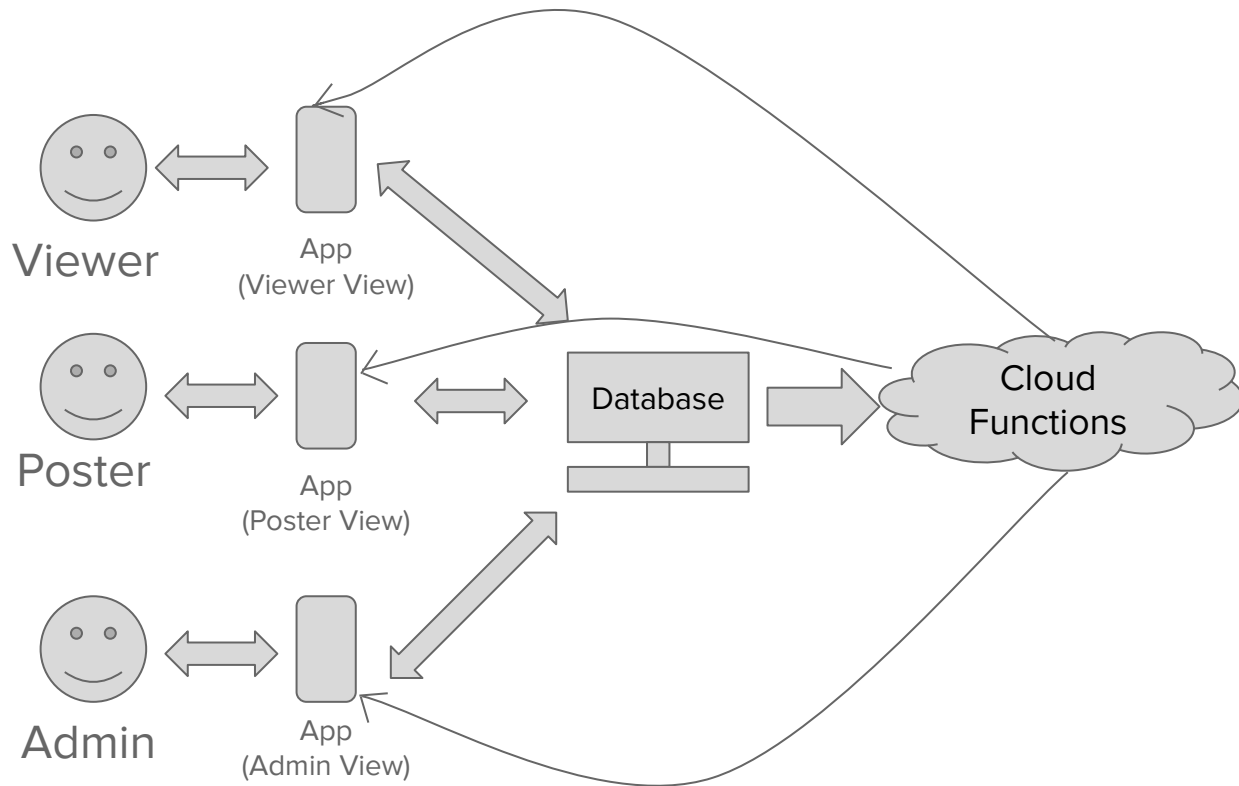
Project Solution Approach

The major components of our project are the mobile app and our backend database.

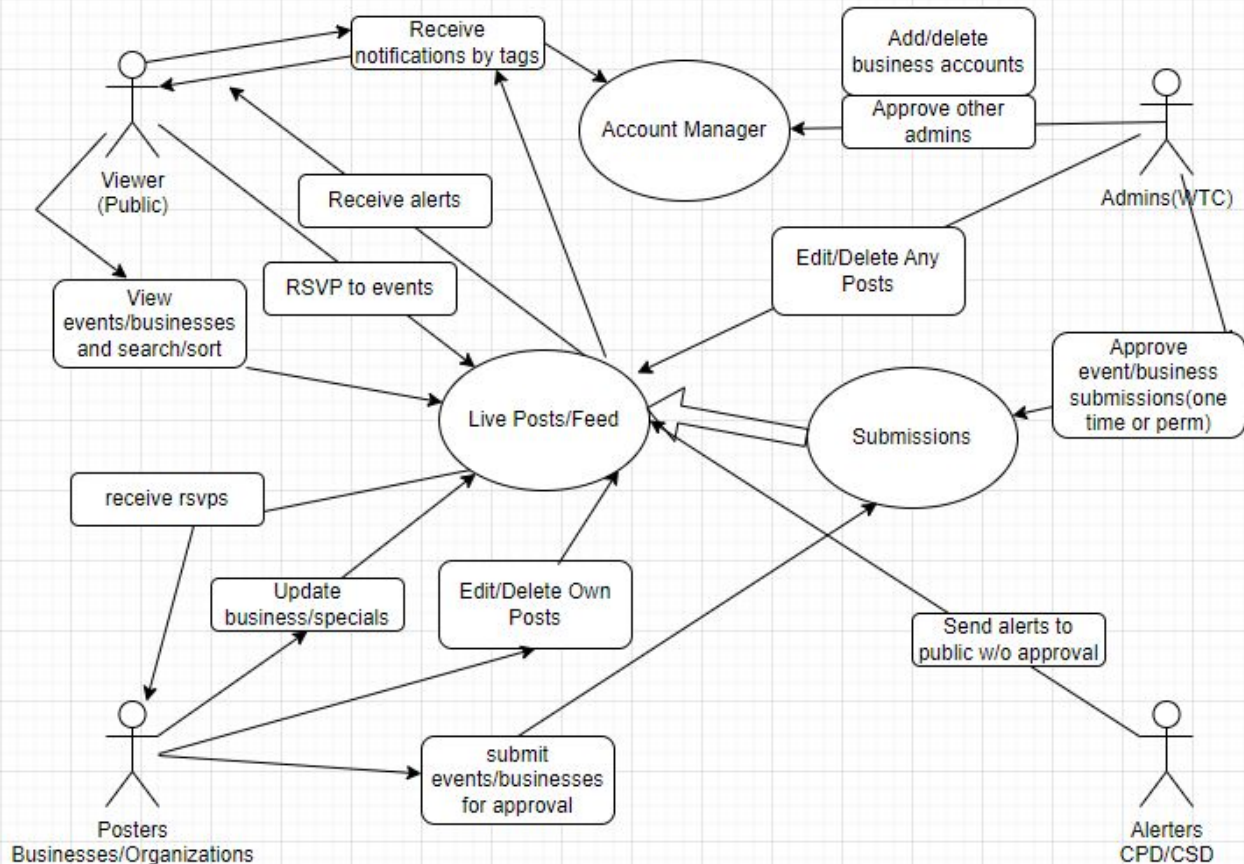
The various components that we've utilized are:

- Flutter/Dart - Cross Platform Capability and commonly used with Firebase
- Firebase - Very intuitive and encompasses other components
 - Firestore (Database)
 - Authentication (Sign In)
 - Messaging (Notifications)
 - Functions (Notifications and User Deletion)
 - Storage (Profile Pictures)

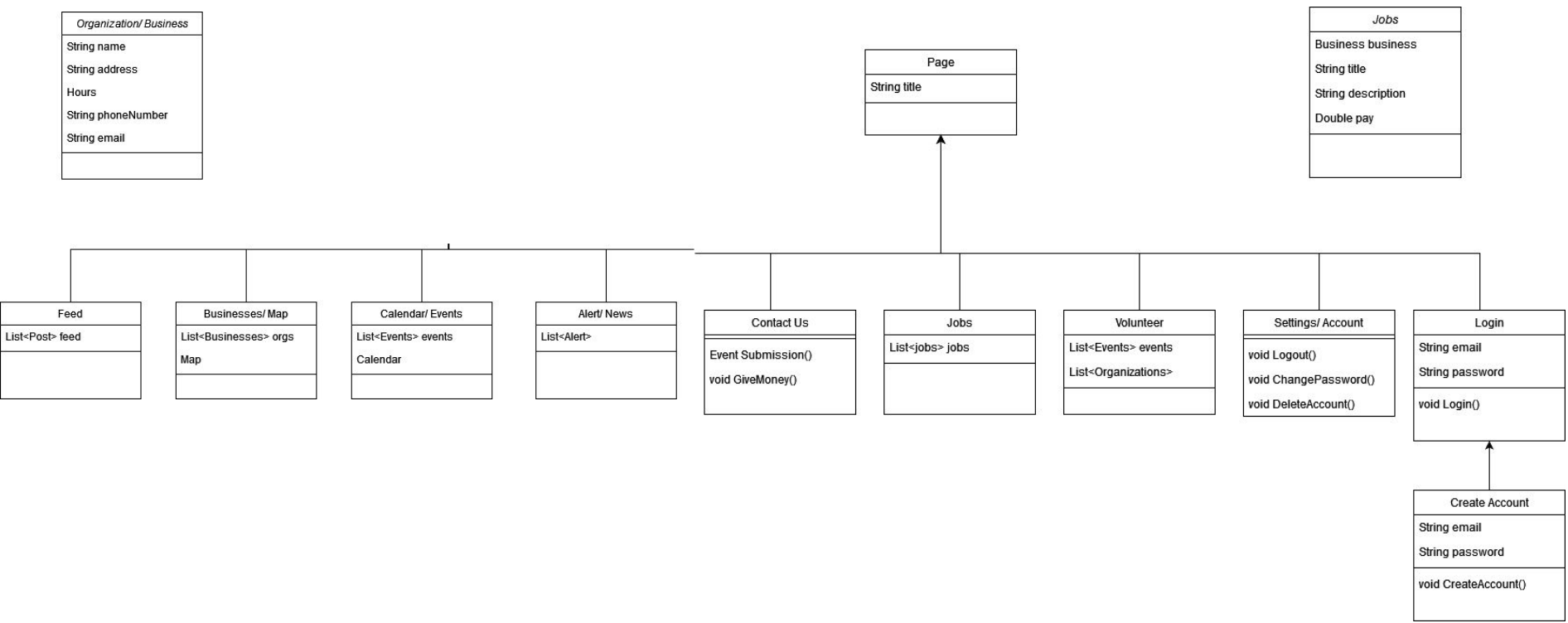
System Architecture Diagram



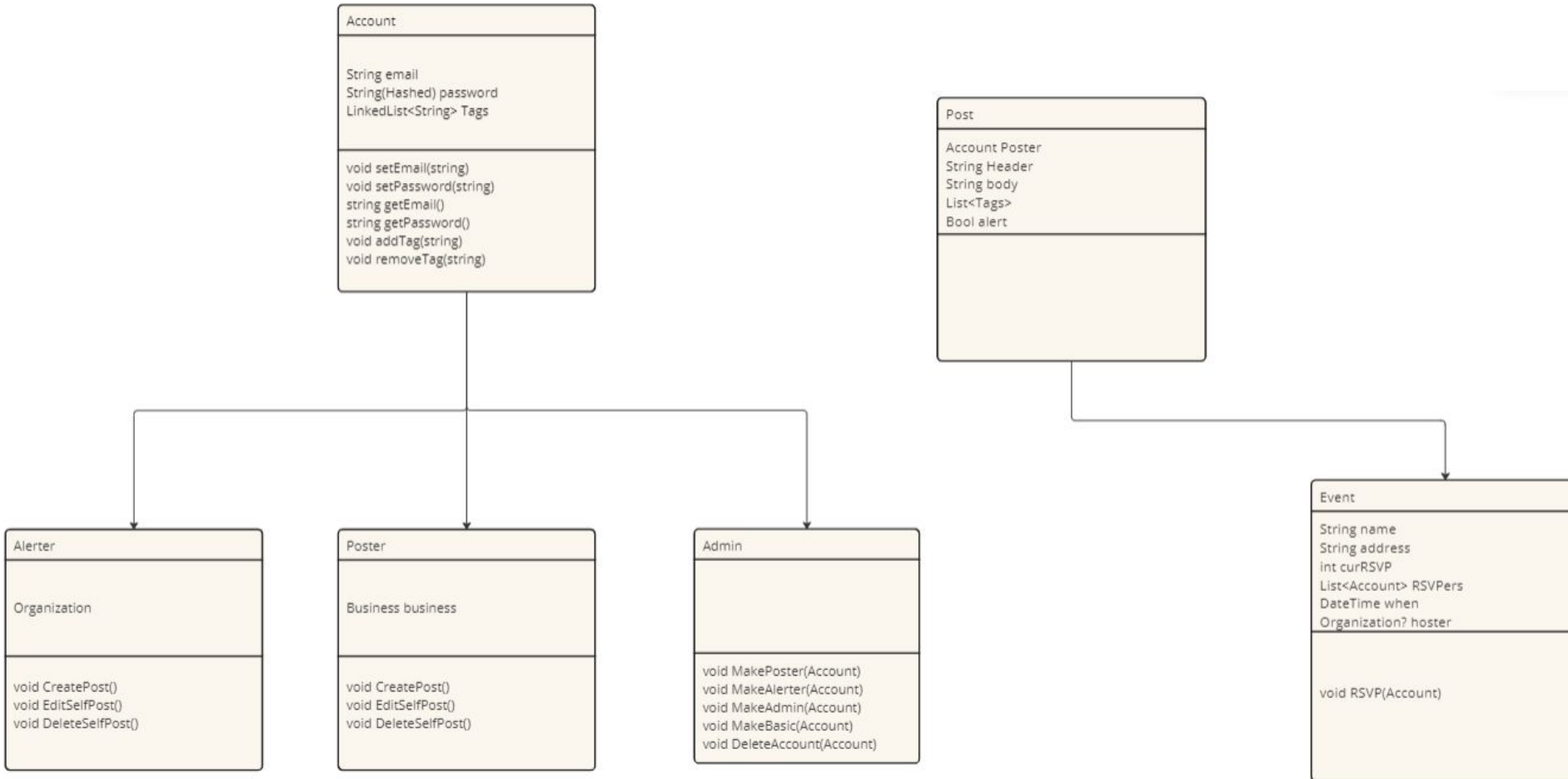
Use Case Modeling



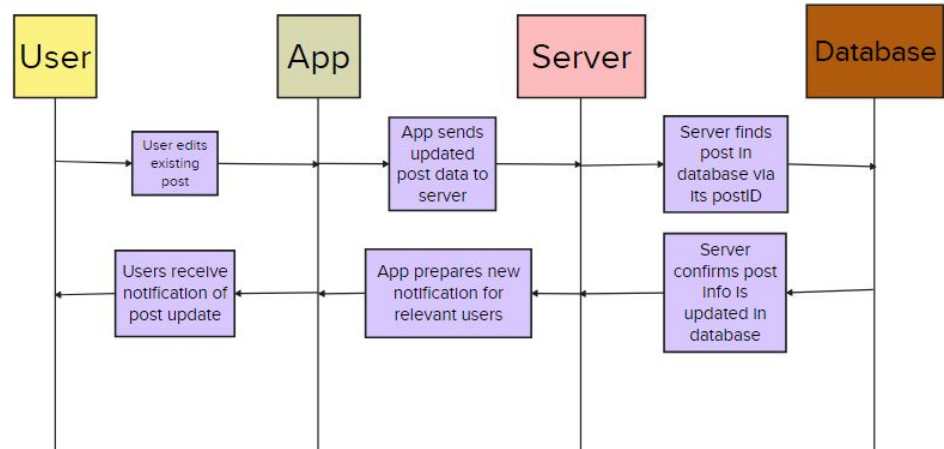
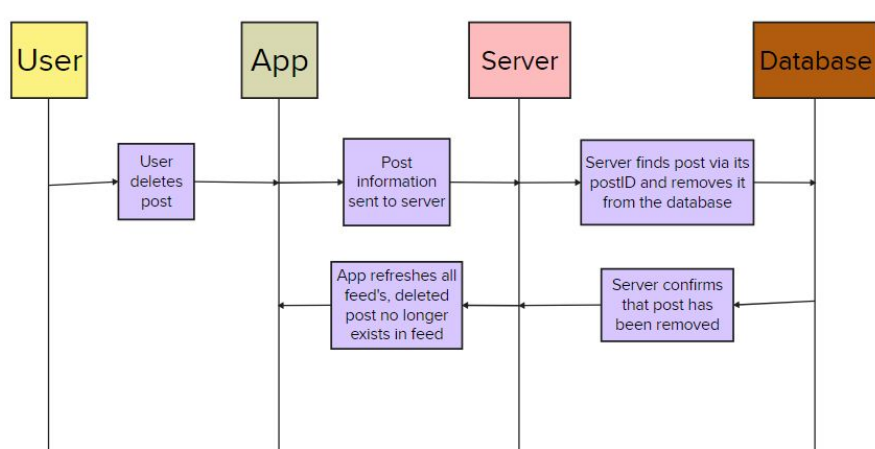
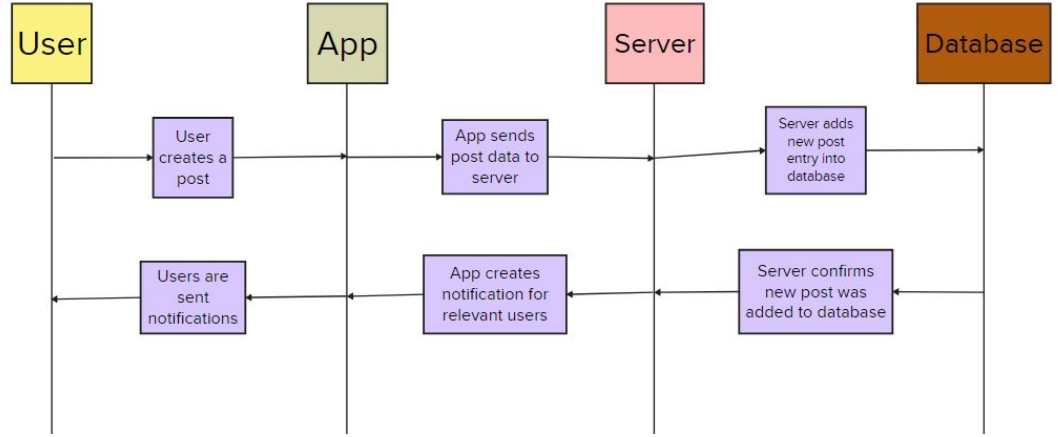
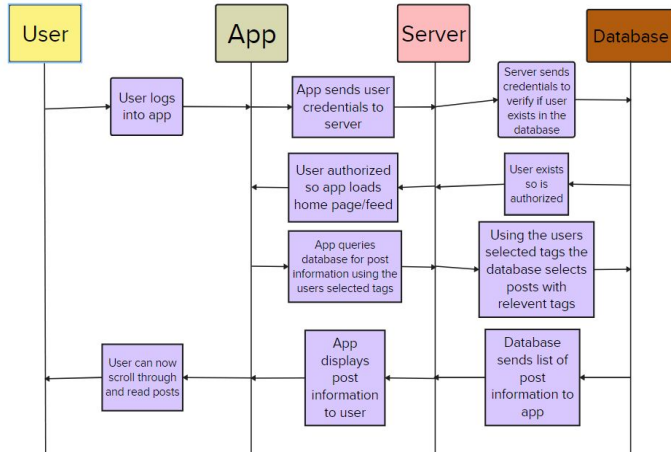
Structural Modeling: Class Diagram



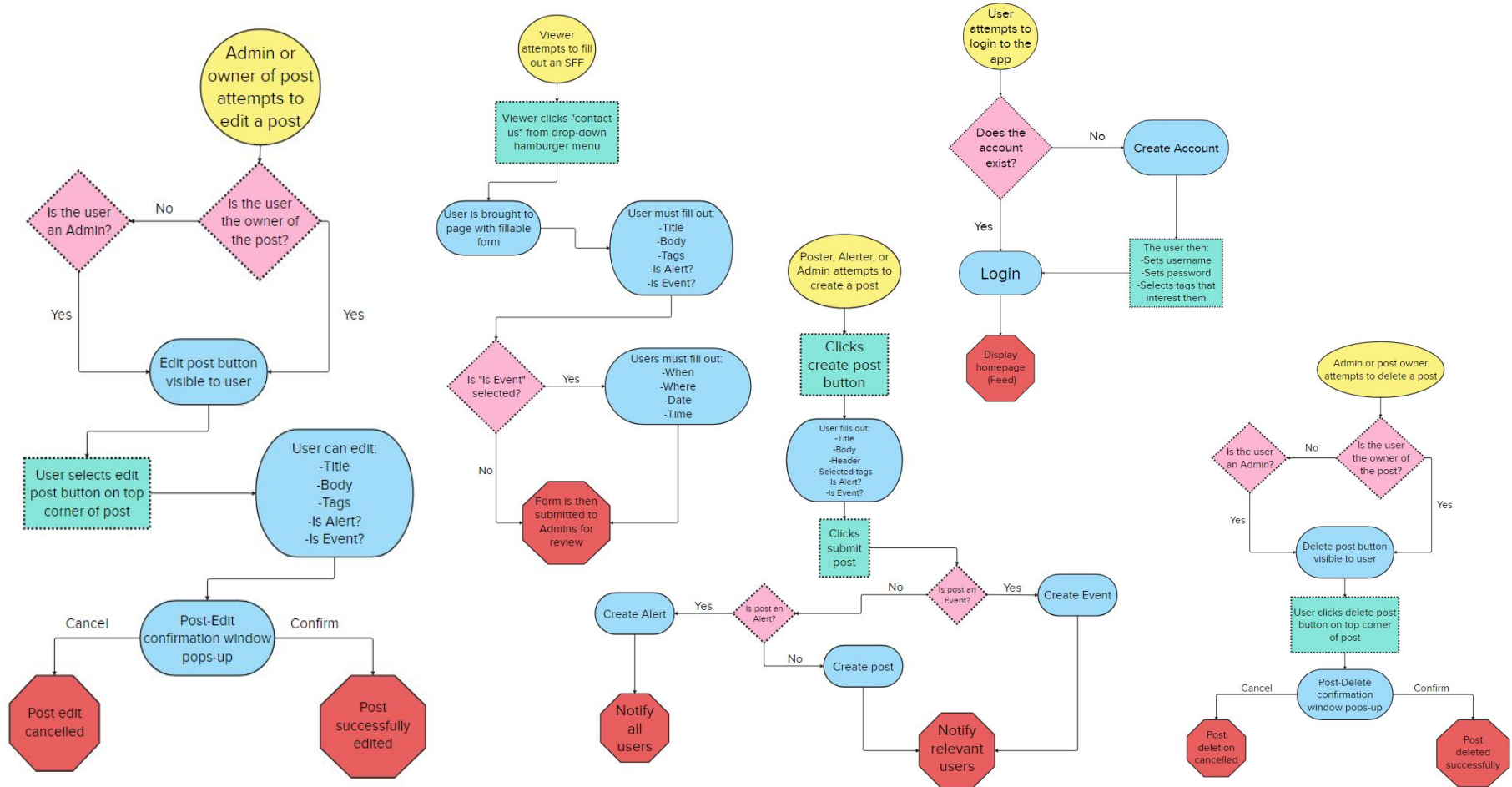
Structural Modeling: Class Diagram



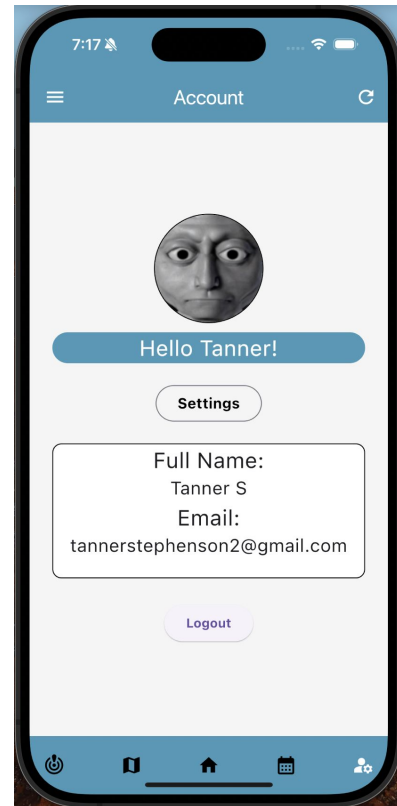
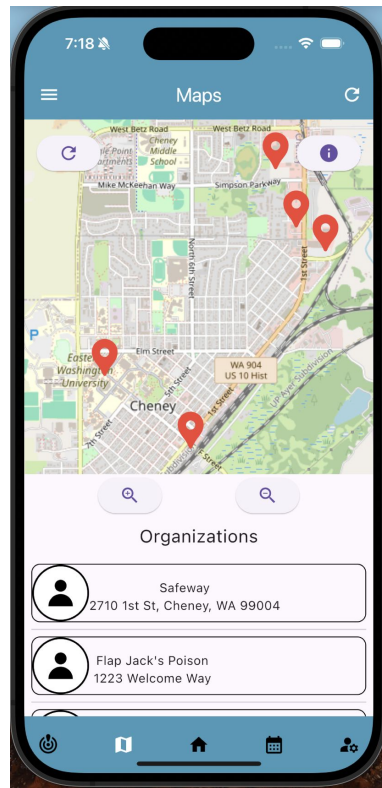
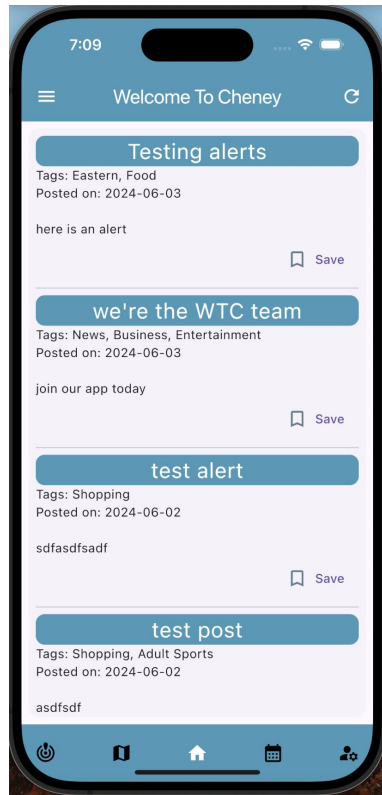
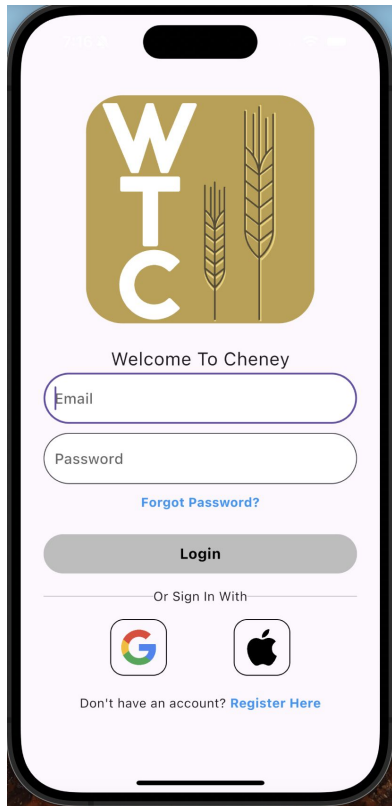
Behavioral Modeling: Sequence Diagram



Behavioral Modeling: Activity Diagram



Screenshots (Frontend)



Screenshots (Backend)

User Authentication Table

Search by email address, phone number, or user UID					Add user	↺	⋮
Identifier	Providers	Created ↓	Signed In	User UID			
daniel.aaron.palmer2@...		May 29, 2024	May 29, 2024	RSyl1JW6ZdR5U30T6hoM0sL...			
abcdef@gmail.com		May 27, 2024	May 27, 2024	X0iYzpOEjmgIbQemHQISevsJ...			
timmytaters12@hotmail...		May 27, 2024	May 27, 2024	exUHp3hjXUSW1u1gn8j2TLt...			
toe@gmail.com		May 26, 2024	May 26, 2024	bKJTl0M4xQhzlCWnMHUMnu...			
beebob@weewoo.com		May 26, 2024	May 29, 2024	v8eYo3Enr5PQLc4oGzNQMzY...			
mattxbocks@hotmail.c...		May 23, 2024	May 23, 2024	i2xA0vZaqkhaV4TSiz8eDA8iB...			
mytestviewer@gmail.c...		May 21, 2024	May 21, 2024	VMx105IM42VKK1FasGdYrB...			
safewaytest420@gmail...		May 19, 2024	May 27, 2024	8ty7Al6G4WVvFRlx78eVMX2p...			
wtc@gmail.com		May 19, 2024	May 19, 2024	BsVIQZFd4ac1q4ADmnrfF7Fh...			
dmcrocker@gmail.com		May 19, 2024	May 29, 2024	lQwmCzyhOGPrYb8ljxLHCW...			
rubberduck@gmail.com		May 18, 2024	May 18, 2024	BaW1lqdWQRepfSxcTkM2btG...			
granny@gmail.com		May 18, 2024	May 29, 2024	upmpwk8mRzL6dMhzvMZIZ...			
ignoreme@gmail.com		May 17, 2024	May 17, 2024	lp42dk1mZhR8E5ikC7EdHUGL...			
qator@gmail.com		May 17, 2024	May 17, 2024	T5lFPx7xcoMXo0lZl79kJeZlB...			

Cloud Functions

Filter campaigns									Search by campaign name, description ...	New experiment	New campaign
Campaign	Start	End	Status	Target	Last Updated ↓	Sends / Impressions	Clicks / Opens				
test test	May 9, 2024 11:52:34 AM	-	Completed		May 9, 2024	<1000	0%				
0/10 Recurring notifications ⓘ											

Database

Home > _posts > 0b5c8910-c3c1-			More in Google Cloud
(default)	_posts	0b5c8910-c3c1-4b5f-ae32-a5421c848e3d	
+ Start collection	+ Add document	+ Start collection	
_posts	062c8f07-e020-4279-a77b-261b9...	+ Add field	
_review_posts	0b5c8910-c3c1-4b5f-ae32-a5421...	body: 'new tags!'	
businesses	216c3980-fea1-4ce6-a902-d05ee...	createdAt: '2024-05-12'	
tags	21a8e812-4e7b-42b4-84c0-38385...	header: 'New tags test'	
users	279b3052-f11b-45e2-9994-b2164...	interestCount: 0	
	2c8f76af-d61a-4d0b-8820-54f65...	postID: '0b5c8910-c3c1-4b5f-ae32-a5421c848e3d'	
	2ca7abb0-6141-44f8-8329-4fce0...	tags	
	2f9bf146-8394-434f-b952-35e7e...	0 'News'	
	37f6dc8f-799b-49f1-9023-630a1...	1 'Adult Sports'	
	41449565-ec11-4234-884b-55d1b...	2 'Traffic'	
	47b454c9-f43b-4a6a-9f3f-9a4e9...	3 'Construction'	
	488dff29-a010-4f09-bcb7-3a90e...	timestamp: May 12, 2024 at 5:27:24PM UTC-7	
	538ec84d-3a53-416c-9ab3-69d3b...	title: 'testing new tags'	
	5b75ec9e-28cf-4536-a199-7de3f...	type: 'Post'	
	5c9606e7-f791-49de-aa5d-8b738...	user: 'acehardware@gmail.com'	
	5fd3554e-30bd-451d-be90-4a724...		

Screenshots (Code)

```
import 'package:flutter/material.dart';
import 'package:wtc/widgets/alerts_list.dart';

class AlertsPage extends StatefulWidget {
  const AlertsPage({super.key});

  @override
  State<AlertsPage> createState() => _AlertsPage();
}

class _AlertsPage extends State<AlertsPage> {
  @override
  Widget build(BuildContext context) {
    //final ThemeData theme = Theme.of(context);
    return Card(
      shadowColor: Colors.transparent,
      margin: const EdgeInsets.all(8.0),
      child: SizedBox.expand(
        child: AlertsList(),
      ),
    );
  }
}
```

Dart code for one of
our pages

```
const functions = require("firebase-functions");
const admin = require("firebase-admin");
admin.initializeApp();
```

```
exports.deleteUser = functions.https.onCall(async (data, context) => {
  const uid = data.uid;
  try {
    await admin.auth().deleteUser(uid);
    return {message: "Successfully deleted user"};
  } catch (error) {
    // throw new functions.https.HttpsError("unknown", error.message, error);
  }
});
```

```
exports.deleteUserByEmail = functions.https.onCall(async (data, context) => {
  const identifier = data.identifier;
  try {
    const userRecord = await admin.auth().getUserByEmail(identifier);
    await admin.auth().deleteUser(userRecord.uid);
    return {message: "Successfully deleted user"};
  } catch (error) {
    // throw new functions.https.HttpsError("unknown", error.message, error);
  }
});
```

```
exports.sendPostNotification = functions.firestore.document('_posts/{PostID}').onWrite((change, context) => {
  const postID = context.params.PostID;

  if (!change.after.exists) {
    console.log('Post removed :(');
    return null;
  }

  const db = admin.firestore();
  const postRef = db.collection('_posts').doc(postID);

  return postRef.get().then(doc => {
    if (!doc.exists) {
      console.log('No such document!');
      return null;
    }
  });
});
```

Javascript cloud code

Demo.

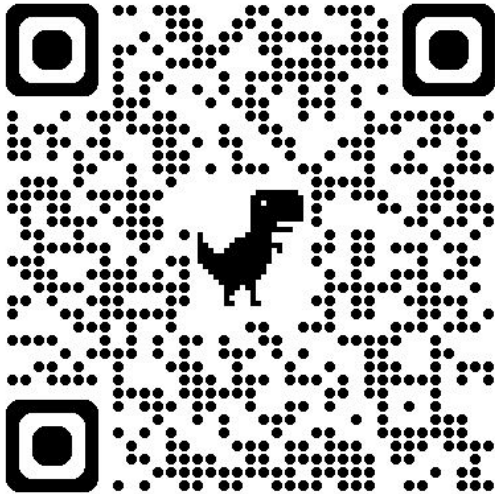
Conclusion

Over the course of this project, we learned:

- Working in a team to create a functioning public application from the ground up.
- Designing and implementing both the front and back end components of the application.
- Consulting a client and maintaining a feedback loop so that we're always on track with our client desires.
- Version control and learning the development stages of creating software.
- Navigating the nuances of getting a mobile app published on both mainstream app stores.

Github & Youtube Video Link for Demo

<https://github.com/CSCD488-Winter2024/senior-project-the-a-team>



<https://youtu.be/xFoFxfyn2yY>

References

- [FlutterFire Documentation](#)
- [Firebase Documentation](#)
- [Flutter Packages](#)
- [Mitch Koko Youtube Tutorials](#)
- [Apple Sign In](#)
- [Apple Deployment](#)
- [Android Deployment](#)