

LA GRANDEE INTERNATIONAL COLLEGE

Simalchaur, Pokhara Nepal

Final Report

On

"Service Pro"

Submitted to:

Bachelor of Computer Application (BCA) Program

In partial fulfillment of the requirements for the degree of BCA under Pokhara University

Submitted by:

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We are grateful to our project supervisor and faculty teacher **Mr. Sunil Sapkota** and **BCA** coordinator **Mr. Ramesh Chalise,** for the guidance, inspiration and constructive suggestions that helped us in the preparation of this project.

We are also appreciative of each other and have understood that teamwork, the designation of the task per the skillset one portrays, constant synchronization and monitoring of progress and instilling new knowledge and skill is imperative for the success of any given work.

Student's Declaration

We hereby declare that we are the only authors of this work and that no sources other than the mentioned here have been used in this. We assure you that the work we present here is unique to ourselves and resemblances to another similar project are purely coincidental.

Sajit Gurung (PU Exam Roll no): 2019-01-53-0129

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Program: BCA, 8th Semester

Date: 02/07/2024

Supervisor's Declaration

hereby recommend that this project entitled "Service Pro" is done under my
pervision by Sajit Gurung, Nabin Adhikari, and Ankit Poudyal during their 8th
emester in partial fulfillment of the requirements for the degree of BCA under
okhara University is completed to my satisfaction and be processed for final
aluation

Mr. Su	nil Sap	kota	
Date:	/	/	

Letter of Approval

We certify that we have examined this report entitled "Service Pro", and are satisfied with the project defense. In our opinion it is satisfactory in the scope and qualifies as project in partial fulfillment of the requirements for the degree of BCA under Pokhara University.

Supervisor		
(Mr. Sunil Sapkota)	Examiner	Program Coordinator
		(Mr. Ramesh Chalise)
	Date: / /	

Abstract

The "Service Pro" project is an innovative mobile application aimed at revolutionizing the service industry by providing a streamlined platform for service providers and users. The primary objective of "Service Pro" is to facilitate efficient and transparent service provision by connecting qualified service providers with users seeking their expertise. The Service Provider application empowers providers to browse and apply for relevant service selected by users, ensuring a seamless match between skills and requirements. Once qualified, providers engage with users to deliver high-quality services, thereby fostering a mutually beneficial relationship.

Conversely, the Service Pro User application empowers users to express their service requirements and seamlessly connect with qualified providers. Through an intuitive interface, users can select their service needs, review provider profiles, and book appointments with ease. This user-centric approach enhances convenience and accessibility, driving positive user experiences. Key functionalities include selecting appropriate service, provider qualification, appointment booking, and seamless communication between users and providers. By prioritizing user satisfaction and efficiency, "Service Pro" aims to disrupt the traditional service delivery model and introduce a new time of making things easier and more trustworthy.

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ABBREVIATIONS

ERD	Entity Relationship Diagram
AI	Artificial Intelligence
ML	Machine Learning
DFD	Data Flow Diagram
UX	User Experience
UI	User Interface

1. INTRODUCTION

Our project, "Service Pro," is a comprehensive service provider app design to streamline service delivery through our platform. In a world increasingly reliant on digital platforms, our project aims to bridge the gap between service providers and users through a dynamic mobile application ecosystem. "Service Pro" is designed to revolutionize the service industry by providing a user-friendly platform that connects service providers with individuals seeking their expertise. The primary goal of "Service Pro" is to streamline the process of service delivery by enabling qualified providers to connect with users in need of their services. Through the service provider application, providers can apply for relevant service selected by users, ensuring a seamless match between skills and requirements. Once qualified, providers engage with users to deliver high-quality services, fostering a mutually beneficial relationship.

Conversely, the service user application empowers individuals to describe their service requirements and seamlessly connect with qualified providers. Users can effortlessly select their service needs, review provider profiles, and book appointments hassle-free. Our focus is on addressing the challenges faced by both service providers and users in efficiently accessing and offering services. The inspiration behind "Service Pro" comes from the recognition of these challenges and the desire to provide a comprehensive solution. Our research highlights the prevalence of manual systems in service provision, leading to time-consuming processes and potential inefficiencies. With "Service Pro," we aim to embrace the power of technology to automate tasks, improve communication, and enhance overall delivery."Service Pro" will continually evolve to meet the changing needs and preferences of our users. We're committed to implementing user-friendly interfaces, comprehensive reporting functionalities, and rigorous testing to ensure a seamless and reliable user experience.

2.PROBLEM STATEMENT

In today's modern age, accessing and providing services seamlessly remains a significant challenge for both service providers and users. Traditional methods of service delivery often lack efficiency and transparency, leading to frustration and inefficiencies in the service industry. Manual systems are prone to errors, resulting in missed opportunities and unsatisfied customers. In response to these challenges, our team is developing "Service Pro," a mobile application that aims to revolutionize service provision through a user-friendly platform. With the prevalence of smartphones and the increasing demand for convenient solutions, there is a clear need for a digital platform that connects service providers with users in a seamless and efficient manner. Service providers currently face difficulties in finding relevant service opportunities and connecting with users who require their services. Likewise, users struggle to find qualified service providers for their specific needs and often resort to unreliable methods of sourcing services. This lack of a centralized platform leads to inefficiencies, missed opportunities, and dissatisfaction among both service providers and users. Moreover, communication gaps between service providers and users create many challenges, leading to misunderstandings and delays in service delivery. Without a streamlined system in place, the service industry continues to operate in a disjointed manner, hindering productivity and hindering the growth potential of service providers. To address these issues, "Service Pro" will provide two distinct applications: one for service providers and another for service-seeking users.

Existing services like Sajilo Sewa (n.d.) often lack dedicated chat functionalities, hindering seamless communication between users and providers. This can lead to misunderstandings, delays, and frustration for both parties. Service Pro bridges this gap by integrating a robust chat system, enabling real-time conversation and clarification of service details.[1].Platforms like Bhetayo (2024, May 15) may have vulnerabilities in their registration processes, allowing for the creation of fake provider accounts with minimal information like name, address, and phone number. This poses a security risk for users and undermines the platform's credibility. Service Pro tackles this issue by implementing a certificate upload feature. Providers must upload relevant credentials and certifications for their specific service fields, ensuring a pool of qualified and

verified professionals[2].

The previously mentioned problems are just the tip of the iceberg. Service Pro aims to address a broader range of issues hindering the on-demand service industry:

- Unreliable Service Quality: Users often struggle to find providers who consistently
 deliver high-quality services. Service Pro plans to incorporate user reviews and
 rating systems to promote accountability and transparency.
- Limited Service Options: Existing platforms like Service Nepal, SajiloSewa, and Bhetayo may not offer a comprehensive range of services. Service Pro aims to provide a diverse service directory, catering to a broader spectrum of user needs.
- unclear Pricing Structures: Users of apps like TaskRabbit encounter unclear or unfair pricing models. Service Pro envisions offering transparent pricing options and upfront cost estimates. Users can also negotiate for fair prices through our chat system.[4]
- Inefficient Appointment Booking: Scheduling appointments can be difficult, often requiring multiple phone calls or emails. Service Pro strives to implement a streamlined booking system within the app, simplifying the process for both parties.

3. OBJECTIVES

- To implement a secure and efficient communication system between service providers and users to facilitate service bookings.
- To enable users to seamlessly book services from the comfort of their homes, ensuring efficient and convenient service access.

4.BACKGROUND STUDY

The "Service Pro" project aims to revolutionize the service industry by providing a seamless platform where users can find and book various services, and service providers can connect with potential clients. In the contemporary digital era, mobile applications have become pivotal in bridging gaps between service seekers and providers, streamlining the process, and enhancing user experience.

The on-demand service market has witnessed exponential growth over recent years, driven by increasing smartphone penetration, fast-paced lifestyles, and the need for convenience. Services such as home cleaning, plumbing, tutoring, beauty, and healthcare have seen significant demand. Reports suggest that the global on-demand service market is expected to grow substantially, highlighting the potential for applications like Service Pro to capture a significant market share. Modern consumers prioritize convenience, speed, and reliability. They prefer platforms that offer a variety of services, easy navigation, secure payment options, and robust customer support. Service providers seek platforms that offer exposure, ease of use, efficient communication tools, and a reliable payment system.

The growth of smartphones and advancements in mobile technology have made it easier to develop robust and user-friendly applications. Features like push notifications, and in-app communication are now standard. Cross-platform development frameworks like Flutter and React Native have enabled developers to create apps that function seamlessly on both iOS and Android platforms, ensuring wider reach and uniform user experience. AI and ML algorithms can enhance service matching by analyzing user preferences and behavior, leading to better recommendations and increased satisfaction. Chatbots and virtual assistants powered by AI can provide real-time support, enhancing user engagement and satisfaction.

There are several top players in the on-demand service market, such as TaskRabbit, SajiloSewa, Bhetayo and Service Nepal, each offering a variety of services through their platforms. These platforms have set benchmarks in terms of user experience, service variety, and reliability. Despite the availability of multiple platforms, there are gaps in personalized service matching, ease of use, and comprehensive support for

both users and providers. Many existing solutions do not effectively cater to the localized needs of users and providers, often leading to dissatisfaction.

Service Pro aims to address the gaps identified in existing solutions by offering a highly personalized and user-friendly experience for both service seekers and providers. The platform will leverage advanced technologies to ensure precise service matching, real-time communication, and secure transactions. For users, Service Pro provides an intuitive interface to describe their service needs, view profiles of qualified providers, and book services with ease. The app ensures reliability and satisfaction by featuring user reviews and ratings. For providers, the application offers a streamlined process to apply for services, showcase skills, and engage with potential clients. It aims to enhance provider visibility and ensure a steady flow of service opportunities.

This background study underscores the project's relevance and potential in the current market landscape. By addressing the shortcomings of existing solutions and leveraging modern mobile development technologies, Service Pro is positioned to fill a critical gap in the on-demand service market, delivering a superior, seamless, and mutually beneficial service experience.

5.REQUIREMENT ANALYSIS

The Requirement Analysis section outlines the functional and non-functional requirements necessary for the successful development and deployment of the Service Pro application. This analysis is crucial to ensure that both the Service Provider and Service User applications meet the needs of their respective users and deliver a seamless, high-quality experience.

Business Needs:

To establish a strong foothold in the flourishing on-demand service market, our primary business goal is market penetration. We aim to achieve this by providing a seamless and user-friendly platform, "Service Pro," catering to both service providers and users. By offering a comprehensive range of services and ensuring efficient service matching, we intend to capture a significant market share. Revenue generation is another crucial aspect of our business strategy. We plan to create multiple revenue streams through service fees, and strategic advertisements. Additionally, prioritizing customer satisfaction is paramount. By delivering reliable, efficient, and high-quality services, we aim to enhance user experience, increase customer retention, and foster long-term loyalty. Operational efficiency is also a key focus, as we strive to streamline the process of connecting service providers with users, optimizing resource allocation, and maximizing productivity. Lastly, building brand recognition is essential. Through effective marketing initiatives and consistent delivery of exceptional service, we aim to establish "Service Pro" as a recognizable and trusted brand in the service provider industry.

User Requirement:

Service Providers: For service providers, our platform should offer a straightforward and efficient experience. They require an easy registration process and a seamless profile creation feature. Verification of qualifications is essential to ensure trust and reliability. Service providers need the ability to list and manage their services effortlessly, communicate with users in real-time, securely receive payments, and handle ratings and feedback effectively. These features are crucial for providers to showcase their skills, connect with potential clients, deliver high-quality services, and

build a positive reputation within the platform.

Service Users: On the user end, simplicity and convenience are paramount. Service users expect a user-friendly interface with a straightforward registration process. They require robust search functionalities to find services based on various criteria such as service type and provider ratings. Detailed provider profiles with comprehensive information, including ratings and reviews, are essential for informed decision-making. Users need hassle-free booking options, secure payment methods, timely notifications and seamless in-app communication with service providers. These features ensure a smooth and efficient experience for users, enabling them to find and book services effortlessly while enjoying peace of mind regarding service quality and reliability.

- 1. Functional Requirements
- a. User registration and authentication;
- i. Service Provider App:
- Providers should be able to register using their email, phone number, or social media accounts.
- Secure authentication methods, including password protection and two-factor authentication.

ii. Service User App:

- Users should be able to register using their email, phone number, or social media accounts.
- Secure authentication methods, including password protection and two-factor authentication.

b. Profile Management:

- i. Service Provider App:
- Providers should be able to create and manage their profiles, including adding personal information, skills, qualifications, and experience.
- Upload documents for verification and approval by the platform.

- ii. Service User App:
- Users should be able to create and manage their profiles, including adding personal information and preferences.
- c. Service listing and search:
- i. Service Provider App:
- Providers should be able to list the services they offer, including detailed descriptions, pricing, and availability.
- ii. Service User App:
- Users should be able to search for services based on categories, keywords, location, and provider ratings.
- d. Service Booking:
- i. Service Provider App:
- Providers should be able to accept or decline service requests.
- ii. Service User App:
- Users should be able to book services, view provider availability, and receive confirmations.
- e. Communication tools:
- i. Service Provider App:
- In-app messaging features to communicate with users regarding service details and updates.
- ii. Service User App:
- In-app messaging features to communicate with providers and receive updates.

- g. Rating and reviews:
- i. Service Provider App:
- Providers should be able to receive and respond to ratings and reviews from users.
- ii. Service User App:
- Users should be able to rate and review providers based on their service experience.
- f. Notifications:
- i. Service Provider App:
- Real-time notifications for service requests, confirmations, cancellations, and messages.
- ii. Service User App:
- Real-time notifications for booking confirmations, reminders, and messages.
- 2. Non-Functional Requirements
- a. Performance:
- i. The applications should load quickly and provide a smooth user experience, even under high traffic conditions.
- ii. Efficient database management to handle large volumes of user data and transactions.
- b. Security
- i. Data encryption to protect user information and transaction details.
- ii. Implement strong authentication mechanisms and access controls.
- iii. Regularly audit and update security measures.
- c. Usability
- i. Design an intuitive and user-friendly interface.

- d. Scalability
- i. Comprehensive onboarding tutorials and help sections to assist users and providers in navigating the app
- e. Reliability
- i. High availability and uptime to ensure the platform is accessible at all times.
- ii. Robust backup and recovery mechanisms to prevent data loss.
- f. Compatibility
- i. Cross-platform compatibility to ensure the applications work seamlessly on both iOS and Android devices.
- ii. Regular updates to maintain compatibility with the latest operating system versions.
- 3. Hardware Requirements

The following hardware components are required:

i. processor: x86_64 CPU Cores

ii. Harddisk: 16 GB

iii. RAM: 8 GB

4. Software Requirements

The required software components include:

- i. Development Tools:
- Integrated Development Environments (IDEs) like Android Studio for Android development and Xcode for iOS development.
- Cross-platform development frameworks such as Flutter or React Native for simultaneous iOS and Android development.
- ii. Backend Technologies
- Server-side languages and frameworks like Node.js, Django, or Ruby on Rails.
- Database management systems like PostgreSQL, MySQL, or MongoDB.

6. SYSTEM DESIGN

i. DATA FLOW DIAGRAM

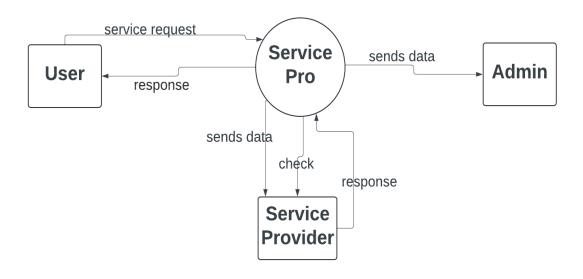


Fig 1: Context level DFD of Service Pro

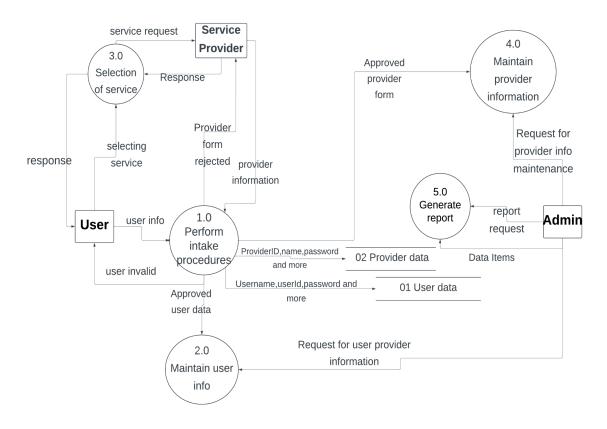


Fig 2: Level 1 DFD of Service Pro

ii. ERD

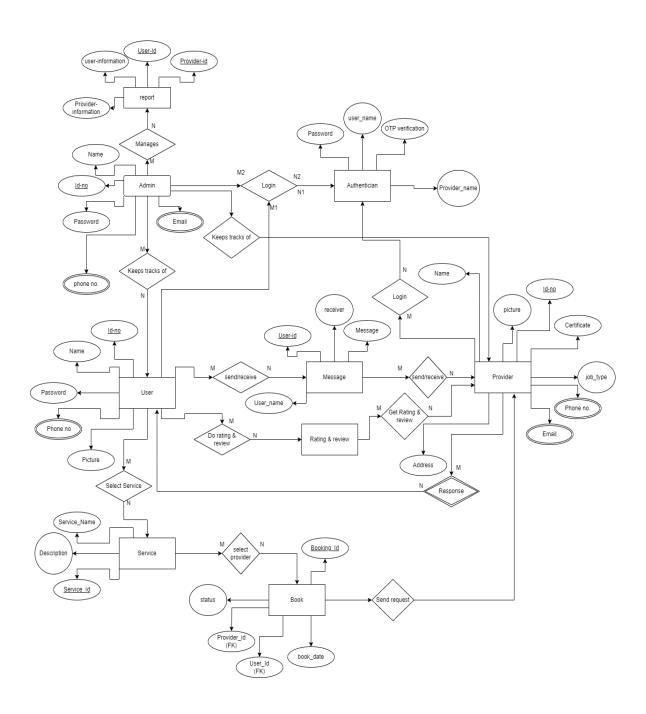


Fig 3: ER Diagram of Service Pro

iii. FLOWCHART

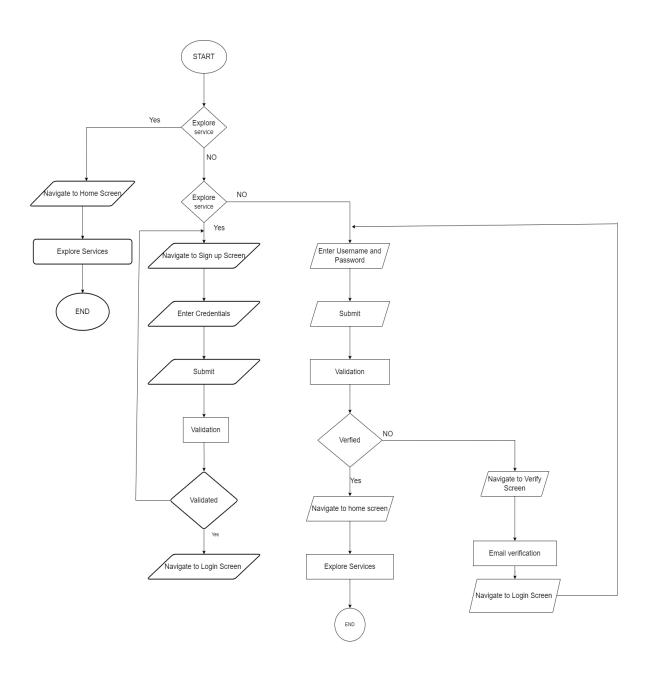


Fig 4.1: User Login

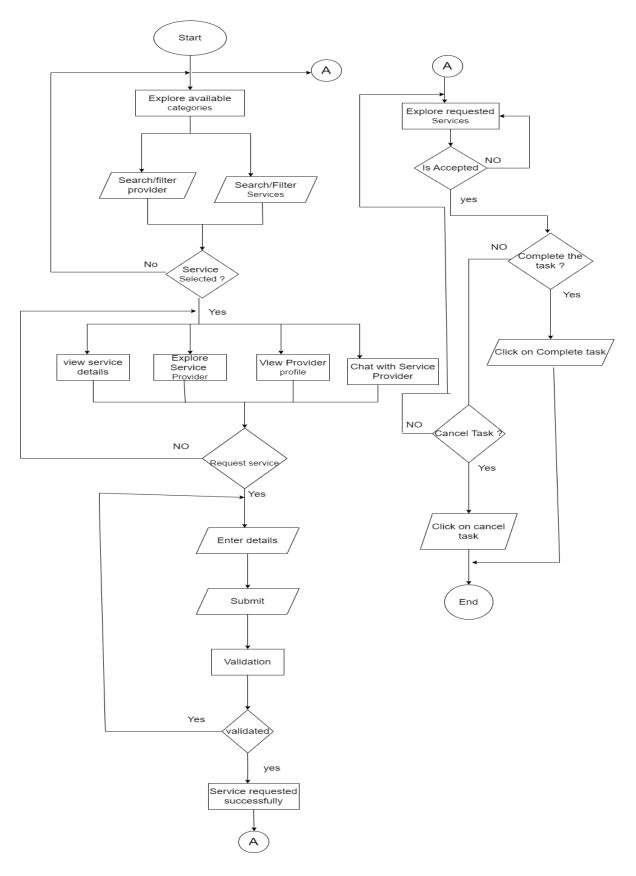


Fig 4.2: User

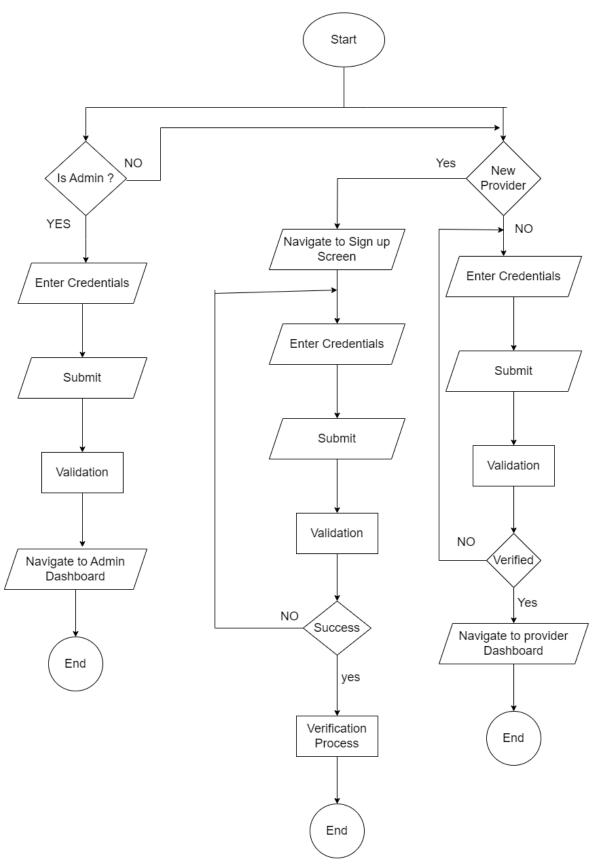


Fig 4.3: Provider Login/Signup

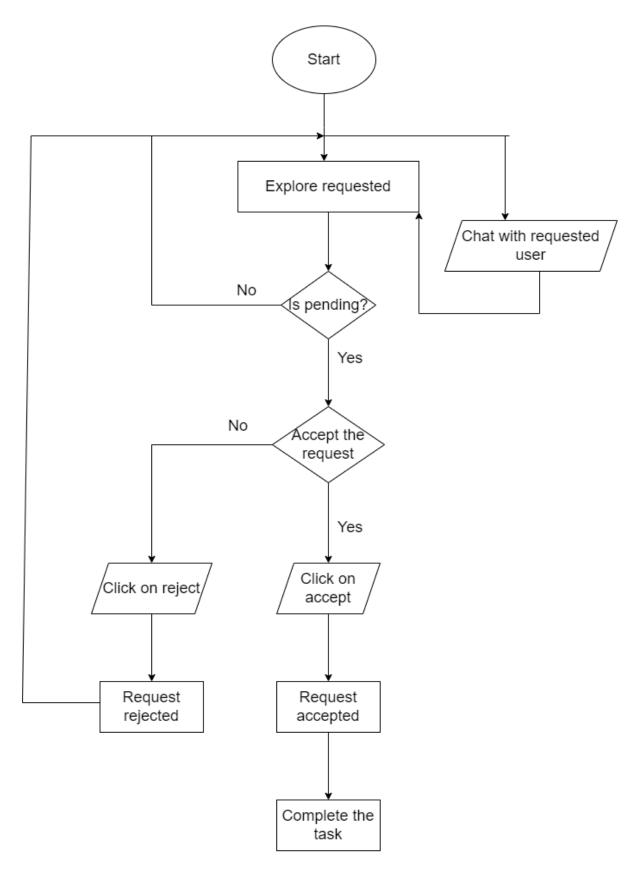


Fig 4.4: Provider

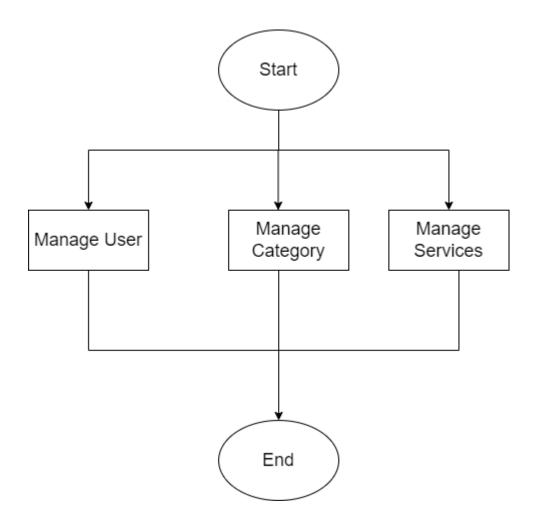


Fig 4.5: Admin

iv. DATABASE SCHEMA

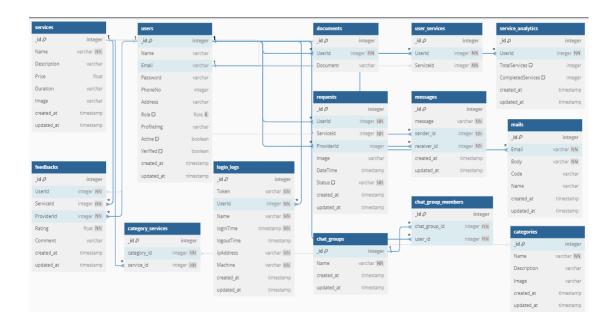


Fig 5: Database Schema

7. PROJECT GANTT CHART/ TIMELINE CHART

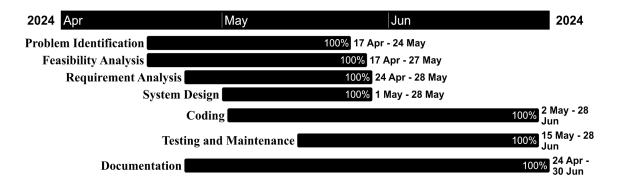


Fig 6: Gantt Chart of Service Pro

8. DEVELOPMENT

For the development of the "Service Pro" service provider app and user app, we have chosen the Spiral Model as our development methodology. The Spiral Model is characterized by its iterative and flexible nature, making it well-suited for projects that require constant feedback and adaptation to changing requirements.

Reasons for Choosing the Spiral Model:

- Iterative and Flexible Nature: The Spiral Model allows for iterative development cycles, enabling us to incrementally build and refine the "Service Pro" applications based on user feedback and evolving requirements.
- Risk Management: Given the sensitive nature of service provision and the handling
 of user data, risk management is crucial. The Spiral Model emphasizes risk analysis
 and mitigation at each iteration, ensuring that potential risks are identified and
 addressed early in the development process.
- Adaptability: The dynamic nature of service provision requires a development approach that can adapt to changing market demands and user preferences. The Spiral Model's flexibility allows us to incorporate new features and enhancements as the project progresses.

We applied the four phases of the Spiral Model to the development of our Service Pro:

1. Objective Determination and Identify Alternative Solutions: In the initial phase, we set clear objectives for our Service Pro project. This involves outlining functionalities like user registration, service listings, provider search, qualification process, user reviews, appointment booking, and secure communication. Simultaneously, we also identified alternative solutions and potential approaches to developing the Service Pro. This could involve building from scratch, leveraging existing mobile app frameworks, or utilizing third-party services for functionalities like payment processing. Evaluate factors like development time, cost, scalability, and long-term maintenance.

- 2. Identify and Resolve Risk: In this phase, we conducted a comprehensive risk analysis specific to our Service Pro project. We identified potential risks that could affect the successful development and implementation of the system. This could include technical challenges (data security, scalability), user adoption, unclear requirements, integration complexities, and potential payment security vulnerabilities. Once we've identified these risks, then we developed strategies to mitigate or resolve them. For example, if data security is a concern, plan for robust encryption methods, access controls, and regular security audits. For user adoption, focus on intuitive UI/UX design and user education. Regularly test and update the application to address security vulnerabilities. Risk management is an ongoing process throughout the project.
- 3. Develop the Next Version of the Product: In this phase, we focused on the actual development of the Service Pro app and started building or enhancing the system based on the objectives and requirements defined in the first phase. This could involve developing new features, improving existing ones, and addressing any issues or bugs discovered during testing and user feedback. We considered using an agile development approach to ensure flexibility and responsiveness to changing needs. This promotes continuous integration, testing, and feedback loops. Iteration Example: The first iteration might focus on core functionalities user registration, service listing, basic search. Subsequent iterations could introduce provider qualification, user reviews, appointment booking, and secure payment integration.
- 4. Review and Plan for the Next Phase: After completing a cycle of development, we entered the review and planning phase. Here, we evaluate the work done in the previous iteration, gather user feedback through testing and surveys, and assess whether the objectives have been met. This phase also involves identifying any issues or areas for improvement that emerged during the development process. Based on the feedback received and the evolving requirements, we planned for the next iteration or phase of development. We considered refining objectives and adding or modifying features based on user feedback, improving existing functionalities, or adjusting development timelines.

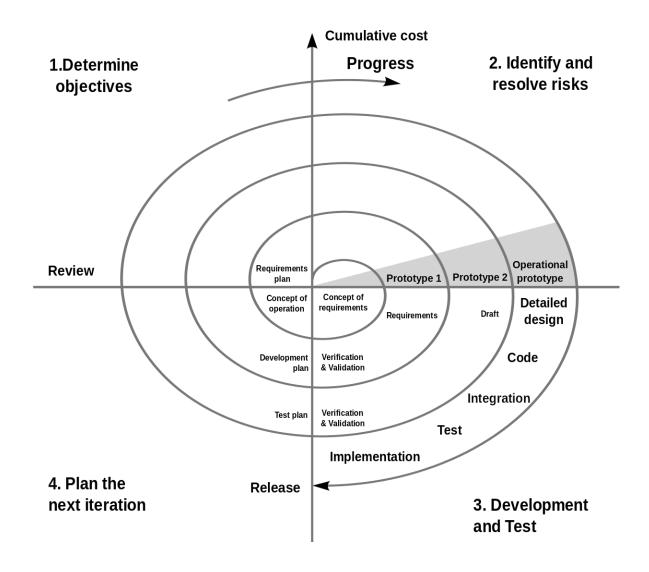


Fig 7: Spiral Model of Service Pro

9. TESTING

Test Case ID	Test Case	Test Steps	Test Data	Results
TC001	User Registrat ion (Service Provider App)	 Launch the Service Provider App. Click on the "Register" button. Enter valid email address, password, and confirm password. Select service category and subcategories (Sample: Plumbing, Leaky Faucet Repair). Enter additional information (name, contact details, experience). Click on "Register". Verify account creation confirmation message. 	N/A	The app launches successfully.
TC002	Registration (Service User App)	 Launch the Service User App. Click on the "Register" button. Enter valid email address, password, and confirm password. Enter name and contact details. Click on "Register". Verify account creation confirmation message. 	N/A	The app launches successfully.

TC003	Login (Both Apps)	 Launch the Service Pro/User App. Click on the "Login" button. Enter registered email address and password. (Valid email address and password used during registration) 	N/A	The app launches successfully.
		4. Click on "Login".5. Verify successful login by accessing the main dashboard/home screen.		
TC004	Service Listing (User App)	 Launch the Service User App. Login with a registered user account. Select a service category and (optional) subcategory (Sample service category: Plumbing). Verify a list of available service providers is displayed. 	N/A	The app launches successfully.
TC005	Service Provider Profile View (User App)	 Launch the Service User App. Login with a registered user account. Browse the service provider list (from TC004). Tap on a specific service provider profile. Verify the profile displays provider information (name, services offered, experience, ratings/reviews) 	N/A	The app launches successfully.

|--|

10. PROJECT RESULT

- Two fully functional mobile applications developed: Service Provider App and Service User App.
- User registration and login functionalities implemented for both app types.
- Service listing, search, and provider profile browsing features developed.
- Service providers receive instant alerts for matching service requests, and users are kept informed about appointment confirmations, cancellations, and provider updates.
- Integrated appointment booking system with user and provider communication functionalities.

11. FUTURE ENHANCEMENTS

- i. Advanced Search and Filtering:
- Implement advanced search filters for users to refine service searches by location, price range, provider ratings, or specific service attributes.
- Allow service providers to add tags or keywords to their profiles for improved searchability based on user needs.
- ii. User reputation system:
- Develop a user reputation system to incentivize positive behavior and discourage misuse of the platform. This could involve rewarding users for timely payments, positive reviews, or frequent service usage.
- iii. Service Scheduling and Management Tools:
- Provide service providers with scheduling and calendar management tools within the app. This can help them streamline appointment management, avoid double-bookings, and optimize their schedule.
- iv. Location-Based Services Integration:
- Integrate location-based services to allow users to find service providers in their vicinity and display real-time service availability.
- Utilize location data to offer users recommendations for service providers based on their proximity and user reviews.

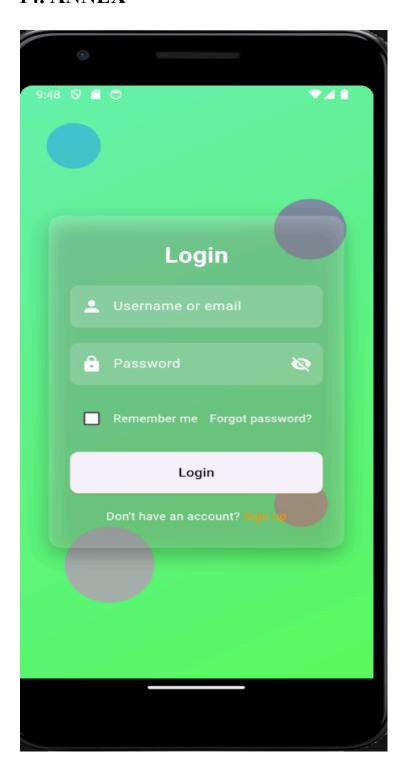
12. CONCLUSION

Our project "Service Pro" represents a significant step forward in the realm of service provision, aiming to streamline and enhance the user experience through an innovative and user-friendly platform. By leveraging cutting-edge technologies in mobile development, we are ready to address the challenges faced by service providers and users in accessing and offering services efficiently."Service Pro" stands as a dynamic solution to the administrative hurdles encountered in service delivery, prioritizing automation and efficiency to optimize the service ecosystem. Through intuitive interfaces and seamless communication channels, our platform seeks to empower both service providers and users, fostering a collaborative and mutually beneficial environment. The scope of "Service Pro" encompasses not only the facilitation of service requests and bookings but also the promotion of transparency, reliability, and user satisfaction. By providing robust features such as service posting, booking and scheduling, real-time notifications, and secure payment integration, we aim to redefine service provision and elevate the overall service experience for all stakeholders involved. Through the execution of our project, we aspire to bring efficiency, clarity, and coordination to the service industry, setting new standards for excellence and innovation. By aligning with these principles and objectives, "Service Pro" seeks to empower service providers and users alike, facilitating meaningful connections and fostering a culture of trust and reliability within the service community.

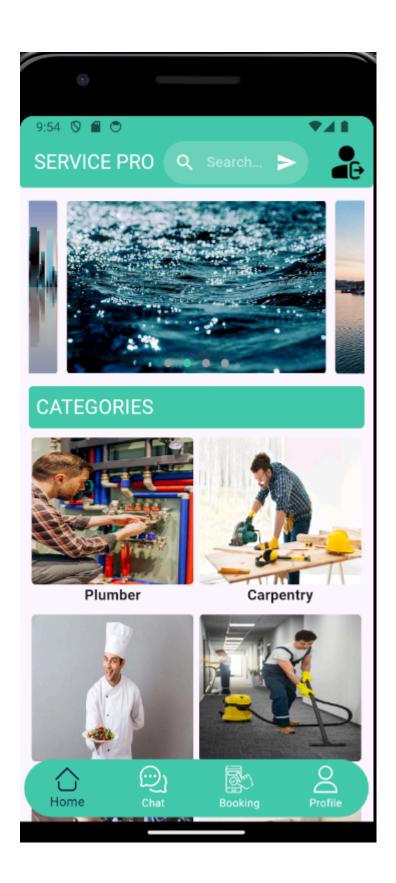
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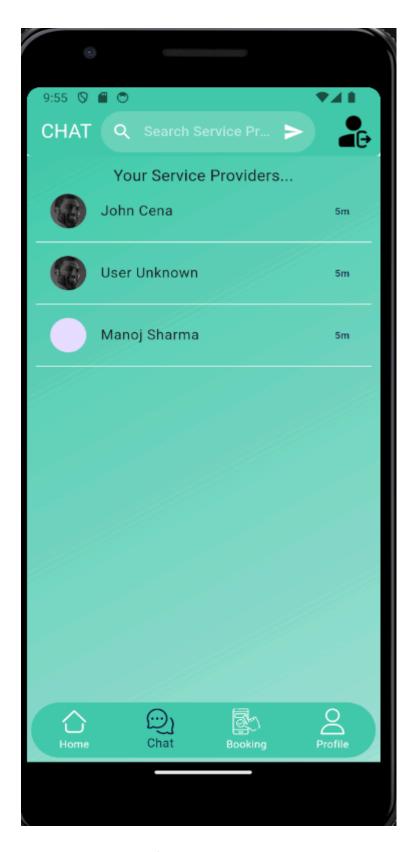
14. ANNEX



Login page



Home Page



chat screen