MEND SERVICE EXPERTS PROVIDER SYSTEM FOR RESIDENTIAL AND COMMERCIAL BUILDINGS

Siva Srinivas M[1], Rohit Balaji R[2], Dharshan Kumar S[3], Sangeethaa S N[4]

[1] Student, Computer Science and Engineering, Bannari Amman Institute of Technology, Erode, India.
[2] Student, Computer Science and Engineering, Bannari Amman Institute of Technology, Erode, India
[3] Student, Computer Science and Engineering, Bannari Amman Institute of Technology, Erode, India
[4] Professor, Computer Science and Engineering, Bannari Amman Institute of Technology, Erode, India

ABSTRACT

The current situation has resulted in a strong work culture, with people being engrossed in demanding duties and hectic schedules that cause them to neglect their families. If any unforeseen problems arise, they become sidetracked and prioritize other tasks above the work they need to do. Taking care of maintenance services like carpentry, electrical, plumbing, and pest control is a big issue in cities because people are busy with their everyday lives. It is additionally challenging due to the lack of service providers in a certain location, town, or region. Consequently, creating a website that offers all essential home services at your fingertips is rather helpful in this kind of circumstance. Hence, considering that facet of life entails creating a system that delivers numerous services right to your door with a single click. A system that offers a wide range of services, including laundry, taxi service, cleaners, electricians, painters, plumbers, movers, and packers, among many others. The tiresome process of finding the right service provider can be avoided, and the service provider can be guaranteed to do the desired task, thanks to a general platform that facilitates two-way communications between the service provider and service receiver. Any service provider's abilities can be enhanced by a feedback-based grading system, and service recipients will ultimately obtain better service. to offer geolocation-based real-time technician tracking in order to deliver quicker service.

Keyword: *service-providers, two-way communications, feedback-based*

1. INTRODUCTION

Basic domestic services necessary for the smooth operation and upkeep of your home are referred to as household services. Home maintenance to prevent such issues is linked to home repair, which entails the identification and treatment of issues in a house. Many repairs can be completed as "do it yourself" (DIY) projects, but some may require the help of a competent handyman, property manager, contractor/builder, or other experts due to their complexity, length, or risk. Home improvement and repair are not always the same thing, even though many improvements can come from upkeep and repairs.

Fig:1 Different Types of Services

Larger repairs will frequently be more expensive than investing in comprehensive upgrades. When a mechanical, plumbing, or electrical device breaks down or becomes unusable, maintenance, repair, and operations (MRO) or maintenance, repair, and overhaul (also known as repair, unplanned, or casualty maintenance) takes care of it. It also include carrying out regular tasks that maintain the equipment in working condition (referred to as scheduled maintenance) or stop problems before they start (preventive maintenance). "All actions which have the objective of retaining or restoring an item in or to a state in which it can perform its required function" is one definition of maintenance, repair, and overhaul (MRO). The actions comprise the amalgamation of all technical actions along with their accompanying management, administrative, and supervisory actions."

2. LITERATURE SURVEY

The maintenance and repair of residential and commercial buildings require efficient systems to coordinate service experts and providers. This literature survey aims to explore existing research and practices related to service provider management systems for building maintenance. It will review various aspects, including scheduling algorithms, resource allocation strategies, customer satisfaction models, and integration with building management systems. By analyzing previous studies and industry implementations, the survey will identify key challenges, such as optimizing service dispatch, managing provider availability, and ensuring high-quality service delivery. This comprehensive review will provide a solid foundation for developing an improved "Mend Service Experts Provider System."

In 2021 K. Saundarya, M. Abirami, K. R. Senthil, D. Prabakaran, B. Srimathi and G. Nagarajan [1] presented a paper on a web application for booking on-demand handyman services, built using the MERN (MongoDB, Express.js, React.js, Node.js) stack. MongoDB stores data related to service providers, customers, and requests. Express.js handles server-side logic and APIs. React.js powers the responsive client application for users to register, search providers, and book appointments. Service providers manage profiles and availability. The MERN stack enables scalable and efficient web application development with a full-stack JavaScript approach. However, the paper lacks specific details on algorithms for service provider matching, scheduling optimization, user authentication, payment integration, and real-time notifications. It primarily focuses on the system's implementation using modern web technologies.

Anusa Aravindhan, Kousaka Periyakarupan and Lakshmi Priya in 2020[2] proposed a web application system for facilitating on-demand home services like plumbing, repairs, and maintenance. Built using HTML, CSS, JavaScript, PHP, and MySQL, the system allows user registration, service category browsing, service provider profiles with ratings, and booking/scheduling based on location and availability. It integrates a payment gateway for secure transactions and facilitates communication through messaging and notifications. Responsive design ensures a consistent experience across devices. Implementation details cover the database schema, UI design, and system component interactions. However, specific algorithms for service provider matching, scheduling optimization,

conflict resolution, real-time tracking, third-party integrations, and customer review handling are not extensively discussed. Overall, it presents a practical web application for convenient home service solutions.

In 2020, Afshan Saad, Muhammad Saad and Asia Samreen [3] paper presented a web-based CRM tool for consultants, built using PHP and Angular.js, to facilitate on-demand home services like plumbing, repairs, and maintenance. Key features include user registration, service category listing, service provider profiles with ratings, booking/scheduling based on location and availability, payment integration, and communication via messaging/notifications. It incorporates responsive design for consistent experience across devices and a chat option developed using Angular.js. Implementation details cover database schema, UI design, and system component interactions. However, specifics on service provider matching algorithms, scheduling optimization, conflict resolution, real-time tracking, third-party integrations, and customer review handling are not extensively discussed. Overall, it offers a practical CRM solution for convenient home service management using modern web technologies.

3. PROPOSED SYSTEM

A web-based household service booking system is what the proposed system is designed and develops. It is a rapidly expanding solution utilized by various service industries. Customer relationship management is made simple and user-friendly by using this tool, which also helps to save paperwork, increase productivity, and offer excellent customer service. Any organization that provides workers (professional services) to businesses and individuals must have this software. Customers using this online service scheduling software can select the services they need, whether to make a single or multiple booking, the day and time of the service, the reporting time, the requirements, and other customer information like address, email, and mobile number. With its robust admin panel, admin users may oversee all aspects of the business, including bookings, professional worker management, worker assignment to customers, service and payment management, and much more. Through the MendMan Service Web app, the provider can expedite the service by assigning the booking to MendMan. Python and the Flask Framework are included with this MendMan Service system software so that the admin dashboard and statistics may provide insightful data. Give users of this web application multiple roles and permissions, such as Admin, Service Provider, MendMan, and customers. This MendMan Service app also has RTL and many language support. Push notifications and support for both light and dark themes are included in this easily adaptable, user-friendly application, which enables more interactive communication with customers. Developers may swiftly set up a service booking system to accept bookings from clients from anywhere in just a few minutes thanks to this great app's customizable templates. With ready-to-use pages for signing up, booking lists, payment methods, service type demos, MendMan detail pages, coupons, and more, this MendMan Service app enables businesses to quickly have a fully functional booking service system app.

3.1 Service Provider

It has the features to create or update the profile to inform the user about the services, view the list of jobs requested by the people, accept or reject the services based on availability get the user's details post-request acceptance, update task status to show the occupancy on the app, receive the ratings and reviews for the services provided, track the order history anytime, anywhere and manage the service status and the cost.

3.2 For service seeker (Client/Customer)

It enables easy onboarding with social credentials or phone numbers. It also contains a long MendMan listing. It provides features to view MendMan statistics to analyze the performance, schedule bookings for the services required, rack the MendMan location to help them arrive using the shortest path, instant chat with the service provider once the service booking is done real-time alerts to notify the users about MendMan status and easy payment through wallet, credit/debit cards, or in cash.

3.3 For service seeker (Client/Customer)

It enables easy onboarding with social credentials or phone numbers. It also contains a long MendMan listing. It provides features to view MendMan statistics to analyze the performance, schedule bookings for the services

required, rack the MendMan location to help them arrive using the shortest path, instant chat with the service provider once the service booking is done real-time alerts to notify the users about MendMan status and easy payment through wallet, credit/debit cards, or in cash.

3.4 For admin

The admin is allowed to view the customers and service providers' details, and the jobs are done on a single dashboard, access and manage the reviews posted by the customers for the different service providers, view and manage the service providers' services, view the bookings detail and booking status, view and export the daily, monthly, or yearly report. This leads to Integrated analytics to find hidden insights, manage the earnings, fees, and commissions. The data is stored in the cloud for data security and improved performance.

3.5 Find Nearby MendMan

Simplicity is the sole objective of mobile applications. In order to provide a "on-demand" service, it is crucial to consider the convenience of the clients in locating the closest handymen when developing an Android or iOS application. Therefore, the most crucial feature for on-demand handyman apps is the "Find Nearby MendMan" function. In addition to the area selection, it benefits the users in the following ways. For comparison and calculation purposes, the user can list all neighboring MendMan services together with their profiles and background checks, categorized by category. Customers can view average costs for various MendMan services, such as assembling of furniture, shifting shelves, delivery, and painting of doors and walls, in their houses. The vital information that can be found in all handymen's and taskers' profiles includes user details for background checks, the total number of orders finished, ratings, feedback, response, and comments, a few images, and a list of tasks that he may complete. Users may quickly determine which among all the taskers would be the best by looking at several categories. Takl and Task Rabbit (also known as rabbit task) are excellent real-world instances of MendMan services.

3.6 Schedule Appointments

This is a crucial component for any MendMan program. You risk losing business if a customer is unable to schedule an appointment through the app. Occasionally, it harms the business's reputation as well. Therefore, clients need to be able to book services directly on the applications in order for services of this nature to be effective. Options like "Book now," "Book for tomorrow," "Book for later," and so on might be included in this functionality. This makes it easier and more flexible for clients to reserve one or more facilities according to their preferences.

3.7 Payment Methods

The payment event takes place when a customer makes reservations for MendMan's range of services. Now for this: if customers want to pay you with a digital wallet and the app page doesn't provide that option, they may desert you. Thus, be careful to offer every practical payment method. Debit cards, credit cards, Google Payments, and cash on delivery are a few examples.

3.8 Notification Services

You can set up automatic reminders for future appointments, cancellation alerts for planned appointments, and confirmation alerts when new appointments are booked using the email and SMS notifications.

4. BENEFITS OF PROPOSED SYSTEM
- Simple access to the services.
- preserving time and energy.
- Improve the quality of the services by evaluating the needs of the customers.
- clarity and awareness of the costs associated with the services.
- offer quality services at a reasonable cost.
- familiarity with city-based home service providers.
- Accessibility and usability

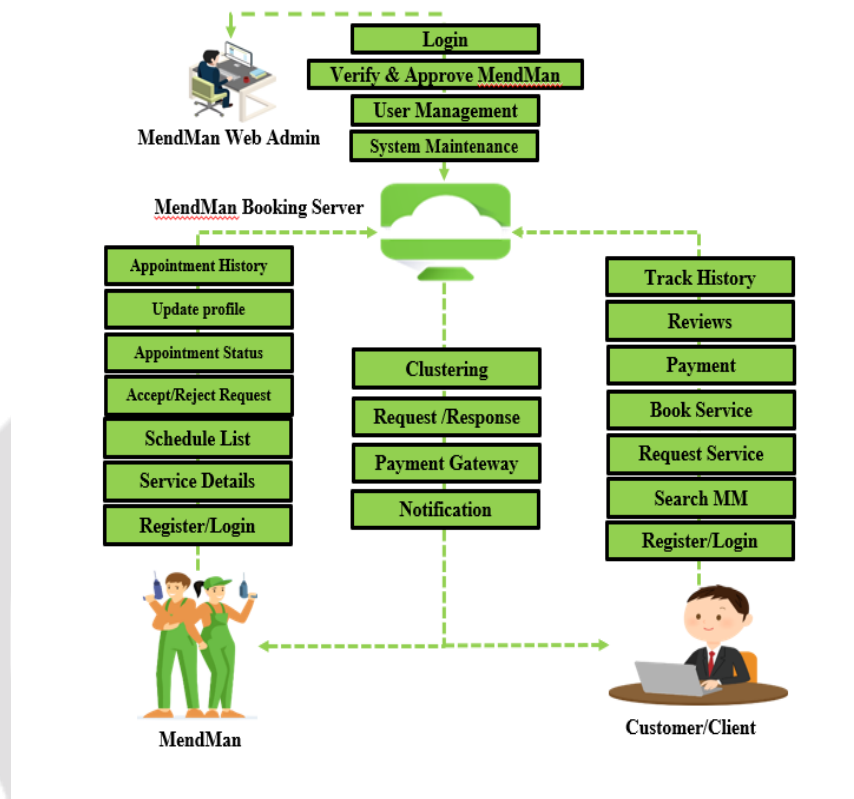- Better offers and financial benefits

5. SYSTEM ARCHITECTURE

Fig:2 Software Architecture of the System

6. RESULT

The new platform connecting property owners with verified service providers has shown promising results since its launch. User feedback, job completion rates, and revenue figures indicate success in addressing common maintenance challenges.

The platform has gained traction among both property owners and service providers, with a growing user base across multiple regions. The platform has facilitated the timely completion of numerous service jobs, streamlining the process of connecting property owners with qualified professionals. The platform has generated revenue through service fees and commissions, demonstrating its viability as a sustainable business model.

User reviews and ratings indicate a high level of satisfaction with the quality of services provided by the verified service providers on the platform. The network of service providers will be expanded to cover additional cities and regions, enabling wider access to the platform's services.
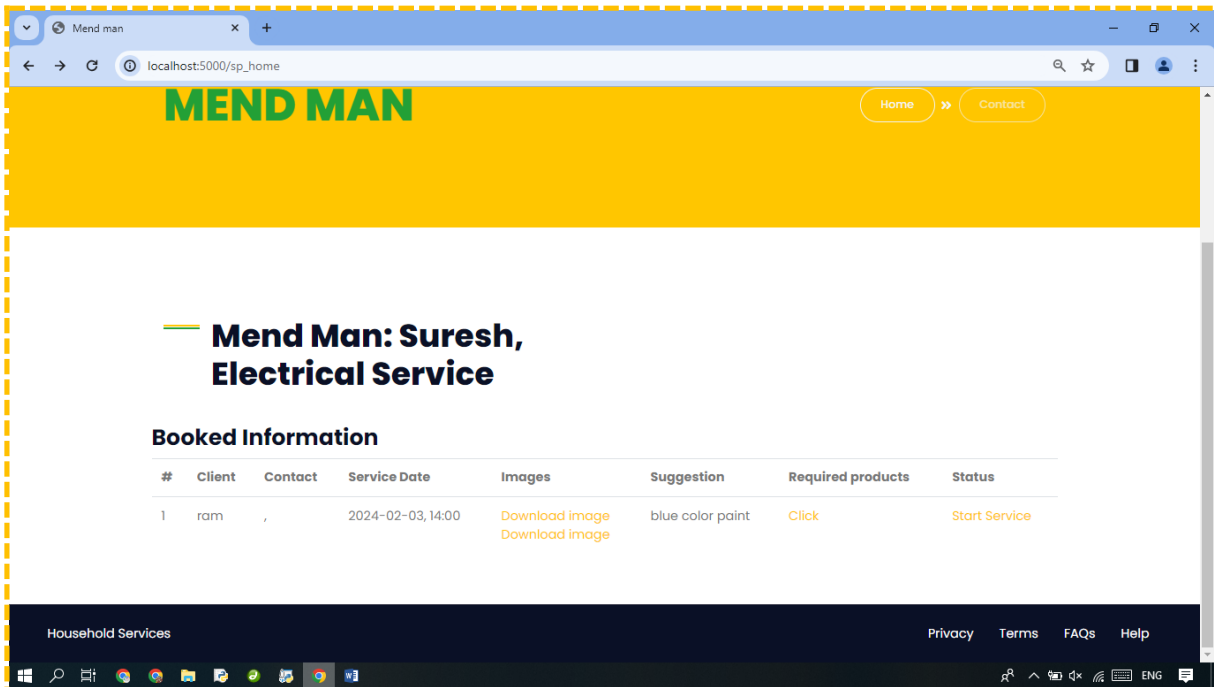
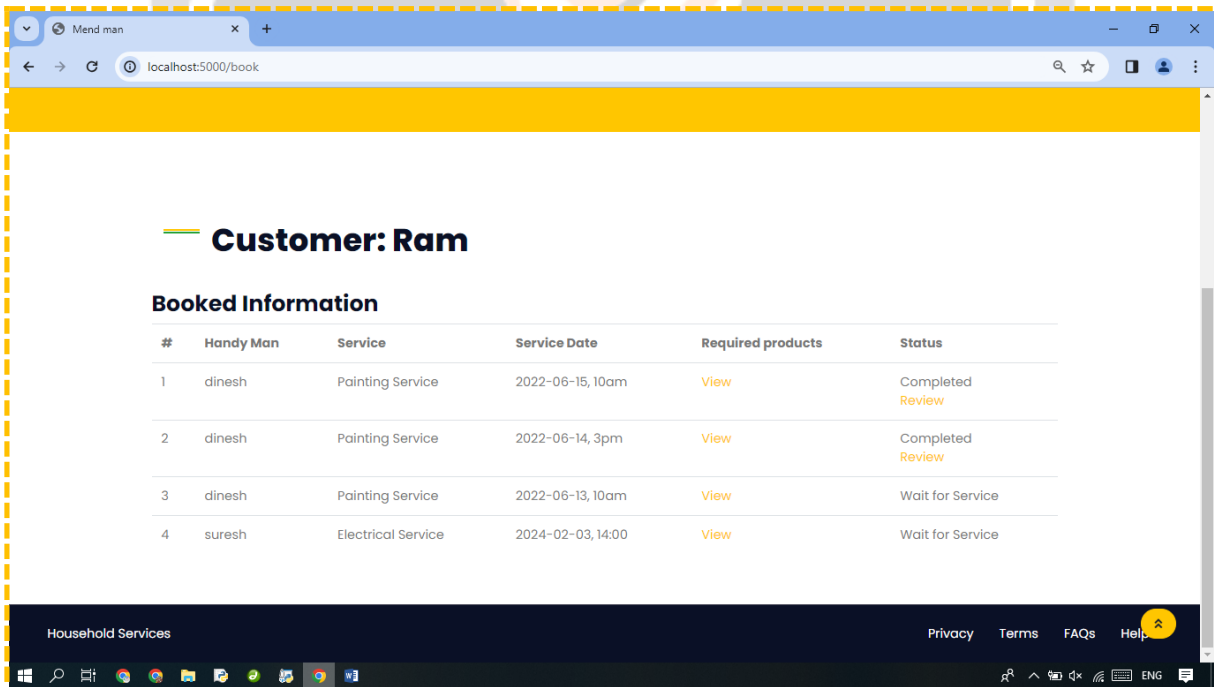Fig:3 Request Received from the Customer

Fig:4 Shows the Booked Information of the Customer

7. CONCLUSION

The need to release a handyman app is rising along with the need for on-demand services. It was justified to propose developing a Web application for location-based services that can be accessed on demand, since the current solutions do not fulfill these requirements. Customers can reserve the urgent services they require and have them delivered right to their door using this on-demand multiple service booking script. The application will work well in situations where handyman services are required right away because it is completely automated and requires little to no human involvement, making it quick and effective. The goal of this handyman web app solution is to provide the best handyman services to consumers, businesses, and handyman professionals. A rating element in the application will be utilized to assess the caliber of services provided. In comparison to the current systems, the results are ranked according to nearest location, making it more appropriate and effective.

8. REFERENCES

[1] K. Saundariya, M. Abirami, K. R. Senthil, D. Prabakaran, B. Srimathi and G. Nagarajan, "Webapp Service for Booking Handyman Using Mongodb Express JS React JS Node JS", 2021 3rd International Conference on Signal Processing and Communication (ICPSC), pp. 180-183, 2021.

[2] AnusaAravindhan, KousakaPeriyakarupan and Lakshmi Priya, "Web application based on
Demand home service system", International Journal of Innovative Research in Advanced Engineering, 2020.

[3] AfshanSaad, Muhammad Saad and Asia Samreen, "Interface Design and Development in CRM tool using PHP and Angular JS for consultants", International Journal of Innovative Research in Advanced Engineering, 2020.

[4] Prachi S. Tambe1, Nikam Poonam2, Gunjal Trupti3,Jadhav Priti4, Parakhe Sonali5, "An Online System forHome Services". International Journal of ScientificDevelopment and Research (IJSDR), Volume 5, Issue 9,Sep. 2020.

[5] K. Aravindhan, K.Periyakaruppan, T.S.Anusa, S.Kousika,A. Lakshmi Priya, "Web Application Based On DemandHome Service System". International Conference onAdvanced Computing & Communication Systems(ICACCS), June 05, 2020

[6] N. M. Indravasan, Adarsh G, Shruthi C, Shanthi K. "AnOnline System for Household Services". InternationalJournal of Engineering Research & Technology (IJERT),ISSN: 2278-0181, May 2018.

[7] Bernard Kasamani, Denis Gikundi. "A Location-basedservice for handyman order placement". Journal of SystemsIntegration, Vol 8, No 4 (2017).

[8] C. Deziel, "How to Repair a Leak Under the Sink", sfgate.com, Jun. 2017, [online] Available: http://homeguides.sfgate.com/repair-leakunder-sink-36418.html.

[9] SheetalBandekar, Avril D'Silva, "Domestic AndroidApplication for Home Services" International Journal ofComputer Applications, ISSN No.0975 – 8887, Volume 148– No.6, August 2016.

[10] Karan, "Research Paper on Household Services", IEEE International Conference on Information Technology, ISSN-145-128, ISO- 225:262, 07/02/2016.

[11] Pradeep Singh, "App Development", Service Booking System, Dream Press, ISN- 187-145, Aug 2015.