

Household Veritas - A platform that provides household services

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Abstract - *"The demand for household services such as plumbing, electrical, electronic, mechanical, pest control, home paint, and machine repairing has increased rapidly in recent years. However, finding reliable and efficient service providers can be a challenge for customers, especially in emergencies. To address this issue, the development of an Android app for household services has become essential. Android is an open and free operating system based on Linux, which is mainly used for mobile terminals such as smartphones and panel computers. The app can be developed to allow users to access various household services at their fingertips. The app can include features such as a list of available service providers, their ratings, and reviews. It can also provide customers with real-time updates on the status of their service requests, including the expected time of arrival of the service provider."*

Key Words: Android app, Household Services, Help in Basic Household Services, Customers.

1.INTRODUCTION

Android app development for household services is a growing field that aims to provide convenience and ease to homeowners and service providers alike. However, creating an Android app for household services requires careful consideration of several aspects, such as a strong landing page, booking management, and user experience.

To begin with, having a well-designed landing page is crucial to inform users about the app and its features. The landing page should provide all the relevant information that potential customers might want to know about the app, such as the types of services offered, pricing, and availability. Additionally, the landing page should be visually appealing and easy to navigate to keep users engaged and interested in the app.

Another important feature to consider when developing an Android app for household services is booking management. Users should be able to easily find and book the services they need with just a few clicks and swipes on the app. The app should have a clear and intuitive interface, with a simple booking process that allows users to select the type of service they need, choose a provider, and schedule an appointment.

To ensure a seamless user experience, it is also essential to build the app with the latest tools and technologies.

Android offers a range of developer tools and resources, such as Android Studio and the Play Console, to help with the app development process.

These tools can make it easier to build experiences that users will love on every Android device. When developing an Android app for household services, it is important to work with highly skilled developers who understand the unique challenges and opportunities of this niche. Custom Android app development services can provide a range of benefits, including multi-platform exposure and greater sources of revenue. There are also many resources available to help you learn more about Android app development. For example, Introduction to Android Application Development is a great resource for developers who want to understand Android app development but who have little or no experience with mobile software. Similarly, there are many on-demand household services platforms available, such as the Household service android application and website, which allows customers to easily book and pay for services without leaving their homes. Android app development for household services is a rapidly growing field, and there are many resources available to help you get started. One of the first steps in creating an Android app is to download the necessary tools, such as the Android SDK and Android Studio. However, there are many challenges to developing Android apps, such as building for a multiscreen world, getting performance right, and ensuring that your code is secure and compatible with older devices. When building an on-demand home services mobile app, it is important to consider the following key features:

- User registration and login: This allows users to create an account and login to access the app's features.
- Service provider registration and login: This allows service providers to create an account and login to access the app's features.
- Service request and booking: This feature allows users to request a service and book a service provider.
- In-app messaging: This feature allows users and service providers to communicate with each other.

- Payment integration: This feature allows users to pay for services within the app.
- Ratings and reviews: This feature allows users to rate and review service providers, which can help other users make informed decisions.

2. MOTIVATION

The need for Android app development for household services can be attributed to the increased demand for Developing an app for household services also presents an opportunity for businesses to improve customer engagement through in-app messaging features, which can lead to better customer satisfaction and retention. Creating an app that solves real-world problems and meets the needs of consumers can be a rewarding experience for developers and businesses alike. Overall, the need for convenience, market demand, and customer engagement and satisfaction are just some of motivating factors to develop an Android app for household services..

3. PROBLEM STATEMENT

The proposed Android app for household services is intended to make it simple for customers to access a variety of services, including plumbing, electrical, electronic, mechanical, pest control, home paint, and machine repairing. The app aims to provide a platform for all kinds of household services, which is especially important in urban areas where people are often busy and have difficulty finding service providers in their localities.

The Android app will enable customers to search for services based on their location, view service providers' profiles, and contact them directly. The app's GPS feature will allow users to locate service providers in their area and choose from a list of available providers. Customers can then schedule a service for a specific date and time.

4. METHODOLOGY

In order to define the problem in detail and create a solution to it, the app is coded and then it is checked that whether it meets all the requirements, whether it is according to the set standards.

- Understand the requirements:

In response to the goal of assisting those impacted by various issues, we have taken the initiative to gather relevant data on agencies that could potentially utilize our system. To commence the development process, it is crucial to come up with a well-thought-out idea or concept for the app. It is imperative to evaluate the feasibility of transforming the concept into a workable and sustainable app that can cater to the needs of the intended audience.

By ensuring that the app idea is thoroughly scrutinized, we can create a high-quality app that meets the needs of its users and contributes to the betterment of their lives..

- Conduct research:

To provide a more effective solution, we conducted a thorough study of existing options and their limitations. Our goal was to develop a superior system that addresses the shortcomings of previous approaches. In particular, we focused on the development of Android applications for household services. Our research introduces the Android platform and its unique features, and provides a detailed description of the Android application framework from a developer's perspective. By leveraging this knowledge, we aim to create an innovative solution that meets the needs of our users.

- Solution design:

After gathering all the information about the requirements and available technologies and resources, we begin the process of designing the overall architecture of the platform, including the database, the interface users and the services that could be provided.

- Build the Platform:

The Android app is created using Android Studio, which is the official Integrated Development Environment (IDE) for Android app development. The source code of the app is written in Java, a popular programming language for Android development due to its object-oriented nature and the availability of a large number of libraries and frameworks for Android development. When the Java source code is compiled using a Java compiler, it is converted into Java class files. These class files, along with all the resources of the app, are then packed into a .apk file, which can be installed on any device .

To build the Android app, we used a combination of an implementation library, server program, and platform UI solutions. These solutions were tweaked and tested iteratively as they were built, ensuring that the app was both functional and user-friendly.

- Test and Validate:

The platform has been tested with real-world data to verify that it is accurate, efficient, and meets the defined requirements.

- Deployment:

We planned to deploy the platform on top of a secure and scalable infrastructure provided by google. Google Play is a robust publishing platform that helps you publicize, sell,

and distribute your Android apps to users around the world.

- Evaluate and improve:

Continuous evaluation of the platform's performance and taking user feedback to make improvements as necessary will be done to ensure that it is meeting the needs of its users.

5. SYSTEM ANALYSIS

5.1 Architectural Design

A formal architecture description is a representation of a system that is structured to support the system's behavior and reasoning.

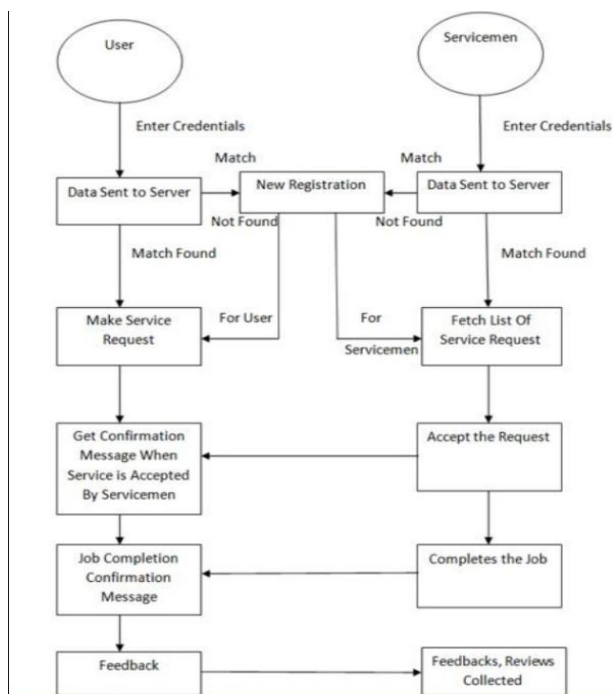


Fig 5.1: Represents the architectural design

Fig.:5.1 refers to the process of defining the overall structure and components of a system. In the case of a mobile application connected to a server and database, this architecture would likely involve multiple components and their respective interactions. The mobile application would act as the front-end component, through which users interact with the system. The server would act as the back-end component, responsible for processing user requests and generating responses. The database would store the system's data and provide a means for retrieving and modifying it. These components would be connected through various communication channels, such as mobile internet connection, to enable the system to function as a cohesive whole.

5.2 Modular Design

Modular design, also known as "modularity in design," is a design philosophy that involves breaking down a system into smaller, reusable components called modules. These modules are designed to be relatively independent of each other, simpler than the original system, and can be modified, replaced, or exchanged between different systems. Modular design is commonly used in software engineering, where it involves breaking down software into multiple independent modules, each of which can be developed and compiled separately. However, modular design is not limited to software engineering, as it can be applied to other fields such as product design and construction.

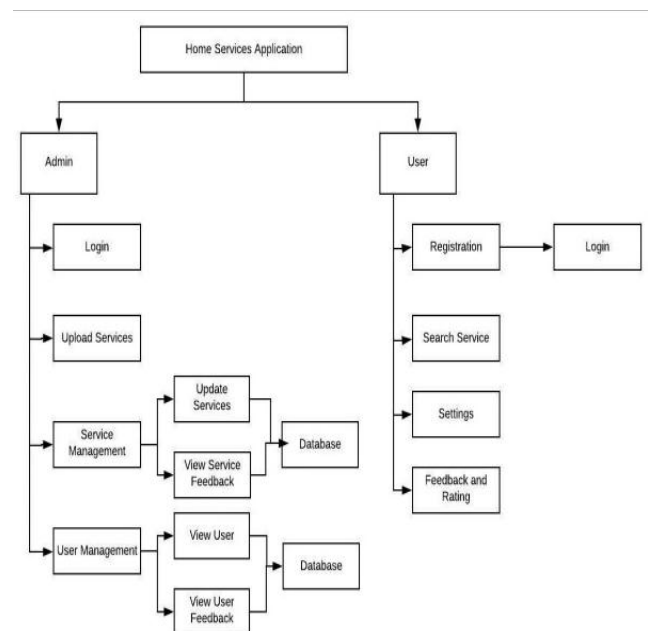


Fig. 5.2: Diagram Representing Modular Design

Fig.:5.2 depicts a powerful design approach that can be applied to a wide range of fields and industries. By breaking down complex systems into simpler, reusable modules, modular design can help to improve efficiency, organization, and flexibility in design and development processes.

5.3 Use Cases Diagram

A use case diagram is a visual representation of the interactions between users, roles, and a system to accomplish a specific goal. It typically lists a series of steps or events that depict how a user interacts with the system to complete a particular task. This diagram is an essential tool for software developers and designers to better understand the needs of the user and to ensure that the system is designed to meet those needs.

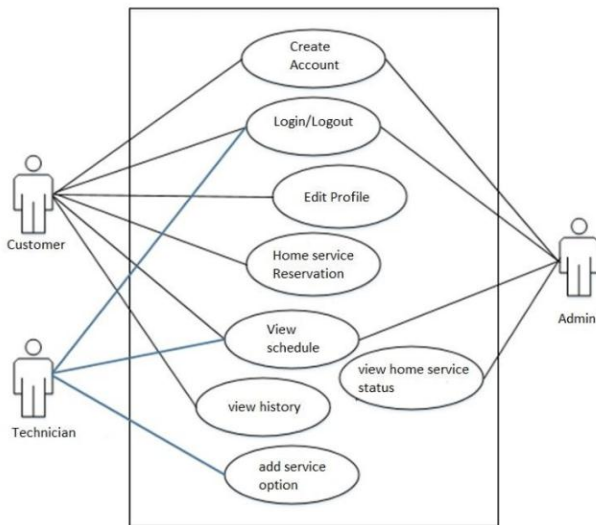


Fig. 5.3 Diagram Representing Use Case Of the system

Fig. 5.3 The UML use case diagram shown above depicts an actor, typically a human user, interacting with a system through an interface to accomplish a goal. Use cases are a methodology employed in system analysis to define, clarify, and organize system requirements. Each use case consists of a series of possible interactions between users and the system in a specific environment, all geared towards achieving a specific objective.

5.4 Sequence Diagram

A sequence diagram is a powerful tool used in software engineering to depict the interaction between objects and their order of operation. It is a construct of a message sequence chart and shows object interactions arranged in time sequences. By utilizing this type of diagram, software developers can better understand the relationships and dependencies between objects. The below sequence diagram accurately represents the sequence of actions being taken in the system.

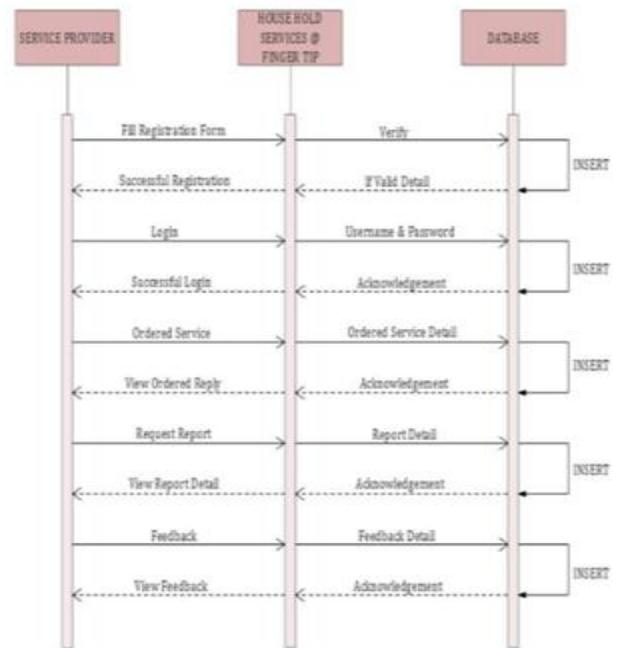


Fig.5.4.1 Sequence diagram

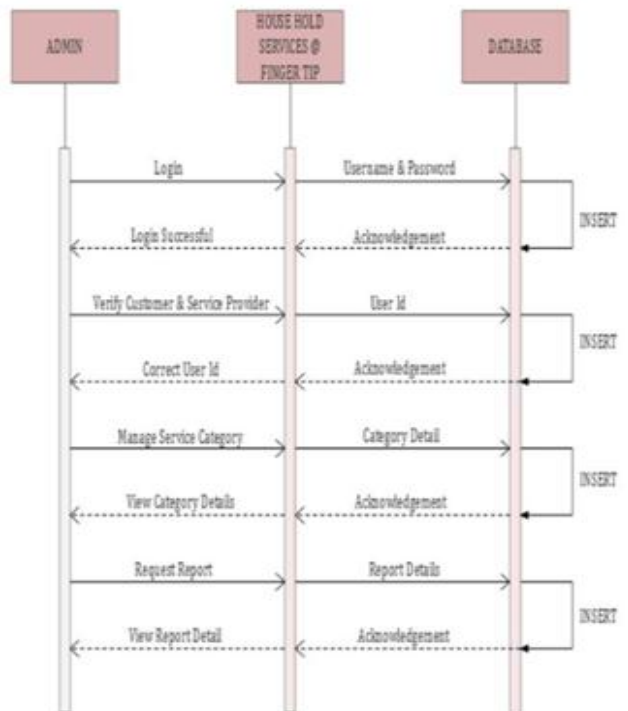


Fig. 5.4.2 Sequence diagram

6. IMPLEMENTATION

6.1 Login page

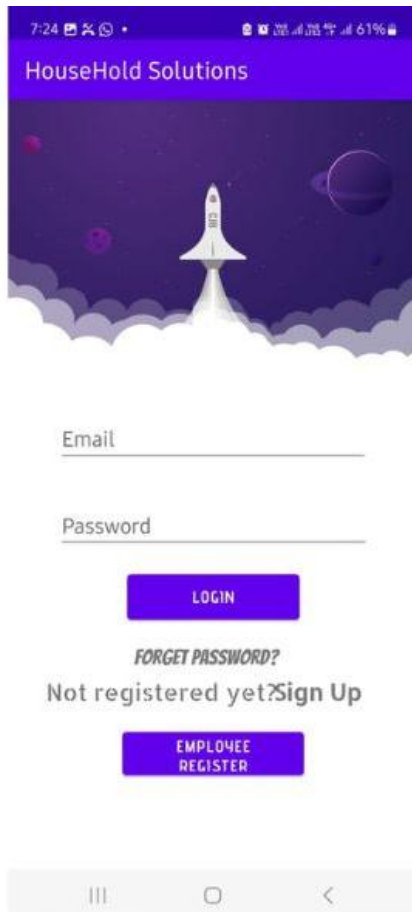


Fig 6.1 Login Page

The Login page screen above presents two options: Sign-in and Sign-up. Sign-in is intended for users who already have an account, while Sign-up is for those who are new users. To sign in, users simply need to enter their email-id and password, making the process straightforward and easy.

6.2 Services Available



Fig. 6.2 Services Page

This app consists of numerous facilities that a man requires in his Day to Day life. There is also a search option for the one's who are in search of new facility.

7. CONCLUSION

To summarize, the introduction of an Android app for household services has the potential to significantly impact both customers and service providers. The app's user-friendly interface, ability to provide real-time updates, and secure payment gateways present a revolutionary solution for accessing and delivering household services. By streamlining the process of booking and paying for services, the app has the potential to transform the way people interact with household service providers. This shift in the way services are accessed and delivered has the potential to increase customer satisfaction, improve service efficiency, and provide new opportunities for service providers to expand their business.

9. REFERENCES

- [1] Dr. A. K. Singh, "Household Services Management and Booking", IEEE Conference, Management System, Vol no.-2, PP-125-128, ISN- 187-165, ISO- 234:261, 08/01/2005.
- [2] Nirmal Rao "Research on the development of Android Projects", IEEE Conf, ISSN-245-228, ISO- 125:162, Vol no.-18, PP- 245-254, 03/02/2015.
- [3] Dr. Ashok Talukder, Ms. Roopa Yavagal, Mr. Hasan Ahmed: Mobile Computing, Technology, Applications and Service Creation, 2nd Edition, Tata McGrawHill, 2010.
- [4] Ved Singh, "Design and Implementation of Android App", IEEE Conf., Java Handling Android Studio, 26/04/2013.
- [5] Naveen Pandit, "Research Paper Journal for Android Projects", Suscom, Mang. Household Services, PP- 345-187, Vol no.-23, 18/01/2020.
- [6] Y. Hu, I. Neamtii, and A. Alavi, "Automatically verifying and reproducing event-based races in Android apps," in Proc. Int. Symp. Softw. Testing Anal., 2016, pp. 377-388.
- [7] L. Li, "Mining androzo: A retrospect," in Proc. Doctoral Symp. 33rd Int. Conf. Softw. Maintenance Evolution, 2017, pp. 675-680.
- [8] Karan, "Research Paper on Household Services", IEEE International Conference on Information Technology, ISSN-145-128, ISO- 225:262, 07/02/2016.
- [9] H. Zhang, H. Wu, and A. Rountev, "Automated test generation for detection of leaks in Android applications," in Proc. IEEE 11th Int. Workshop Automat. Softw. Test, 2016, pp. 64-70.
- [10] L. Li, T. F. Bissyande, H. Wang, and J. Klein, "CiD: Automating the detection of API-related compatibility issues in Android apps," in Proc. ACM SIGSOFT Int. Symp. Softw. Testing Anal., 2018, pp. 153-163.
- [11] Pradeep Kant- "Android App for Household Services", IEEE Conference on Computer and Information Technology, ISSN-245-228, ISO125:162, Vol no-25, 05/01/2015.
- [12] H. Zhang, H. Wu, and A. Rountev, "Automated test generation for detection of leaks in Android applications," in Proc. IEEE 11th Int. Workshop Automat. Softw. Test, 2016, pp. 64-70.
- [13] Y. Kang, Y. Zhou, M. Gao, Y. Sun, and M. R. Lyu, "Experience report: Detecting poor-responsive UI in Android applications," in Proc. IEEE 27th Int. Symp. Softw. Rel. Eng., 2016, pp. 490-501.
- [14] Mobile Softw. Eng. Syst., 2016, pp. 88-99.
- [15] Dr. Ashok Talwar, "Research Paper on Android App Development", IEEE Conference, Vol no18, SSN-245-228, ISO- 125:162, 25/02/2012.
- [16] Dr. Ashok Talwar, "Research Paper on Android App Development", IEEE Conference, Vol no18, SSN-245-228, ISO- 125:162, 25/02/2012.