

CENTRAL UNIVERSITY



DESIGN AND IMPLEMENTATION OF A COMMUNITY-BASED LOCAL
SERVICES AND AMENITIES LOCATOR APP

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2025

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LOCAL SERVICES AND AMENITIES LOCATOR APP**

BY

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CSC/21/01/1399 CSC/20/01/2455

A Long Essay submitted to the School Of Science and Technology, Central University in partial fulfillment of the requirements for the award of a Degree of Bachelor of Science (BSc.) in Computer Science.

JULY 2025

DECLARATION

Student's Declaration

We hereby declare that this project work is the result of our own original research and that none of it has been presented for another degree in this University or elsewhere. We are responsible for any errors and omissions detected.

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Date: _____

Signature: _____

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Date: _____

Supervisor's Certification

I hereby certify that the preparation of the project work was supervised in accordance to the guidelines of supervision of project work laid by Central University.

Supervisor's Signature: _____

Name: _____

Date: _____

ABSTRACT

These days, it's really important for people to easily find places and services around them, like restaurants, hospitals, schools, and shops. Our project's main goal was to create an app that helps people in a community find and connect with local businesses and services. Whether someone lives in a big city or a small town, the app makes it easier to know what's nearby. It's useful for regular users who just want to search for places, and also for business owners who want to manage their business profiles.

To do this project, we focused on building a mobile app for communities around us. We collected data by asking questions and giving out surveys. We then looked at the data using simple stats to see what worked and what didn't. The mobile application was developed using Flutter, while the admin dashboard was built using React JS. Google Firebase was used for real-time data storage and management, ensuring secure and efficient handling of user data.

The whole application is designed to be simple and easy to use, so people can quickly find what they need in their area. In the end, our project shows how we can use technology to help people stay connected to services in their communities, whether they're living in big cities or in small towns. In the future, we think it would be cool to add things like reviews from users, alerts for nearby places, and even public service info to make the app even better.

ACKNOWLEDGEMENT

All praises belong to God almighty, and thanks for this divine assistance and guidance, which made it possible for it to be possible for us to complete our academic program. We want to express our gratitude to all the people who helped complete our final year project work. Their support and encouragement have been priceless throughout the completion of our project work. We would also like to thank our project supervisor Dr. Kissi Mireku for his guidance and assistance. His expertise and mentorship have played a huge role in enhancing the quality of our project. We are also grateful for his support and the opportunities he provided us for our professional growth. We are grateful for our family's love and encouragement throughout our academic journey. Finally, to all who played a role and made this project a success, we are very grateful for all your support and contributions.

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CHAPTER ONE: INTRODUCTION

Background of study

Living in a town or moving to a new place can sometimes feel confusing — especially when you don't know where and how to find stuffs. Let's say someone visits a new community. They may not know where the nearest hospital is, or which restaurant has good food. Sometimes they have to stop and ask random people on the street for directions, and even then, they might still get lost or waste a lot of time.

Even people who live in the community don't always know what's around them. For example, there might be a good tailor or hairdresser just a few streets away, but no one knows because they're not familiar with the person or the business isn't online. Business owners also struggle because if they're not on the internet, it's hard for them to get new customers.

Most apps today focus on big cities or big businesses, and not really on small communities or the local shops. That's why this app is being made — to help people easily find all the important places and services in their area, like schools, hotels, clinics, electricians, food spots, and more (Raper et al., 2007; Jiang & Yao, 2006).

This app will be like a local guide in your pocket. It makes life easier for visitors, new residents, and even people who've lived in the area for years. And for business owners, it gives them a place to show off what they do and attract new customers.

Statement of the problem

Many people do not know what businesses and services are around them, especially when they move to a new community (Naudé, 2020). On the other hand, small business owners also struggle to be seen or discovered by locals. There's no simple, community-based app that helps with both — letting users explore and letting business owners manage their own info. This project wants to fix that.

Objectives of the study

The goal of this project is to build a simple and easy-to-use app that helps users discover local businesses and community places like schools, hospitals, and hotels. It also allows business owners to create and manage their business profiles so people can find them easily.

The key objectives of this system are

- Let users see businesses and community places based on their location
- Allow users to save and share the places they like
- Let users switch to a business account if they own a business
- Give business owners the tools to update their business info
- Let the super admin manage everything behind the scenes

Research questions

- How can we help users discover nearby services more easily?
- Can a mobile app improve how businesses are found in local areas?
- What are the best tools and methods for building a fast and user-friendly location-based system?

Significance of the study

This project will help communities become more connected (UNCTAD, 2022; World Bank, 2022). It will support business growth and make it easier for people to find important places and services. It will also show how simple tools like Flutter and Firebase can be used to build helpful solutions.

Delimitation of the study

This app is focused on helping people find things in their own community. It will include:

- Restaurants, hotels, schools, hospitals, and other important places
- Service professionals like electricians, plumbers, and tailors
- A mobile app for users and business owners
- An admin panel where the super admin manages everything

It won't cover things outside the user's local area unless they change their location in the app.

Organisation of the study

This project report is divided into five chapters. Chapter One introduces the topic. Chapter Two reviews related work. Chapter Three explains the methods used. Chapter Four shows the results and what was learned. Chapter Five concludes the project and gives suggestions for the future.

Limitations

- The app depends on internet access — no connection means no data
- Only one business account per user
- Users must allow location access or choose their community manually
- There's only one super admin to handle back-end management

CHAPTER TWO: LITERATURE REVIEW

Introduction

In this chapter, we'll look at some ideas, past projects, and apps that are similar to what we want to build. This helps us understand what has already been done and what we can do better. We also explain the ideas behind this project and how it connects to what others have done.

Theoretical framework

This project is based on the idea that people need fast and easy access to information in their area (Rogers, 2003), (Jiang & Yao, 2006). The app uses location-based services and mobile computing to deliver useful data to users wherever they are. The two main theories behind this project are Location-Based Services and the Technology Acceptance Model.

Location-Based Services (LBS): LBS is a technology that provides information to users based on where they are. It is used in apps like Google Maps, Uber, and delivery apps. It helps people find what's near them, like restaurants or shops. In this project, LBS helps users discover businesses and social places in their community. It also makes it easier for new visitors or residents to find their way around without asking lots of people for directions.

Technology Acceptance Model (TAM): TAM explains how people decide whether or not to use a new app or system. It says that users are more likely to use an app if:

- It is easy to use
- It is useful

This project follows TAM by making the app simple and helpful. Users can easily find things, switch to business mode, or save places they like. The design is made so that users don't need any special skills to use the app.

Conceptual framework

The app combines several important ideas into one system:

- Users can explore their community, save places, and share listings
- Business Owners can manage their business profile
- Admin can control everything using a dashboard

The app connects these roles using one shared database (Firebase). The frontend is built with Flutter for mobile users and React JS for the admin panel. Everything is location-based, so users can search or filter by the area they live in. The app also uses:

- Categories and communities for easy filtering
- Real-time data using Firestore
- Authentication to protect user accounts

By putting all of this into one system the app supports community development and digital inclusion (Laitinen et al., 2016).

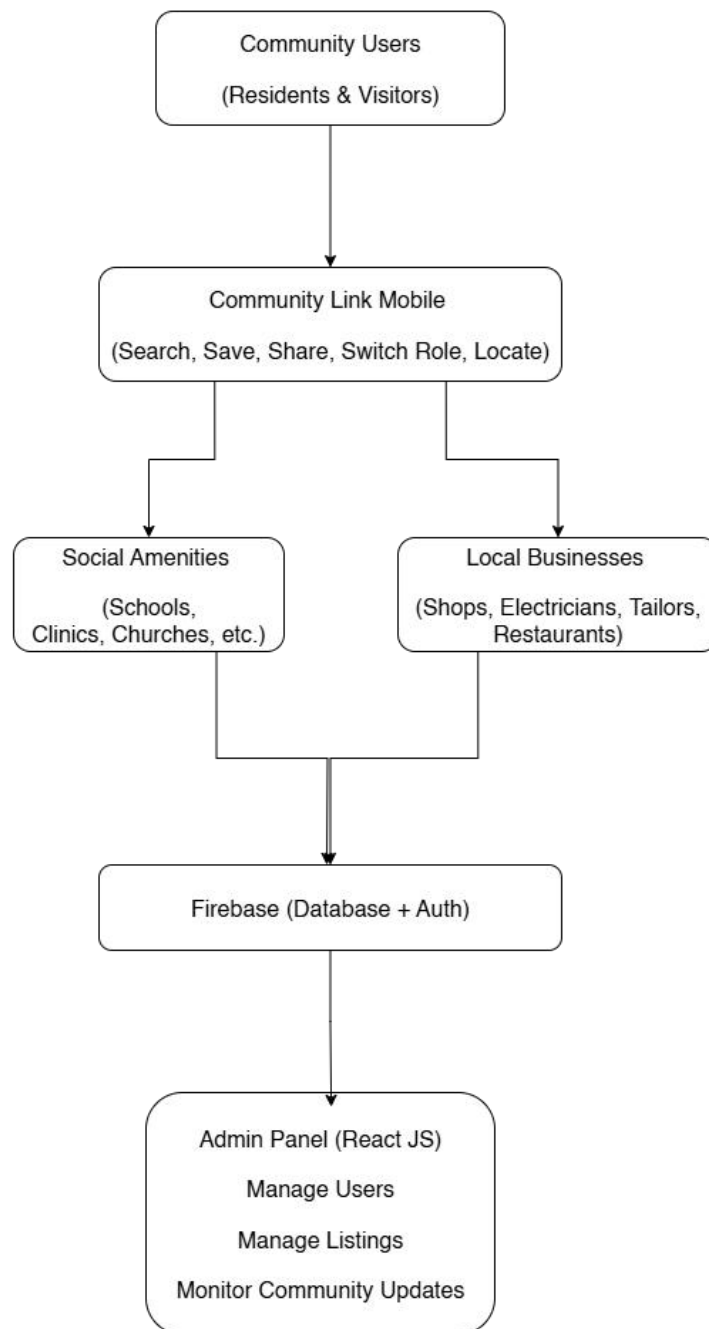


Figure 1: Conceptual Framework Diagram

Empirical review

Many mobile apps today help people find services and places. Here are a few examples and what they do well:

Google Maps:

- Google Maps is good for directions and finding well-known businesses (Google, n.d.)
- However, it often misses small or local businesses, especially in rural communities.
- It also doesn't focus on community places like schools or churches unless manually added (Kang & Lee, 2016).

Yelp:

- Yelp allows people to rate and review businesses (Yelp, n.d.) .
- It's popular in cities but not commonly used in smaller towns or African countries (Kang & Lee, 2016).
- It focuses only on businesses and not on social amenities.

Jiji Ghana:

- Jiji is mainly a marketplace, not a location-based business finder.
- It helps people find items or job listings but is not useful for locating services in a community.

GhanaPost GPS:

- This app helps with addresses and digital location pins.
- It doesn't list businesses or community places for easy search.

What They All Miss

- Most apps do not include both businesses and social places.
- Very few allow users to switch to a business account.
- Most don't have a proper admin dashboard to manage everything.
- Many are not beginner-friendly or do not work well on low-end devices.

Summary of literature

From all this research, it's clear that there's a gap in the market — especially in Africa and small communities. People need an easy-to-use, location-based app that shows everything from restaurants to hospitals and electricians in one place (Kumar et al., 2021; Cruz & Wong, 2020).

The CommunityLink app improves on these older systems by:

- Showing both social amenities and businesses
- Allowing users to switch to a business account and manage it
- Giving regular users the ability to save and share what they find
- Giving the admin full back-end control over categories, users, and listings

This project brings together the best ideas from existing systems while solving the problems they haven't addressed — making it more useful for everyday people and community development.

CHAPTER THREE: RESEARCH METHODS

Introduction

This chapter explains how the research and system development were carried out. It covers the study design, the group of people the system was built for, how features were selected, the tools used, how data was collected and tested, and how results were analyzed (Pressman & Maxim, 2014). Each step helped ensure that the final app was useful, simple, and focused on solving real community problems.

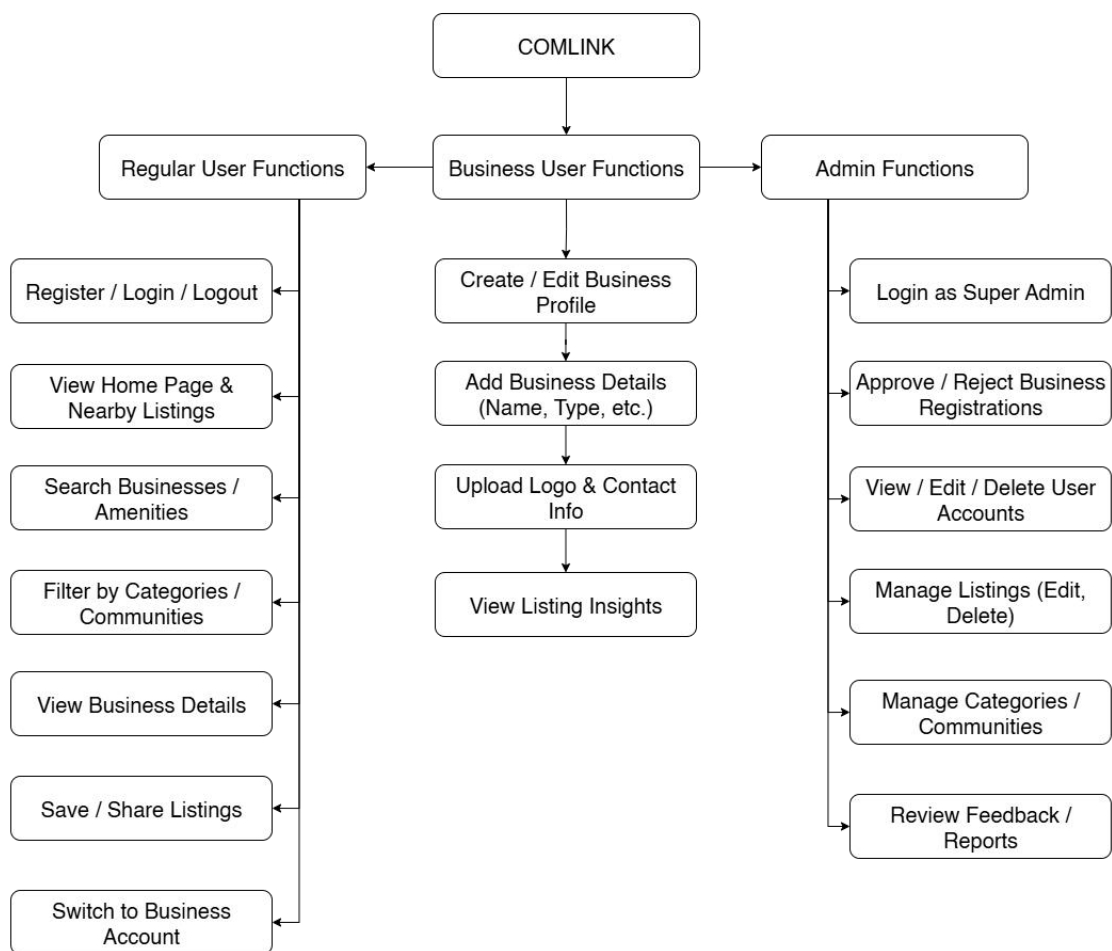


Figure 2: Functional Requirements Diagram

Study design

This project followed an action research design with a software development approach.

- The action research method was chosen because the project aimed to solve a real-life problem: helping people in local communities find businesses and amenities easily.
- The development cycle involved designing the app, testing each part, collecting feedback, and making improvements (Sommerville, 2011).
- The strength of this design is that it's flexible and allows for updates during development.
- The weakness is that it may not follow a strict structure like lab-based experiments.

Population

The population for this study includes three user types:

- Regular users — people in the community who want to find services like schools, hospitals, or businesses.
- Business owners — people who want to add and manage their business on the app.
- Super admin — the person who controls the app from the back-end using a dashboard.

Each user type has a different role, and the app gives them the right features to match their role.

Sample and sampling procedure

Instead of testing on real people, I picked the main features that users would need most and focused on building those (Preece et al., 2015). The main features chosen were:

- User registration and login
- Search by community and category
- Save/share business listings
- Switch to business account
- Admin dashboard to manage everything

These features were chosen because they solve common problems faced by people in communities — like finding a good school or a nearby electrician. Basic sample users were created to test these features, with different roles (regular, business, admin).

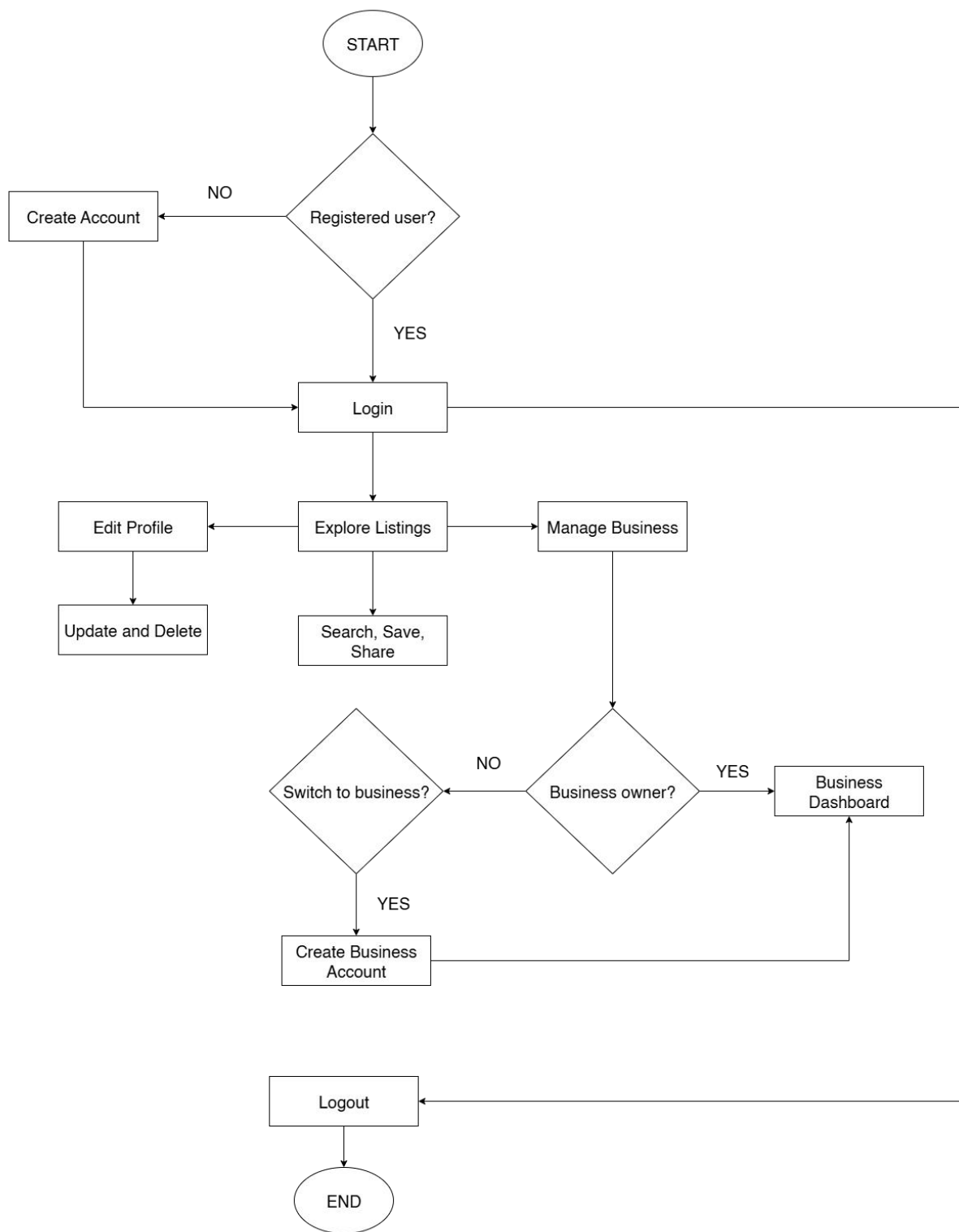


Figure 3: Decision Tree for System Flow Diagram

Instruments

In software-based research, the instruments are the tools and platforms used to build and test the system.

- Flutter was used for the mobile app (Flutter, n.d.)
- Firebase Authentication was used to manage user accounts (Firebase, n.d.)
- Cloud Firestore was the main database
- React JS was used for the admin dashboard
- Adobe XD was used for UI mock-ups
- GitHub for saving and tracking my code

Development & Testing of the Instrument:

- Interfaces were designed in Adobe XD and tested with dummy data.
- Each screen was built and linked to Firebase.
- Forms were validated to make sure users entered correct data.
- Firebase rules were tested to check user permissions.

Reliability & Validity:

- Firebase tools are widely used and trusted in the industry.
- Features were tested multiple times to ensure correct results.
- All functions (like saving a business or switching accounts) were checked manually.

Strengths of Tools:

- Fast and easy to test
- Real-time updates
- Secure authentication
- Cross-platform (works on Android and iOS)

Weaknesses:

- Requires internet connection
- May be hard for total beginners without training

Data collection and development

We collected ideas from community problems and similar apps. We created wire-frames, then built real screens with working buttons, forms, and database connections. Since this is a system-based project, “data” here means the app screens, user inputs, and saved actions.

- A pilot phase was done using test accounts.
- Screens were tested one at a time: Splash → Login → Home → Profile → Business → Admin
- Manual data entry was used to test Firebase collections (like categories, communities, businesses).
- Testing was done over a period of 3–4 weeks.
- No assistants were used — all tests were carried out by the developer.

Data analysis procedure

We tested the app by running through each feature and checking if it worked as expected. Bugs were fixed, and changes were made to improve the user experience.

- The Firebase console was used to track if users and business data were saved properly.
- Logs and snapshots were checked in real time.
- Flutter’s debug console was used to trace bugs or failed validations.
- Visual feedback (e.g. screen not loading, wrong button action) was used to spot problems.
- Each function (like saving a business or updating a profile) was tested at least 3 times.

We used the Flutter debug tool and Firebase console to check if the data showed up as expected. If something didn’t work, we went back and fixed it.

CHAPTER FOUR: RESULTS AND DISCUSSION

Introduction

This chapter shows the results of the project — what we built, how it worked, and how the different features performed. We'll explain the results based on the main goals and questions of the project. We'll also compare what we found to what other studies or systems have shown. In the end, We'll talk about the limitations of the project and areas that could be improved.

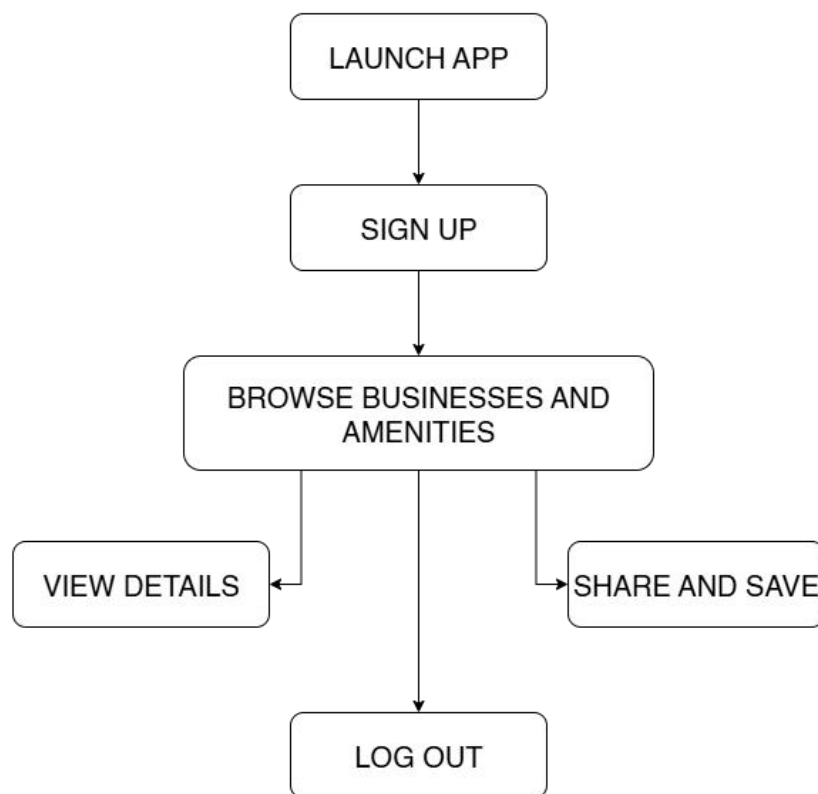


Figure 3: Regular User Flowchart

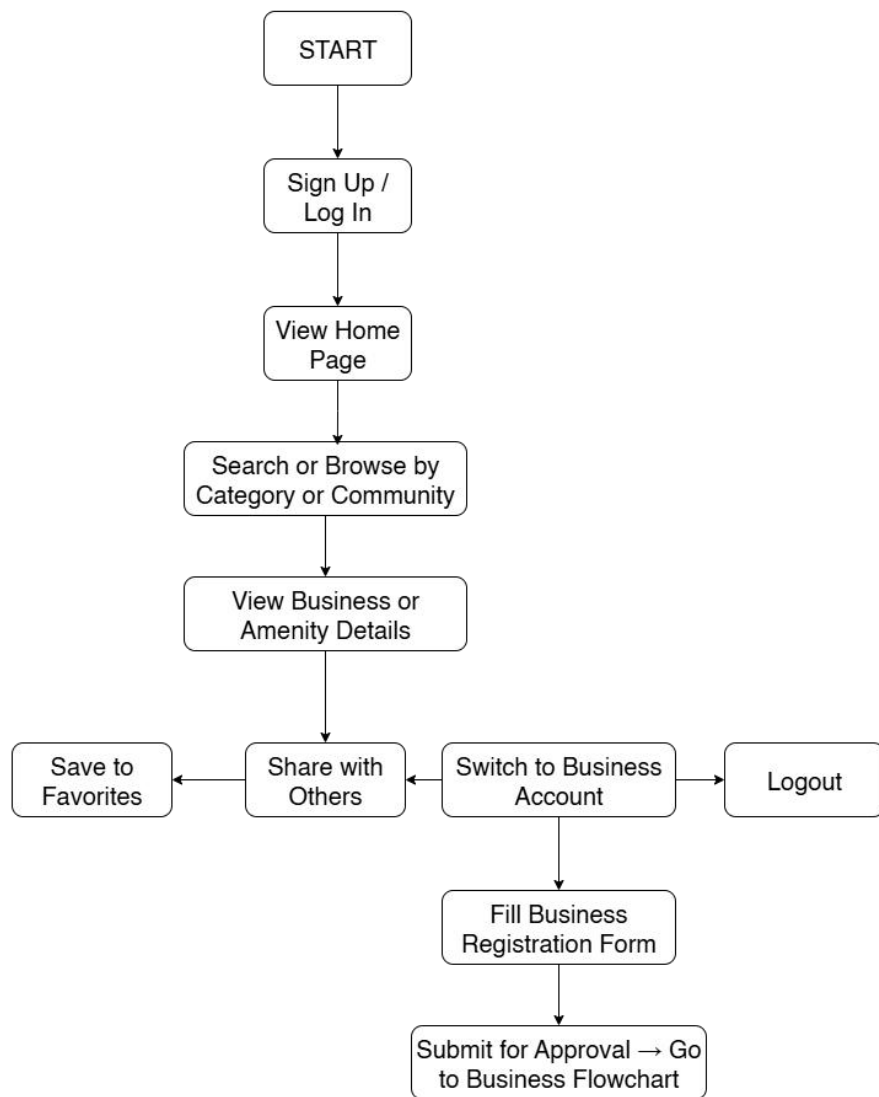


Figure 4: Business Owner Flowchart

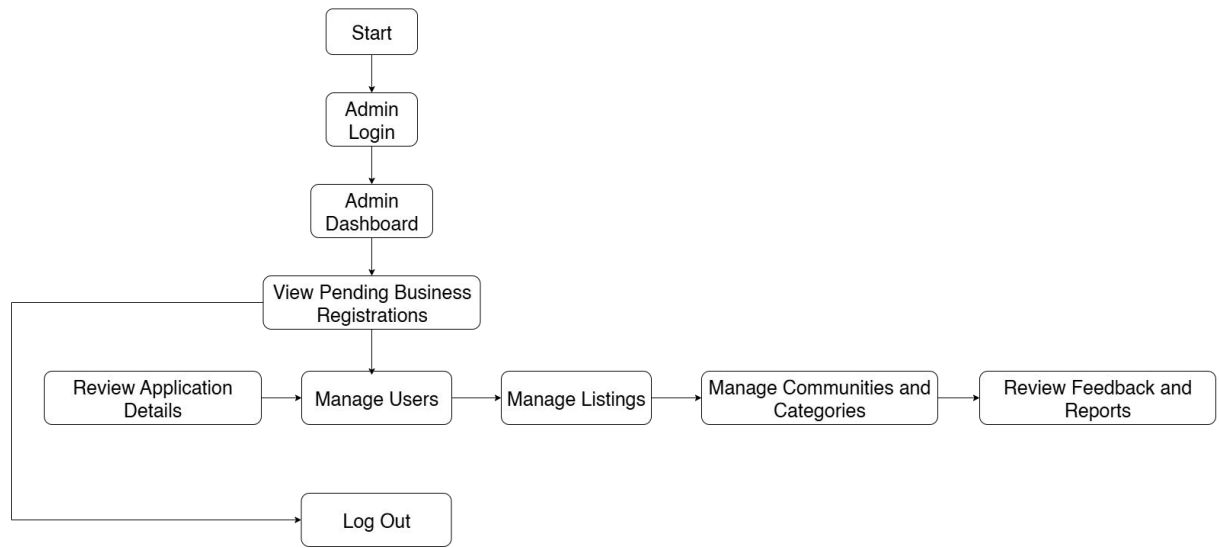


Figure 5: Super Admin Flowchart

Overview of features

- User Sign Up and Login
- Home Page with Search and Categories
- Save and Share Businesses (Parameswaran, 2015; Hassan et al., 2020)
- Switch to Business Account
- Business Management Page
- Admin Login and Dashboard

Results Based on Research Questions

Research Question 1:

How can we help users discover nearby services more easily?

Result: The mobile app allows users to find nearby businesses and places by selecting their community. They can also browse by category like schools, restaurants, hospitals, or electricians.

Discussion: This worked well during testing. Unlike apps like Google Maps which focus more on big businesses or cities, my app focused on the community level and included both social amenities and service providers. This supports the idea in the literature that location-based services (LBS) are powerful tools for helping users find useful information close to them.

Research Question 2:

Can a mobile app improve how businesses are found in local areas?

Result: Yes. Business owners can switch from regular user to business profile. They can then upload their business info, edit their description, and have it shown to users in that community.

Discussion: This part of the app empowers small businesses that usually don't get listed on popular platforms. Unlike Yelp, which mostly focuses on reviews and is more city-based, this

system gives full control to local business owners. This supports the Technology Acceptance Model (TAM) idea that when a system is useful and easy, users are more likely to adopt it.

Research Question 3:

What tools can be used to make the app fast, simple, and useful?

Result: The app was built using Flutter and Firebase, with React JS for the admin panel. Firebase made it easy to sync data in real time, while Flutter helped build the user interface for both Android and iOS.

Discussion: The tools used proved to be very effective. Firebase was especially helpful because of its real-time features and built-in security. The use of these tools also supports the conceptual framework of the project, which combined location awareness, user roles, and business management into one system.

Challenges faced

- Sometimes data did not sync properly
- Firebase rules needed to be tested carefully
- Making the UI clean for both regular and business users took time

Functional Testing

Functional testing was done to make sure all the main parts of the app worked as expected. It was based on what the app is supposed to do (its requirements), like signing in, registering businesses, switching accounts, and managing listings.

We tested each function one by one, to check if the right thing happens when users interact with it. Here's how the testing was done for each key area:

User Registration and Login

- Test if new users can sign up with email and password
- Check if existing users can log in successfully
- Check if wrong credentials show error messages

Switching Between User and Business Account

- Confirm that a regular user can switch to a business account
- Confirm that business users can access their business dashboard
- Make sure users who haven't registered a business can't access the dashboard

Business Registration

- Check if all required fields are filled before allowing registration
- Business info should save in the database
- Business must appear under the correct community

Listing and Discovery

- Users can search for nearby businesses and amenities
- Listings are grouped into categories like Schools, Hospitals, etc.
- Users can save, view, and share listings

Admin Dashboard

- Admin can log in using email/password
- Admin can see and manage all users and businesses
- Admin can delete inappropriate listings or ban users

Navigation and UI

- All buttons work and go to the correct pages
- All error messages show when needed (e.g., missing input)
- App responds well on different screen sizes

Table 1: Functional Testing – Test Case Table

| Functionality | Test Result |
|----------------------------|-------------|
| User Sign Up | Pass |
| User Login | Pass |
| Switch to Business Account | Pass |
| Business Registration | Pass |
| Listing Search | Pass |
| Save & Share Listings | Pass |
| Admin Login & Management | Pass |
| Error Handling | Pass |
| UI Navigation | Pass |
| Firebase Integration | Pass |

Limitations

Even though the system worked well overall, there were some limitations (Kumah et al., 2021):

Internal Validity (Design Limitations):

- This was a solo project with no formal user testing or large survey.
- Most features were tested manually using test accounts, not real people.

External Validity (Generalisation):

- The results work for the sample data used, but more testing would be needed to say it works for all communities or regions in Ghana.

Measurement Issues:

- There was no formal questionnaire or feedback tool, so user experience was measured informally.
- Firebase data was reliable, but some UI elements still needed polish.

Statistical Problems:

- No statistical software was used since this was a system build.
- Sample size was very small — mainly developer-created test data.
- No advanced statistical analysis was needed for the type of system tested.

Summary

In this chapter, I showed that the app meets its goals and supports what the literature says about using mobile apps and location tools for community problems. Even though there were some limitations, the system is useful and can be improved with more testing, user feedback, and new features in the future.

CHAPTER FIVE SUMMARY, CONCLUSION AND RECOMMENDATION

Summary of the study

This project was about solving a common problem in communities — not knowing where to find businesses or important places like schools or hospitals. We designed and built a mobile app called CommunityLink that helps people easily discover both social amenities and local service providers based on their location. The app allows users to:

- Sign up and log in
- View businesses and services by community
- Save or share favorite places
- Switch to a business account
- Manage business information

The admin dashboard (built using React JS) lets the super admin manage categories, communities, users, and businesses. Firebase was used to store and sync all the data in real time. The project followed a simple software development process — from designing, building, testing, and improving the app features..

Conclusion

Based on the results of this project, here are the main conclusions:

- Location-based apps really help people find what they need in their area, especially if the app is designed for their community (Kumar et al., 2021; World Bank, 2022).
- Giving business owners control over their own listings makes it easier for small businesses to be discovered.
- Using modern tools like Flutter and Firebase makes the system fast, simple, and secure.
- A single admin account is enough to manage the system, but more roles can be added later.
- The app fills a gap that existing systems like Google Maps and Yelp don't cover, especially in smaller towns and local communities.

Recommendation

Here are some ways to improve the project in the future:

- Add more admins or moderators to help manage data in bigger communities (Björk et al., 2009; Ghosh, 2018).
- Allow users to review and rate businesses for better feedback.
- Give business owners the option to post news or promotions.
- Add a map view to show exactly where places are.
- Improve offline support, so some features work without internet.
- Collect feedback from real users through a survey or in-app form to improve the design.

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APPENDIX

Appendix A: Firebase Firestore Database Schema

Collections and Key Fields

Users

- uid (string)
- name (string)
- email (string)
- avatarUrl (string)
- accountType (string: 'regular' or 'business')
- savedItems (array of business IDs)
- communityId (string)

Businesses

- businessId (string)
- name (string)
- ownerId (string)
- categoryId (string)
- communityId (string)
- profileImageUrl (string)
- phone (string)
- description (string)
- createdAt (timestamp)

Categories

- categoryId (string)
- name (string)
- iconUrl (string)

Communities

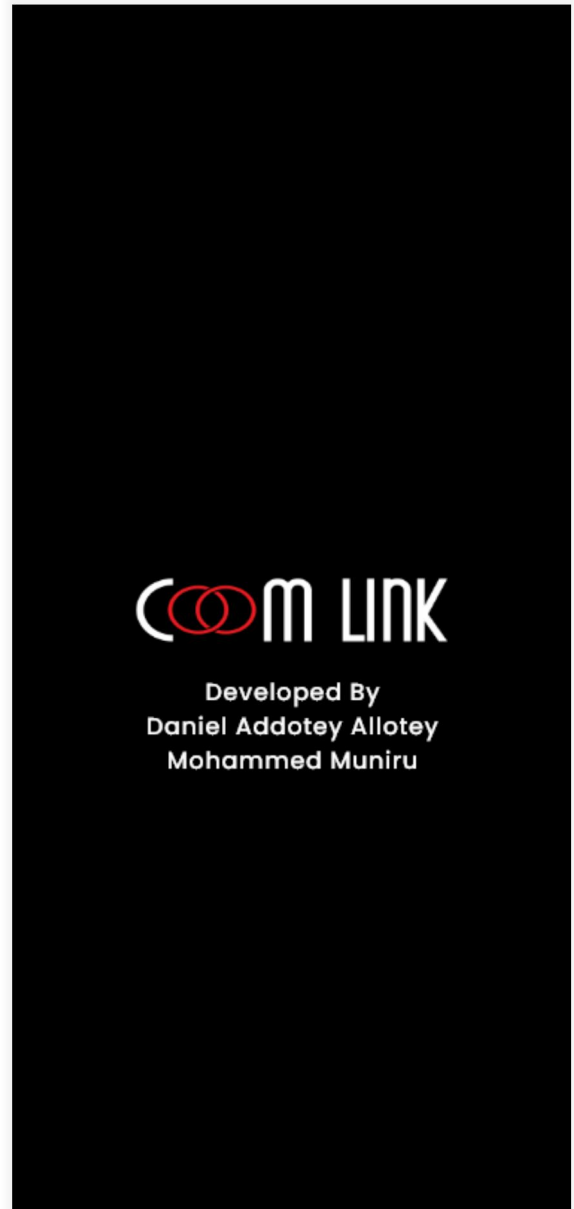
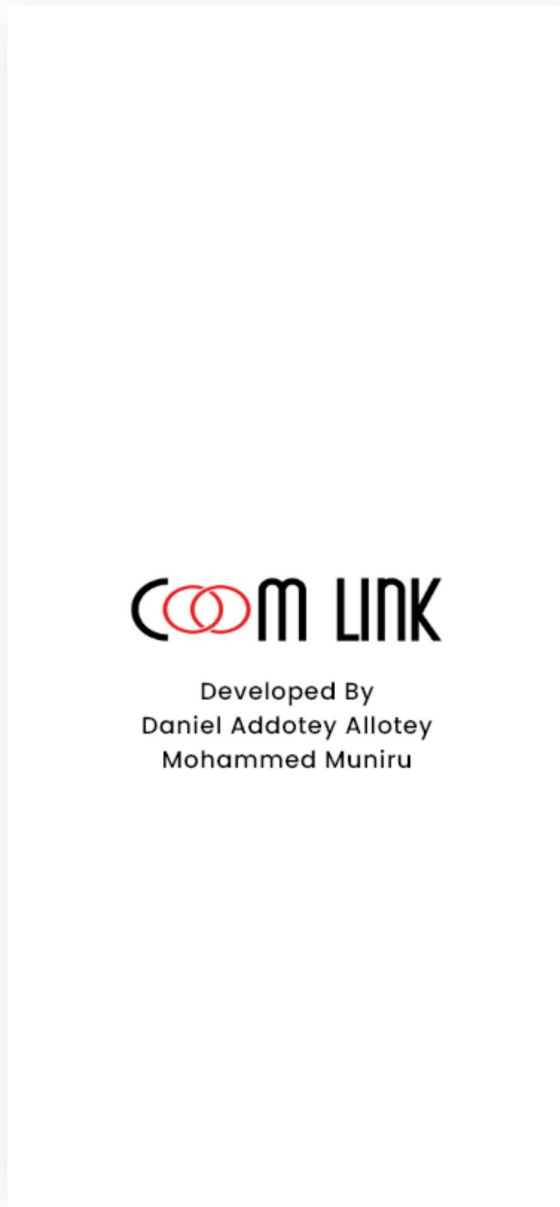
- `communityId` (string)
- `name` (string)

Admins


- `uid` (string — hardcoded in the React app for Super Admin access)

Appendix B: Screenshots of App Pages

Splash Screen



User Login and Sign Up Screens

ComLink


Log in

Email


Password

Submit

or

 Continue With Google

Don't have Account

 Back

Create an Account

Full Name

Phone

Email Address

Location

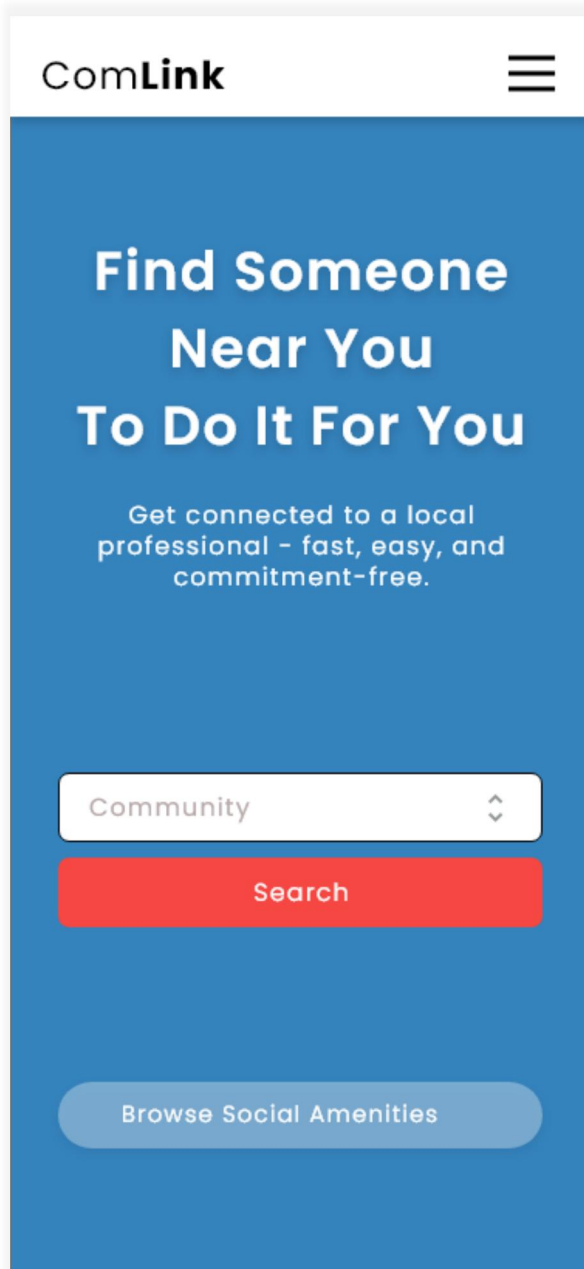
Password

Confirm Password

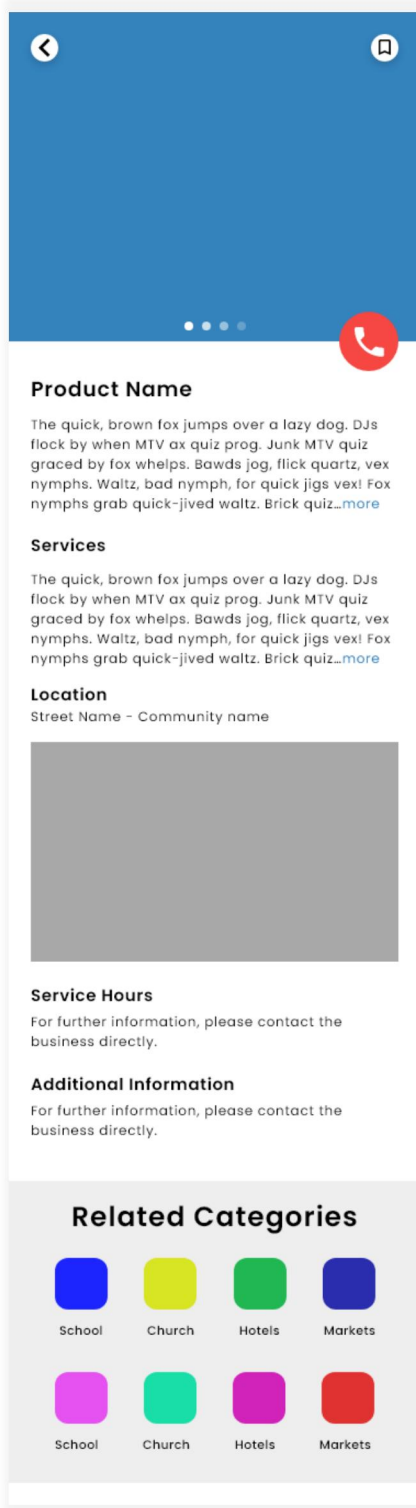
☐ By checking this box, I agree the above phone number is accurate and may be used to contact me by a live, automated, pre-recorded, or artificial voice call, SMS text and/or email. By clicking "Submit" you agree to our [Terms & Conditions](#) and [Privacy Policy](#).

Submit

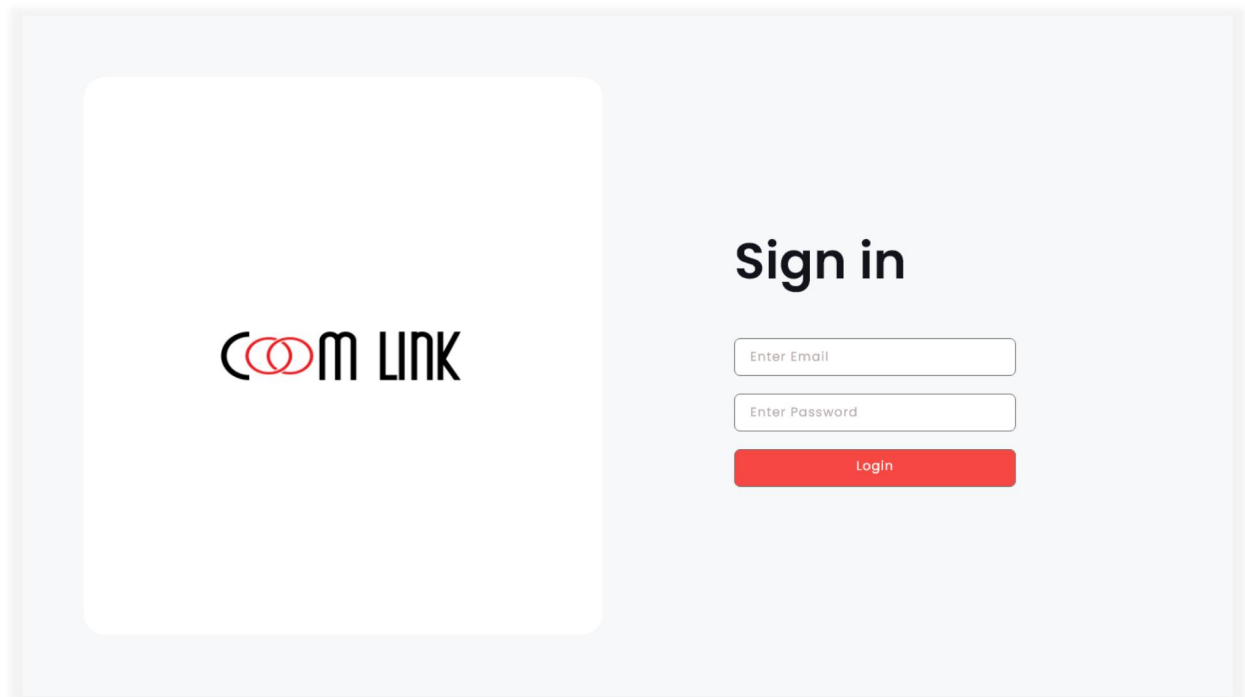
Home Page



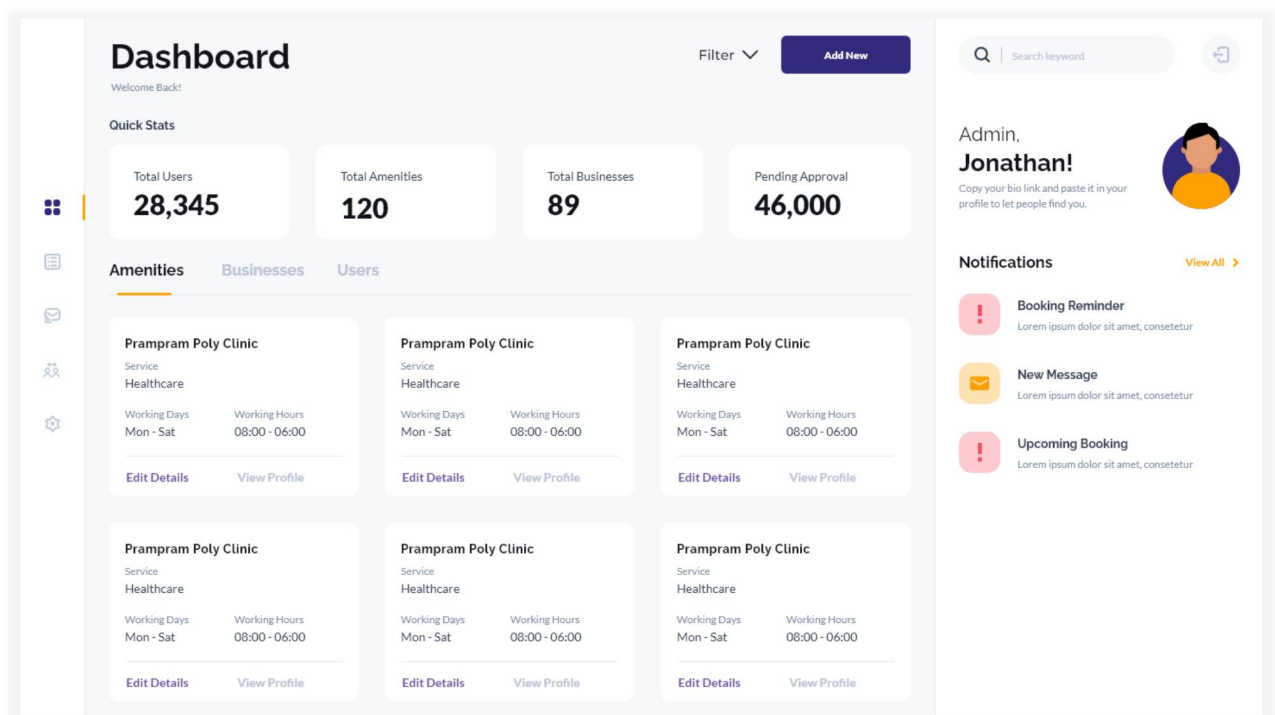
Business Detail Page



Admin Login Page (React Admin Panel)



Admin Dashboard



Pending Approvals

Welcome Back!

Filter
Add New

Search keyword

Quick Stats

| | | | |
|------------------------------|-------------------------------|-------------------------------|-----------------------------------|
| Total Users 28,345 | Total Amenities 120 | Total Businesses 89 | Pending Approval 46,000 |
|------------------------------|-------------------------------|-------------------------------|-----------------------------------|

AmenitiesBusinesses


Prampram Poly Clinic
Service Healthcare
Working Days Mon - Sat Working Hours 08:00 - 06:00
AcceptDecline

Prampram Poly Clinic
Service Healthcare
Working Days Mon - Sat Working Hours 08:00 - 06:00
AcceptDecline

Prampram Poly Clinic
Service Healthcare
Working Days Mon - Sat Working Hours 08:00 - 06:00
AcceptDecline

Admin,
Jonathan!

Copy your bio link and paste it in your profile to let people find you.



NotificationsView All

- Booking Reminder**
Lorem ipsum dolor sit amet, consetetur
- New Message**
Lorem ipsum dolor sit amet, consetetur
- Upcoming Booking**
Lorem ipsum dolor sit amet, consetetur

[illegible]

Communities

Welcome Back!

Filter ▾
Add New

Quick Stats

Total Users
28,345

Total Amenities
120

Total Businesses
89

Pending Approval
46,000

| REGION | MMDA | COMMUNITY | ACTIONS |
|---------------|-------------------|-------------|---------|
| Greater Accra | Tema Metropolitan | Community 1 | |
| Greater Accra | Tema Metropolitan | Community 1 | |
| Greater Accra | Tema Metropolitan | Community 1 | |
| Greater Accra | Tema Metropolitan | Community 1 | |
| Greater Accra | Tema Metropolitan | Community 1 | |
| Greater Accra | Tema Metropolitan | Community 1 | |
| Greater Accra | Tema Metropolitan | Community 1 | |
| Greater Accra | Tema Metropolitan | Community 1 | |
| Greater Accra | Tema Metropolitan | Community 1 | |

Admin,
Jonathan!

Copy your bio link and paste it in your profile to let people find you.

Notifications

View All →

Booking Reminder
 Lorem ipsum dolor sit amet, consetetur

New Message
 Lorem ipsum dolor sit amet, consetetur

Upcoming Booking
 Lorem ipsum dolor sit amet, consetetur

[illegible]

Appendix C: Code Snippets

Super Admin UID Configuration (React App)

```
export const SUPER_ADMIN_UID = "eMdkTSzpHqTEXTAMPLEyqtYXc";
```

Protecting Routes Based on UID

```
if (auth.currentUser.uid === SUPER_ADMIN_UID) {  
  navigate("/admin-dashboard");  
} else {  
  navigate("/login");  
}
```

Firebase Authentication Setup

```
import { initializeApp } from "firebase/app";import { getAuth } from  
"firebase/auth";  
  
const firebaseConfig = {  
  apiKey: "...",  
  authDomain: "...",  
  projectId: "...",  
  storageBucket: "...",  
  messagingSenderId: "...",  
  appId: "..."  
};  
  
const app = initializeApp(firebaseConfig);export const auth = getAuth(app);
```

Get User's Current Location

```
import 'package:geolocator/geolocator.dart';

Future<Position> getCurrentLocation() async {

  bool serviceEnabled = await Geolocator.isLocationServiceEnabled();

  LocationPermission permission = await Geolocator.checkPermission();

  if (!serviceEnabled || permission == LocationPermission.denied) {
    permission = await Geolocator.requestPermission();
  }

  return await Geolocator.getCurrentPosition(
    desiredAccuracy: LocationAccuracy.high,
  );
}
```

Show Toast Message (Feedback to User)

```
import 'package:fluttertoast/fluttertoast.dart';

void showToast(String message) {
  Fluttertoast.showToast(
    msg: message,
    toastLength: Toast.LENGTH_SHORT,
    gravity: ToastGravity.BOTTOM,
  );
}
```

Check If User Has a Business Listing

```
Future<bool> hasBusinessListing(String uid) async {
  final result = await FirebaseFirestore.instance
    .collection('businesses')
    .where('ownerId', isEqualTo: uid)
    .get();

  return result.docs.isNotEmpty;
}
```


Image Upload to Firebase Storage

```
import 'package:firebase_storage/firebase_storage.dart';  
  
import 'dart:io';  
  
Future<String> uploadImage(File imageFile, String path) async {  
  final ref = FirebaseStorage.instance.ref().child(path);  
  await ref.putFile(imageFile);  
  return await ref.getDownloadURL();  
}
```

Search Businesses by Name or Category

```
Stream<QuerySnapshot> searchBusinesses(String keyword) {  
  return FirebaseFirestore.instance  
    .collection('businesses')  
    .where('name', isGreaterThanOrEqualTo: keyword)  
    .where('name', isLessThanOrEqualTo: keyword + '\uf8ff')  
    .snapshots();  
}
```

Cloud Firestore Rules

```
rules_version = '2';

service cloud.firestore {

  match /databases/{database}/documents {

    // ----- USERS -----

    match /users/{uid} {

      allow read, write: if request.auth != null && request.auth.uid == uid;

    }

    // ----- BUSINESSES -----

    match /businesses/{businessId} {

      allow read: if true;

      allow create: if request.auth != null && request.auth.uid == businessId;

      allow update, delete: if request.auth != null &&

        (request.auth.uid == businessId ||

         request.auth.uid == resource.data.ownerId);

    }

    // ----- AMENITIES -----

    match /amenities/{docId} {

      allow read: if true;

      allow write: if request.auth != null &&
```

```

        request.auth.uid == "5SP3BuxRFJVxmDVvsZpKSEutEtT2";
    }

    // ----- SUPER ADMIN BACK-DOOR -----

    match /{path=**} {

        allow read, write: if request.auth != null &&

            request.auth.uid == "5SP3BuxRFJVxmDVvsZpKSEutEtT2";

    }

}
}
}

```

Flutter Dependencies

dependencies:

```

flutter:
  sdk: flutter

```

The following adds the Cupertino Icons font to your application.

Use with the CupertinoIcons class for iOS style icons.

```
cupertino_icons: ^1.0.8
```

```
firebase_core:
```

```
firebase_auth:
```

```
cloud_firestore:
```

```
adobe_xd:
```

```
flutter_native_splash:
```

```
google_fonts:
```

```
flutter_svg:
```

```
path_provider:
```

```
connectivity_plus:
```

```
google_sign_in:
```

Initialize Firebase Web Debugging

```
Future<void> _initializeFirebase() async {
  if (kIsWeb) {
    await Firebase.initializeApp(
      options: const FirebaseOptions(
        apiKey: "AIzaSyB1nKRhCYn-q-KsegkerzJxgpL8tZhQCks",
        authDomain: "final-year-project---comlink.firebaseio.com",
        projectId: "final-year-project---comlink",
        storageBucket: "final-year-project---comlink.appspot.com",
        messagingSenderId: "270279405346",
        appId: "1:270279405346:web:4cf5b2d46e6c29515e3f7b",
        measurementId: "G-X5R261LDYW",
      ),
    );
  } else {
    await Firebase.initializeApp();
  }
}
```