"QuickFixx: Professionals at your doorstep"
Second-year Mini Project Report

Submitted in partial fulfillment of the requirements of the

degree

**BACHELOR OF ENGINEERING IN COMPUTER
ENGINEERING**

By

Sarang Pavanaskar (51)

Tanmay Maity (42)

Akshat Mahajan (40)

Harsh Saindane (53)

Supervisor

Prof. Sunita Suralkar

Department of Computer Engineering

Vivekanand Education Society's Institute of Technology

HAMC, Collector's Colony, Chembur,

Mumbai-400074

University of Mumbai

(AY 2023-24)

CERTIFICATE

This is to certify that the Mini Project entitled " **QuickFixx: Professionals at your doorstep** " is a bonafide work of **Sarang Pavanaskar (51), Tanmay Maity (42), Akshat Mahajan (40), Harsh Saindane (53)** submitted to the University of Mumbai in partial fulfillment of the requirement for the award of the degree of **"Bachelor of Engineering"** in **"Computer Engineering".**

(Prof. <u>Sunita Suralkar</u>)

Supervisor

(Prof. <u>Dr. Nupur Giri</u>)   **(Prof. <u>Dr. J.M Nair</u>)**

Head of Department   Principal

Mini Project Approval

This Mini Project entitled **"QuickFixx: Professionals at your doorstep"** by **Sarang Pavanaskar (51), Tanmay Maity (42), Akshat Mahajan (40), Harsh Saindane (53)** is approved for the degree of **Bachelor of Engineering** in **Computer Engineering.**

Examiners

1………………………………
(Internal Examiner Name & Sign)

2………………………………
(External Examiner name & Sign)

Date:

Place:

Contents

Abstract

QuickFixx: Professionals at your doorstep is a mobile application designed to address the challenge of accessing essential services efficiently in tier 2 and tier 3 cities. Utilizing Kotlin Jetpack Compose for frontend development and Spring Boot with Firebase, and MySQL for backend support, QuickFixx connects users with local service providers such as electricians, carpenters, plumbers, and housekeepers. The key functionalities include user authentication, service selection, service provider profiles, and real-time communication, prioritizing simplicity and user experience. The future enhancements include advanced navigation, live tracking, payment gateway integration, and image uploading for precise task descriptions. This platform aims to bridge the gap between users and unorganized service businesses, fostering economic growth and connectivity within communities while contributing to the sustainable goal of Industry, Innovation, and Infrastructure.

Acknowledgments

1. Introduction

1.1 Introduction:

QuickFixx: Professionals at your doorstep is a dynamic mobile application designed to revolutionize how users connect with skilled professionals in their locality. This user-friendly platform directly links individuals with service providers, streamlining service delivery and personalizing assistance. By utilizing UI tool kits such as Figma, Jetpack Compose, and Kotlin language for Frontend, and SpringBoot framework for backend along with Firebase, MySQL, and APIs, we have developed this mobile application to meet the modern needs of users. This app not only focuses on giving quick and personalized help but also supports local businesses in the modern digital age. The application aims to create a common platform for users to connect with skilled service providers such as plumbers, electricians, carpenters, and housekeepers that are required in their day-to-day lives. It is expected that both users and service providers undergo login procedures in our app where the skilled experts need to submit essential information such as qualifications and proofs for their practicing job. Users can navigate through different sections of the app to book any expert from a list of available experts for any service. Service providers need to accept or reject the service based on their availability.

1.2 Motivation:

The motivation behind the creation of the "QuickFixx" app is rooted in the recognition of the challenges that individuals often face when searching for reliable service providers. The traditional process of finding and hiring such professionals can be time-consuming and frustrating, often involving multiple phone calls and unpredictable service quality. "QuickFixx" aims to simplify and streamline this process, offering users the convenience of locating nearby service providers with ease, while also ensuring the quality and reliability of the services they receive.

1.3 Problem Statement & Objectives:

The problem lies in the lack of a unified platform that would enable users to discover, book, and interact with a wide range of services, from household repairs and maintenance to personal care and professional services. This process is often time-consuming and laborious, requiring extensive searches and inquiries on the part of the user.

To address this issue, we have developed a solution that involves building a mobile application based on Microservices Architecture. Each module, such as Electrician, Carpenter, Plumber, and Housekeeping, is implemented individually.

Users after signing up can navigate through the app looking for the services they need, choosing from a list of service providers, and booking them based on their profile and rating. Once a service is booked, a notification is sent to the respective service provider, who upon acceptance, triggers a confirmation message to the user.

1.4 Organization of the Report:

The project report is organized in the following order:

1. **Literature Survey**:

   1.1 <u>Survey of Existing System</u>:

   - Summary of the existing system (UrbanClap) and its success factors.

   - Discussion on the registration process for users and service providers.

1.2 <u>Limitations of the Existing System or Research Gap</u>:

- Identification of the limitations of the existing system, forming the basis for the research gap.

- Discussion on the geographical restriction, delayed service, employment overhead, and missed opportunities for local professionals. 2.3 Mini Project Contribution:

- Overview of the contributions of the proposed QuickFixx project in addressing the research gap and overcoming the limitations of the existing system.

2. **Proposed System:**

2.1 <u>Introduction</u>:

- Overview of the proposed methodology for QuickFixx.

2.2 <u>Architecture/Framework</u>:

- Description of the microservices architecture employed in QuickFixx.

2.3 <u>Algorithm and Process Design:</u>

- Explanation of the algorithms and processes involved in the functioning of QuickFixx.

2.4 <u>Details of Hardware & Software</u>:

- Detailed specifications of the hardware and software required for developing and running QuickFixx.

2.5 <u>Experiment and Results</u>:

- Summary of any experiments conducted and the corresponding results.

2.6 <u>Conclusion and Future Work</u>:

- Conclusion summarizing the key aspects of the proposed system.

- Discussion on potential future enhancements and developments for QuickFixx.

3. **Conclusion**:

- Overall conclusion highlighting the significance of QuickFixx in addressing the identified research gap and limitations of the existing system.

- Emphasis on the potential impact and prospects of QuickFixx in the on-demand service industry.

4. **References**:

Citations of all the sources referenced in the report.

2 Literature Survey

2.1 Survey of Existing System:

The research paper highlights UrbanClap's success in meeting the rising demand for on-demand services, showing it's a profitable market for similar ventures. UrbanClap faced challenges in keeping both service providers and customers satisfactory, emphasizing the need for strategies to ensure satisfaction for everyone involved. By using technology like AI and data analysis, UrbanClap matched customers with suitable service providers, making operations more efficient. Despite difficulties, UrbanClap expanded carefully, focusing on key markets while maintaining service quality. It also built trust with customers and service providers through quality assurance measures and social initiatives. UrbanClap's success shows the importance of meeting specific market needs, like convenient and reliable home services, inspiring other businesses to do the same. The success story of UrbanClap inspires us to consider tapping into the growing demand for on-demand services. By focusing on customer satisfaction and leveraging technology, we can create a similar venture that addresses specific market needs effectively. UrbanClap's strategic expansion approach and commitment to quality assurance serve as valuable lessons for us, encouraging careful planning and gradual growth. Additionally, UrbanClap's emphasis on building trust with both customers and service providers motivates us to prioritize establishing a strong brand reputation and fostering community trust in our venture [4].

The paper discusses a registration process for both users and service providers, highlighting the importance of user authentication and authorization. Implementing secure registration and login mechanisms is crucial for protecting user data and ensuring system integrity. This aspect inspires developers to prioritize security measures in their applications. The system allows service providers to register and add their details, which are then accessible to users. Managing service provider information, including contact details and service offerings, is essential for connecting users with the right service providers efficiently. This aspect inspires developers to design user-friendly interfaces for service provider management and seamless integration with user-facing modules. The paper outlines an admin module for managing users, services, and service providers. Admin functionalities include modifying, adding, or deleting services/providers and mapping users with providers. This inspires developers to incorporate robust admin panels with comprehensive control over system operations, ensuring smooth functioning and efficient resolution of issues. The system allows users to provide feedback and complaints about services and service providers. Admins can then take necessary actions based on this feedback. This inspires developers to integrate feedback mechanisms and complaint management systems into their applications to improve service quality continually [5].

2.2 Limitation of Existing system or research gap:

The limitations of the existing system provide the foundation for the research gap that "QuickFixx" aims to address including:

 2.2.1 Geographical Restriction: A notable research gap exists in the lack of service platforms that cater to users in smaller cities, towns, and remote areas. The existing system's focus on large urban centers leaves a significant portion of the population underserved.

2.2.2 Delayed Service: The need for advance appointments may result in delayed services, which is a drawback for users requiring immediate assistance.

2.2.3 Employment Overhead: The Business and Employment model used by the existing system involves the hiring of service professionals as employees.

This approach can lead to higher overhead costs, making it less adaptable and cost-effective.

2.2.4 <u>Missed Opportunity for Local Professionals</u>: A considerable gap lies in the underutilization of the skills of local service professionals who can offer part-time services, and may not be part of the existing system's employee structure.

2.3 Mini Project Contribution:

The proposed "QuickFixx" project aims to bridge the existing research gap and address the limitations of the conventional system. Its contributions are as follows:

- <u>Microservices Architecture Implementation</u>: The project employs a microservices architecture, allowing for separate development, deployment, and scaling of each service, ensuring smooth communication and access for users while enhancing reliability and adaptability.

- <u>Enhancing Convenience</u>: The project aims to enhance convenience by providing a reliable platform for service delivery, making it easier for users to access essential services efficiently.

- <u>Seamless Onboarding Experience</u>: The implementation of user registration options such as email/phone number registration or login via Google accounts ensures a seamless onboarding experience for users.

- <u>Comprehensive Service Selection</u>: Users can navigate the platform to discover and select desired services from a comprehensive list, providing them with a wide range of options.

- <u>Curated Service Provider Lists</u>: Upon selecting a service, users are presented with a curated list of verified service providers specializing in the chosen service, facilitating informed decision-making.

- <u>Detailed Profiles and Booking Options</u>: Users can access detailed profiles of individual service providers, enabling them to enter problem descriptions and book services directly through the platform, streamlining the booking process.

- <u>Effective Communication</u>: The platform facilitates communication between users and service providers through an in-app call feature, enabling them to schedule time slots and detail job descriptions efficiently.

- <u>Transformational Solution for Tier 2 and Tier 3 Cities</u>: "QuickFixx" emerges as a transformative solution addressing the challenges of accessing essential services efficiently, particularly in Tier 2 and Tier 3 cities, fostering economic growth and connectivity within communities.

# 3 Proposed System

3.1 Introduction:

The proposed methodology states a systematic process for facilitating user interactions with service providers through a digital platform- a mobile application. It begins with user registration, offering options such as email/phone number registration or login via Google accounts, ensuring a seamless onboarding experience. Similarly, service providers undergo a registration process, wherein essential documents and certificates are submitted to establish credibility, with a subsequent administrative review for approval. Users navigate the platform, either through a search bar or the home feed, to discover and select desired services from a comprehensive list. Upon selecting a service, a curated list of verified service providers specializing in the chosen service is presented. Following selection, users can access detailed profiles of individual service providers, enabling them to enter problem descriptions and book services directly through the platform. Once a service is booked, notifications are sent to the respective service provider, who upon acceptance, triggers a confirmation message to the user, initiating further communication channels such as in-app chat and call features. These features facilitate seamless communication between them for scheduling time slots and detailing job descriptions. Then the service provider visits the user's location to perform the requested service, resulting in the user providing feedback and ratings, thus providing a transparent and accountable customer-service ecosystem.

3.2 Architecture/ Framework:
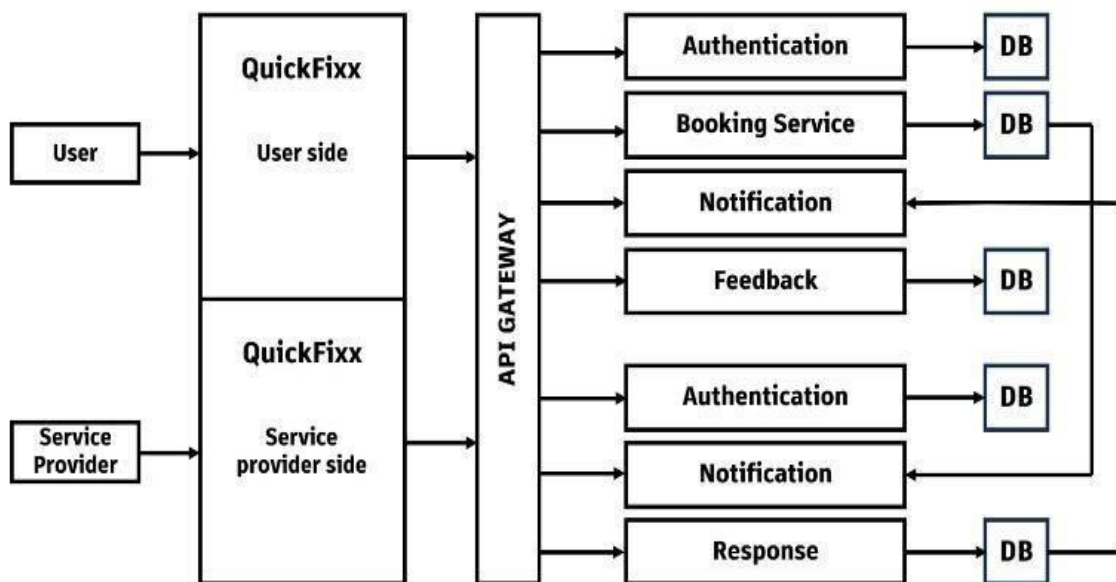
Microservices Architecture of QuickFixx

3.3 Algorithm and Process Design:
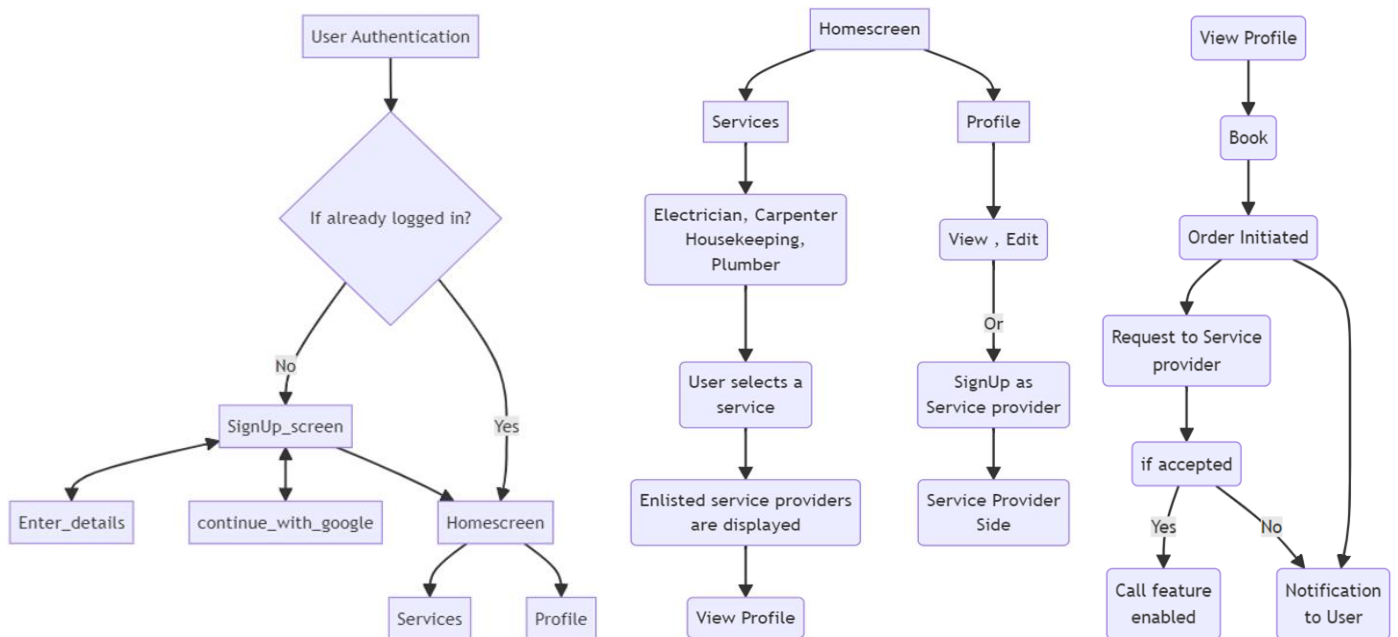
## 3.4 Details of Hardware & Software:

Hardware:

1. Smartphone: Android device for testing the Android version of the "QuickFixx" mobile app.

2. PC with the following configuration:

   - Processor: Intel Core i5 processor.

   - RAM: Minimum 8GB RAM for multitasking and running development tools efficiently. 16GB or more is recommended for better performance.

   - Storage: Solid-state drive (SSD) with at least 256GB of storage for faster application loading.

   - Graphics: Integrated graphics are sufficient for development tasks.

   - Operating System: Windows 10 or macOS for development compatibility with required software.

Software:

1. Figma: We commenced our development process by crafting page designs using Figma, offering a comprehensive preview of our app's interface.

2. Frontend: The whole Android app is built using Kotlin and Android Studio's Jetpack compose library. The setup for this was done by installing Android Studio [6].

3. <u>Backend:</u> Spring boot is a Java-based web framework wherein the Electrician, Carpenter, Plumber, and Housekeeping services are written using this framework. It is mostly used to create microservices [8].

4. <u>Firebase:</u> Used Firebase's authentication support to authenticate the user using Google support. The logged-in user data is stored in Firebase's database called Firestore [7].

5. <u>Kafka</u>: For order management.

6. <u>Twilio</u>: For message service.

7. <u>Database</u>: MySQL

3.5 Experiment and Results:
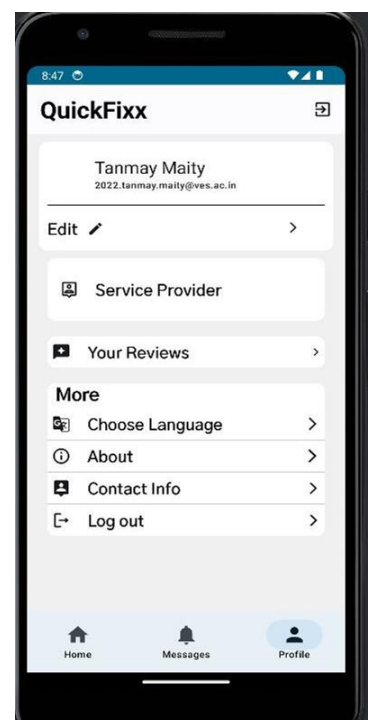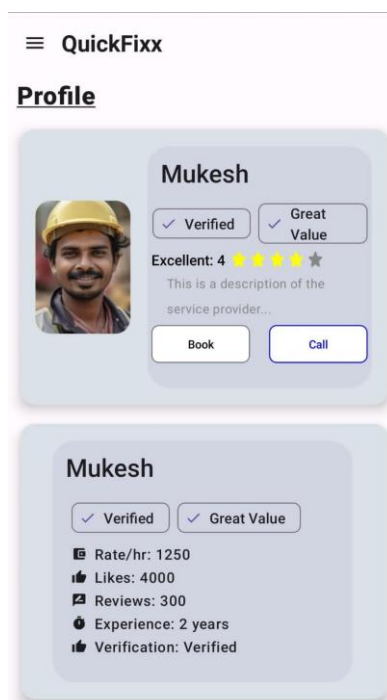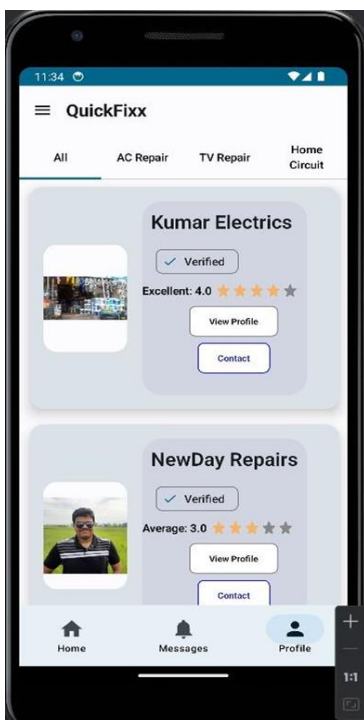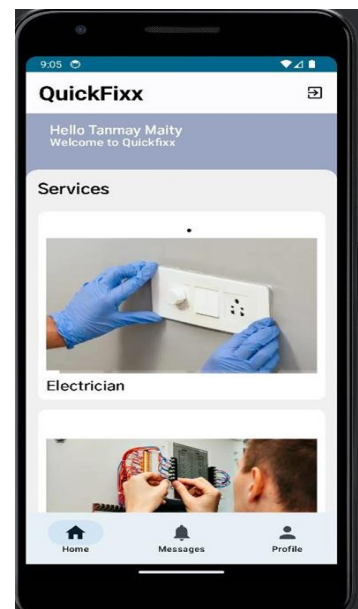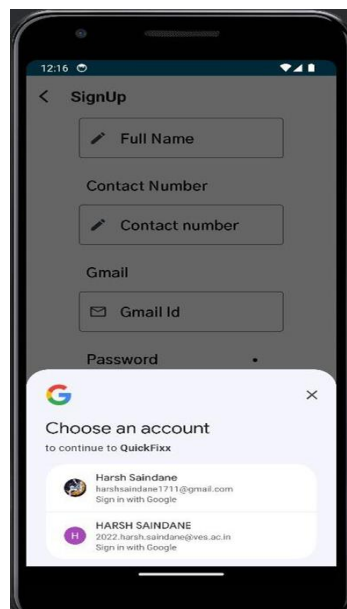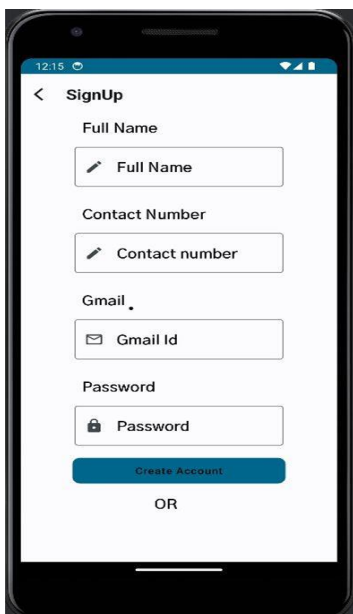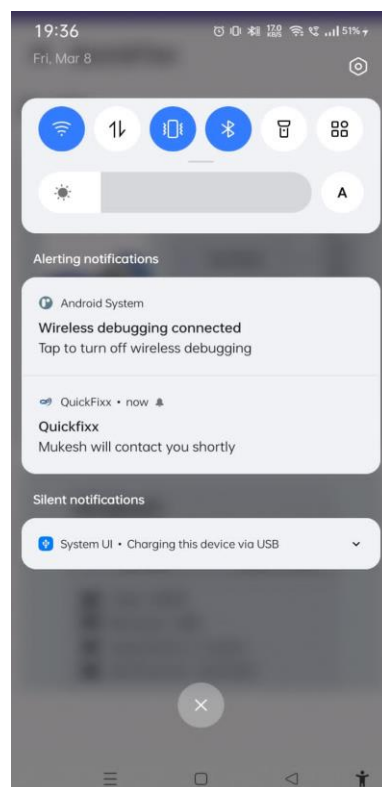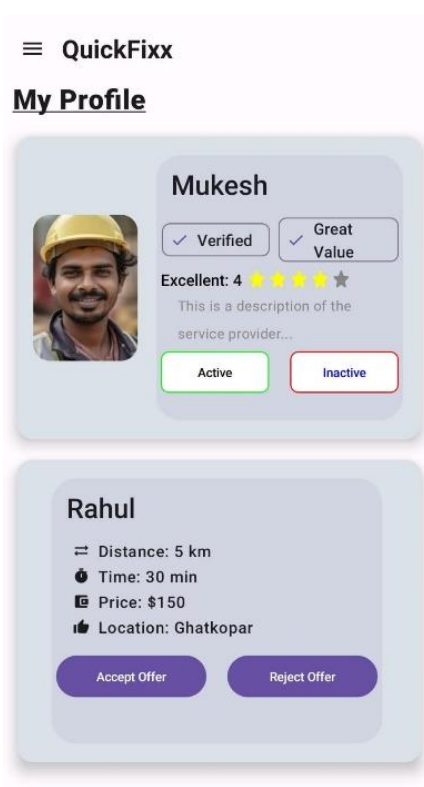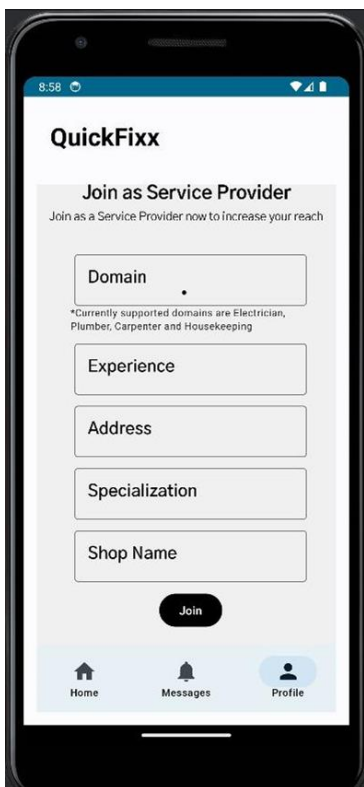
4 Conclusion and Future Work

In our app, we have implemented services like electrician, carpenter, housekeeping, and plumber. Following the microservices architecture, we created each service as an individual microservice module. These microservices are designed to operate independently, allowing for separate development, deployment, and scaling of each service. This architecture ensures smooth communication and access for users, enhancing the reliability and adaptability of our service delivery. By employing microservices, we've created a system where individual modules can function autonomously, reducing the impact of technical issues on the overall app. Even if one service experiences problems, users can seamlessly switch to alternative services without disruption. This setup enhances our platform, ensuring consistent service availability regardless of temporary issues or maintenance work.

The microservices architecture that forms the base of our mobile application has great potential to improve user experiences in many fields. Using microservices, we can make apps more convenient, efficient, and personalized. In Travel and Tourism, we can use microservices to make it easier for users to book flights, and hotels, plan their trips, and find local activities. Healthcare Services can benefit a lot from microservices. By separating tasks like scheduling appointments, consulting with doctors online, managing prescriptions, and monitoring health into smaller services, users can take better care of themselves. They can get updates in real-time, communicate easily, and get personalized health advice. Banking and Financial Services can be made more user-friendly with microservices. By separating tasks like online banking, managing accounts, transferring money, investing, and applying for loans into smaller services, users can manage their money better. They'll have secure transactions, personalized advice, and easier banking experiences.

References

[1] Abhishek -, Saral Mukherjee, Yogita Patra, "UrbanClap: A Marketplace for On-Demand Services" published on January 02, 2023 by IIM Ahmedabad.

[2] Srividya Nagarajan," An Empirical Study on Urban Company Service Quality Influenced on Customers", published in November 2023.

[3] Dr Amol Murgai, "The Rise of Online On-demand Services – Awakening of Giant in Service Industry" published on August 4, 2022.

[4] Nancy Jyani, Harbhajan Bansal," UrbanClap: India's Largest Home Service Provider" published on July 8, 2021.

[5] K. Aravindhan, K. Periyakaruppan, T.S. Anusa, S. Kousika, A. Lakshmi Priya," Web Application Based On Demand Home Service System" published in March 2020.

[6] Android Studio, https://developer.android.com/studio/

[7] Firebase, https://firebase.google.com/

[8] SpringBoot, https://docs.spring.io/springboot/docs/current/reference/htmlsingle