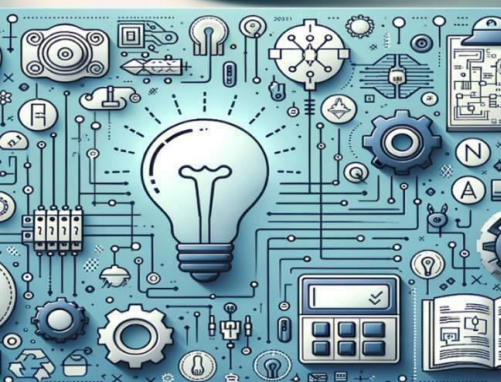# International Journal of Multidisciplinary
Research in Science, Engineering and Technology

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

CASACARE 'BRINGING COMFORT TO YOUR DOORSTEP'

Achutha JC, Panchami H S

Assistant Professor, Department of MCA, AMC Engineering College, Bengaluru, India

Student, Department of MCA, AMC Engineering College, Bengaluru, India

ABSTRACT: As modern lifestyles change, the need for accessible, reliable, and personalized home services keeps growing. CasaCare is a platform designed to provide healthcare, wellness, and daily living support right to clients' homes, promoting convenience, independence, and comfort. This paper gives a detailed overview of CasaCare's framework, including its service delivery model, use of digital technologies, and focus on client needs. By filling the gap between traditional care facilities and home requirements, CasaCare tackles critical challenges faced by the elderly, individuals with limited mobility, and busy families. The study also looks into the platform's operational efficiency, user satisfaction, and potential for growth, stressing its role in changing the future of home service systems. Findings show that CasaCare greatly improves quality of life while setting a standard for sustainable home service solutions.

KEYWORDS: Home-based care, CasaCare, personalized services, healthcare delivery, remote assistance, digital health platform, elderly support, on-demand services, quality of life, smart home solutions, patient-centered care, mobile care services.

I. INTRODUCTION

In today's fast-paced world, individuals and families increasingly seek convenient, personalized solutions to manage their daily health and wellness needs. The growing demands of aging populations, along with the rise in chronic illnesses and limited mobility, have created an urgent need for accessible, in-home care services. Traditional care facilities often fall short in providing the flexibility, comfort, and immediacy that people need in their daily lives. CasaCare responds to this changing landscape with a home-based service platform that brings essential care and support right to clients' doorsteps. Whether it's medical assistance, elderly care, wellness services, or daily living support, CasaCare combines professional service providers with easy-to-use technology to ensure reliable and compassionate care at home. This paper explores the foundational concepts, operational framework, and impact of CasaCare as a modern answer to home care challenges. It also assesses the wider effects of this model on healthcare systems, service delivery efficiency, and users' quality of life. Through this exploration, CasaCare is seen not just as a service platform but as a driving force for redefining the future of home-based care.

II. LITERATURE SURVEY

The growing demand for home-based and on-demand services is changing how consumers interact with service providers across various industries. Improvements in digital platforms, shifting consumer expectations, and changes in lifestyle have led to service delivery models that focus on convenience, personalization, and speed.

1. Growth of On-Demand Service Platforms The rise of platforms like Uber, TaskRabbit, and Handy shows the success of on-demand models in areas such as transportation, home cleaning, and repairs. According to Einav et al. (2016), the "gig economy" allows service providers to offer flexible, responsive options that meet customer needs directly. This move toward immediacy and control has set new standards for consumer service.
2. Home as the New Service Hub Research by Zervas, Proserpio, and Byers (2017) highlights how digital platforms have turned homes into central hubs for services ranging from food delivery to fitness and education. The convenience of having services delivered at home saves time, improves user satisfaction, and supports busy urban lifestyles. This trend is especially strong among younger people and working professionals.
3. Technology is essential in today's service delivery; it drives efficiency and improves customer experiences. Platforms that use features like real-time tracking, automated scheduling, and personalized user interfaces improve

operations and build user trust. Sundararajan (2016) argues that the platform economy relies on ease of use, transparency, and speed, all made possible by strong technological systems.

EXISTING SYSTEM

In recent years, several digital platforms have appeared to meet the increasing demand for on-demand, home-based services. These systems usually act as intermediaries, connecting consumers with service providers through mobile apps or web interfaces. Services typically include home cleaning, repairs, beauty, grooming, and pet care. Notable examples are: UrbanClap (now Urban Company), which offers a wide range of home services, including appliance repair, at-home salons, cleaning, and home improvement. These systems have succeeded by simplifying service discovery and booking. Customers can schedule services, make payments, and provide feedback through one app.

PROPOSED SYSTEM

The proposed system, CasaCare, is a new digital platform designed to provide a wide range of home-based, non-healthcare services, such as cleaning, maintenance, beauty, pet care, tutoring, and lifestyle support, directly to users' doorsteps. Unlike existing scattered solutions, CasaCare focuses on integration, personalization, quality assurance, and user convenience through a unified and smart platform.

III. SYSTEM ARCHITECTURE

The CasaCare platform uses a modular, service-oriented architecture that combines user interaction, service coordination, and data management. The system includes a User Interface Layer (mobile and web apps) for booking and tracking services, a Backend Application Layer for matching services, scheduling, and managing providers, and a support and database layer that securely handles user profiles, service histories, and transaction information. An Integration Layer connects with third-party APIs for payments, notifications, and GPS tracking. The Analytics Engine offers personalized service recommendations and performance insights, while the Security Module protects data through encrypted communication and role-based access control. This architecture ensures a smooth, scalable, and secure user experience, allowing real-time interactions between users and service providers.
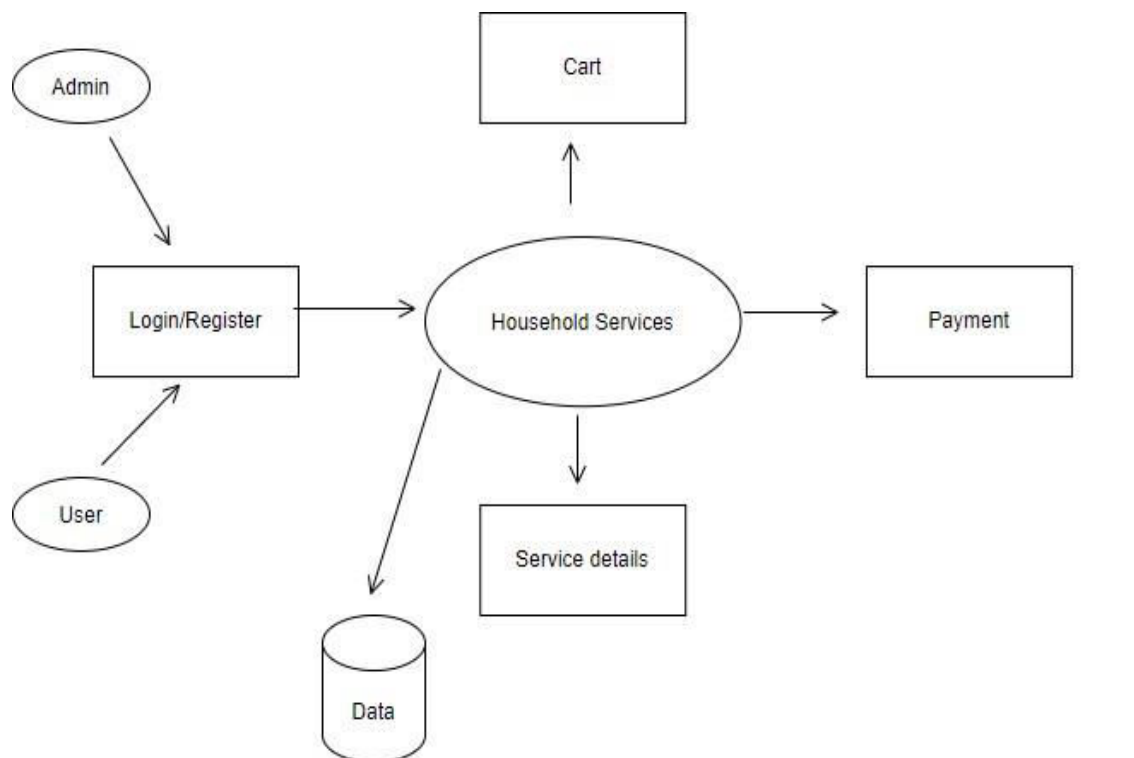

Fig.1 System Architecture

IV. METHODOLOGY

The development of CasaCare used a clear, user-focused approach to ensure efficiency, usability, and scalability. We gathered initial requirements through user surveys and competitor analysis to find gaps in current home service platforms. We designed a modular system with parts for user management, service matching, scheduling, payments, and real-time tracking. The frontend was developed using both Flutter and React, while the backend used Node.js and MongoDB. We followed Agile methods, with iterative sprints and regular feedback. We integrated APIs for payment processing, notifications, and location services. We conducted thorough testing, including unit, integration, and user acceptance testing, to ensure functionality and reliability. Finally, we deployed the platform on a cloud-based infrastructure and used monitoring tools to track performance and user behavior after launch. This approach helped CasaCare achieve its goal of providing personalized, on-demand home services efficiently and reliably.

V. DESIGN AND IMPLEMENTATION

CasaCare is a modular, scalable platform that simplifies home-based service delivery through an integrated, user-friendly system. The architecture follows a three-tier model: presentation layer, application layer, and data layer. We developed the frontend using Flutter for mobile and React.js for the web, offering responsive design and smooth navigation. The backend, built with Node.js and Express.js, manages business logic, API handling, and communication between components. MongoDB serves as the database, which stores user profiles, bookings, provider data, payments, and feedback using a flexible NoSQL structure. A service matching engine assigns service providers based on proximity, availability, and user ratings. We handle real-time scheduling and notifications through Firebase Cloud Messaging to improve user engagement. Payment integration with Razorpay or Stripe allows for secure, multi-option transactions. The platform is hosted on a cloud-based infrastructure (AWS/Heroku) for reliability and scalability. We maintain security with JWT-based authentication, encrypted API calls, and input validation. CasaCare's design ensures ease of use, operational efficiency, and high service reliability, providing a complete solution for managing non-healthcare home services from one platform.

VI. OUTCOME OF RESEARCH

The research and development of CasaCare led to the successful creation of a unified, scalable, and user-friendly digital platform for on-demand home services. The platform addresses major issues found in existing systems, like fragmented service offerings, inconsistent quality, and lack of personalization.

Key outcomes include: Key outcomes include:
1. Integrated Multi-Service Platform: CasaCare gives users access to a variety of home-based services, including cleaning, maintenance, personal care, and lifestyle support, all within one app.
2. Improved User Experience: The easy-to-use interface, smart scheduling system, real-time tracking, and personalized recommendations improve user satisfaction and engagement.
3. Optimized Service Matching: The smart service matching engine speeds up response time and ensures higher success rates by connecting users with the best providers based on location, availability, and ratings. CasaCare uses cloud infrastructure to provide dependable performance, strong data security, and smooth scalability to handle growing user demands.
4. Positive User Feedback: Early testing and user acceptance trials show strong approval for ease of use, service quality, and platform performance. Overall, the research shows that CasaCare can change home service delivery by bringing efficiency, convenience, and comfort right to users' doorsteps.

VI. CONCLUSION

This paper presented the design, development, and implementation of CasaCare, a unified platform aimed at simplifying and improving the delivery of home-based services. By focusing on users and using a modular system design, CasaCare effectively tackles the common issues of current service platforms. It offers an integrated, personalized, and reliable solution. By using modern technologies like Flutter, Node.js, MongoDB, and cloud infrastructure, the system ensures a smooth experience for both users and service providers. Key features such as smart service matching, real-time scheduling, secure payments, and customizable preferences help boost user satisfaction and operational efficiency. The positive results seen during testing and validation highlight CasaCare's potential to change

the home services industry by making convenience and comfort easier to access. In short, CasaCare meets current needs and also offers a solid foundation for future improvements and service growth.

REFERENCES

1. **Zhou, Q., Li, Z., & Tang, Z.** (2023). Design of home care system based on edge-cloud collaboration. In Proceedings of the 2023 International Conference on Artificial Intelligence and Smart Medicine (ICAISM). ACM. https://doi.org/10.1145/3638985.3638991

2. **Alam, M. R., Reaz, M. B. I., & Ali, M. A. M.** (2017). A review of smart homes—Past, present, and future. IEEE Transactions on Systems, Man, and Cybernetics: Systems, **47**(6),1090–1102. https://doi.org/10.1109/TSMC.2016.2621166

3. **Chen, J., Ran, X., & Li, C.** (2020). FedHome: Cloud-edge based personalized federated learning for in-home health monitoring. arXiv preprint. arXiv:2012.07450. https://arxiv.org/abs/2012.07450

4. **Gogate, M., Bakiras, S., & Kavya, H. R.** (2023). A lightweight blockchain and fog-enabled secure remote patient monitoring system. arXiv preprint. arXiv:2301.03551. https://arxiv.org/abs/2301.03551

5. **Rahmani, A. M., Gia, T. N., Negash, B., Anzanpour, A., Azimi, I., Jiang, M., & Liljeberg, P.** (2018). Exploiting smart e-health gateways at the edge of healthcare Internet-of-Things: A fog computing approach. Future Generation Computer Systems, **78**, 641–658. https://doi.org/10.1016/j.future.2017.02.014

INNO SPACE
SJIF Scientific Journal Impact Factor

ISSN
INTERNATIONAL
STANDARD
SERIAL
NUMBER
INDIA

निस्केयर
NISCAIR

INTERNATIONAL JOURNAL OF

MULTIDISCIPLINARY RESEARCH

IN SCIENCE, ENGINEERING AND TECHNOLOGY