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# On-Demand Mobile Application for Household Service

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**Abstract**— With the new demand of convenient home based online solutions for various daily tasks, the need for efficient and easy to use approaches designed to connect households with reliable service providers like plumbers, electricians, carpenters etc. is increasing rapidly. If you are new to a place then it becomes very hectic and time consuming to get a professional and reliable service provider with negotiable prices. Also, the helpers struggle to get work even with proper skills due to lack of connections or marketing. To address this challenge, an On-Demand service application was developed to make it easier for the consumer to get professionals according. The application caters to the issue of both the users as well as helpers by providing them a platform where they can approach each other as per their requirements, the user can search for a nearby helper and the helper gets service request from the user according to their skills. The implementation uses React.js for the frontend, Node.js with Express.js for backend and MongoDB for storing all the data. The APIs were tested using Postman and the application is hosted using Vercel with code managed on GitHub. The developed approach enhances helper accessibility, reduces user effort, and provides a scalable solution for household services. Future work may focus on more advanced version with better user experience.

**Keywords**— On-Demand Services, Price Negotiation, React.js, Node.js, MongoDB.

## I. INTRODUCTION

In recent times, the speed of dependency on the internet is surprisingly far beyond anyone's expectation. For a large day to day works and services like hotel room reservation, railway or plane ticket reservation to ordering small household items for everyday life we are totally dependent on the internet and the online services. We people are so invested in our jobs and activities that we forget to manage and care for us as well as our homes. It takes extra time and connection to search for reliable and professional service provider for different purposes. Different household services like plumbing, carpentering, electrical issues need to be resolved as soon as possible to avoid any possible accidents. When we are new to any place and need such service providers, we become clueless about whom to ask and even if we get the contact we have no idea whether the person is reliable and professional. That's when Service Co comes into role. It provides all the necessary day-to-day service providers like painters, plumbers, carpenter, mechanic etc. You don't require to go anywhere or ask anyone for the workers, just log into our website and search for the worker who can complete the task. This website is a one stop solution for all your household problems. This will also help the workers to generate some extra income in online mode along with their usual shop.

## II. LITERATURE REVIEW

In the course of their study Anitha et al. came up with a web based home service model that was an answer to the emerging need for doorstep services from busy people and e-commerce growing [1]. They have the modular design which helps in improving service coordination, scalability and user satisfaction.

An Android based solution, E-SEWA by Kaushik et al., was developed to link users and maintainers through an app that is built on Firebase-based authentication and real-time data handling [2]. The system further builds trust and effectiveness in service delivery.

Based on the previous work by Bhawarhi et al., their developed home service provider platform was focused on user-centered design, clear pricing and simplified booking processes [3]. Utilization of geo-location and feedback mechanisms will enhance service quality as well as the customer experience.

Smart online home service system has been described by Madhumathi et al. to introduce secure authentication involving online payments and real-time notifications [4]. Their study indicates the importance of standardized pricing and verified providers to users' trust construction.

### III. SYSTEM DESIGN

#### A. Existing Systems

Urban Company: It is an Indian service-based application which connects the customer with trained professionals for home based services like beauty and spa, cleaning and pest control, AC and Appliance repair founded in November, 2014. It is very much popular in India to help people with their difficulties. This app connects people with a variety of different services which are done by specialists. It operates across multiple Indian cities with standardized pricing and quality control.

#### B. Proposed System

To help people in their day-to-day life and make their life easy, we are building a platform for the necessary home services. It is interactive, user friendly and dynamic in nature which enhances the performance and experience of the customer as well as the service provider. The website is being developed using Node.js and Firebase. We will use MongoDB database for our backend to store, manage and process our user data efficiently.

The app will have location-based features because of the use of Google Maps API. It will enable location-based services and help to establish seamless interaction between the two. Users can see the nearby service providers as per their location and the service providers can also get the directions to their customer's address once accepted.

Some key features of our application will be:

- Service booking
- Location-based services
- Real-time updates
- User management

#### C. System Modules

##### 1) Registration

To access our services, the user needs to register on our platform as a customer or a service provider (worker). At first, he/she enters the mobile number to receive an OTP. If already registered user, it will directly land to our homepage, if not, then a form appears on the screen where the customer needs to fill the required personal details to create an account on our site. In case of a service provider, the form requires few professional details as he/she wants to work for. Then the account gets created and the worker lands to our homepage.

##### 2) Admin

This module gives the admin the authority to verify the worker profile as per their professional documents shared by the worker. Any issue related to the user or worker profile is also managed by this module.

##### 3) Service

The customer can come, register with all the basic details, then select the desired location and search for the service that is required and explain about the work that needs to be done then the request will be sent to all the nearby workers. On the worker's side, he/she registers as the service provider with their personal details and the necessary details regarding their profession. When a request from nearby customer is sent, the worker gets notified with the location and the work details. The worker shares his/her offer price which gets notified to the customer. If the customer gets a suitable price in accordance with work then he/she accepts it to proceed further.

### IV. METHODOLOGY

The website uses the model of Client-Server architecture which adds security and efficient services. It is divided into two parts: the frontend as well as the backend. The frontend (client side) has three primary modules- User, Service Provider (worker) and Admin.

All these modules are developed using React.js. React.js is a component-based JS library used to build dynamic and interactive user interface. It simplifies the creation of single-page application. In the User module, the user can create profile, log into the website and search for the service that is required and book accordingly. It provides a simple and clean design which makes it easy to use. The Worker module receives request from the user according to their profession they are registered for. He/she offers the price as per the service request and later provides the service to the user if accepted.

The Admin module controls the entire system. It handles the other two modules (user and worker) in case of any issues and the transaction details such as payment status and transaction ID.

The backend (server side) is developed using NodeJS and ExpressJS, which is a popular JavaScript framework used for creating RESTful APIs. It manages the authorization, authentication for both the user as well as the worker and handles the HTTP requests. It also manages some other functions like booking operations, service management and the communication between the frontend components and the database. It uses the MongoDB database. Our system uses NodeJS and ExpressJS for the interaction of the system with the database. The authentication is completed by JSON Web Token (JWT). JWT is a secure way to send information between client and server. It is mainly used in web applications and APIs to verify user and prevent unauthorized access.

## V. RESULTS AND DISCUSSIONS

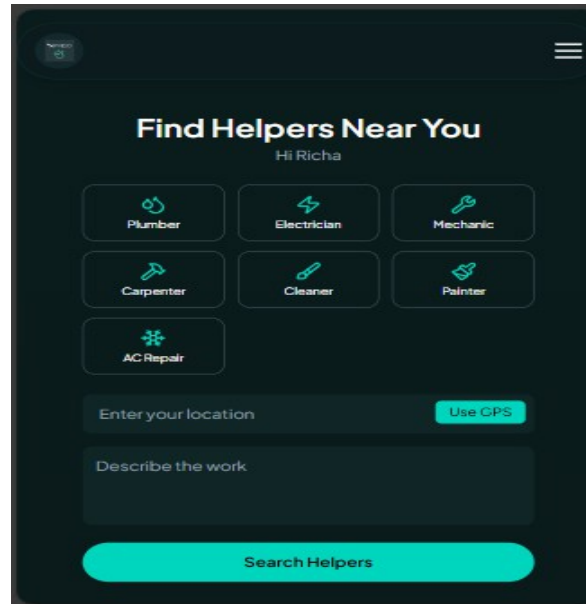


Figure 1: Home Page

Figure 1 is **Home Page** of our application, at the user end. Where user can search for the helper (worker) they need.

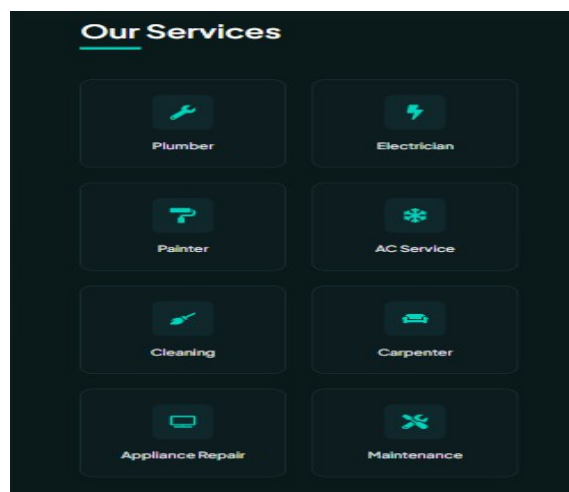


Figure 2: Our Services Page

Figure 2 shows the types of services available for the user at the user end. User can book the helper accordingly.

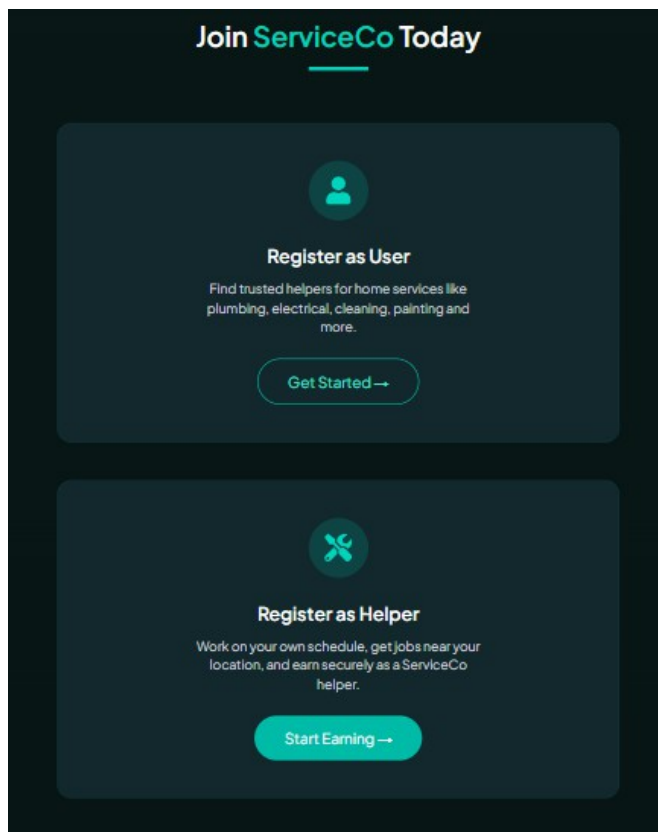


Figure3:RegistrationPage

Figure 3 is where both the User and Helper can register themselves on our site.

## VI. CONCLUSION

ServiceCo is designed to assist the user to complete their household task efficiently in less time as compared to old traditional offline method. It not only help the user for their household activities but also help the worker to have an extra source of income apart from their usual shop/work. It help to reduce unemployment due to the new modern trend of online based approach for every other work. ServiceCo acts as an aggregator between the user and the worker by providing a platform with a variety of different services like plumbing, carpentry, painting etc. Furthermore, we can also add other different services as per the requirements. And change the texts in different regional languages so that it won't be restricted to any one language only and more and more people could use it comfortably. It also follows the new trend of the rapidly growing market of online services.

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