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Old age home management system

Sharath M N [1,*], Preethi K M [2], Rajeshwari B M [2], Suhana Banu K S [2] and Shaistha Banu [2]

[1] *Associate Professor, Department of Computer Science and Engineering (AI&ML), Rajeev Institute of Technology, Hassan, India.*
[2] *Student, Department of Computer Science and Engineering, Rajeev Institute of Technology, Hassan, India.*

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Abstract

At some time in their life, everyone experiences the aging process. In every civilization, people who have reached the age of five or ten are considered elderly. The Old Age Home Management System is a complete, user-focused system made to improve resident care, increase communication, and streamline operations in assisted living facilities. Key components like as resident administration, caregiver management, communication, health and wellness, reporting, and analytics are all integrated into this cutting-edge system. This system seeks to save expenses, boost efficiency, and enhance the quality of life for senior citizens by utilizing best practices and state-of-the-art technology. With a comprehensive approach that puts residents' care, dignity, and well-being first, the suggested method has the potential to completely transform the way assisted living facilities run.

Keywords: Old Age Home; Management System; Elderly Care; Smart Aging Solutions; Assisted Living

1. Introduction

An end-to-end smart online application for senior citizens and senior living facilities is offered by a system for elderly home operations project built with PHP and MySQL. For the purpose of maintaining records of the elderly residents of the facility, this application is useful. Every senior person is given a registration number, which makes it easy to retrieve their details. The administrator can view all of the information in brief in the dashboard part, including the total number of services, senior citizens, unread queries, and unread inquiries received. In the page service part, the administrator can oversee the rules, eligibility, and "about us" and "contact us" pages. An home system Admin can read a new inquiry (unread inquiry) and view the read inquiry. The user has the following modules: homepage, services, eligibility, rules, and contact us. Effective management of old age homes is crucial to ensure the delivery of high-quality care and services. However, manual processes, fragmented systems, and inadequate communication can lead to inefficiencies, errors, and decreased resident satisfaction. This system aims to enhance the quality of care provided to elderly residents by facilitating better organization of resident information, medical records, staff schedules, inventory management, billing, and communication channels between residents, staff, and families.

Currently, the registers and files handle the upkeep of the old age home. Important static data is stored in the Word and Excel applications. The full household workflow cannot be managed by any other customizer program. A larger number of files must be consulted for any information pertaining to the applicants. It results in additional labor and time being spent. The new system is intended to be developed in order to address the shortcomings of the current one. Through a single digital platform, the proposed old age home management system seeks to modernize and streamline the facility's numerous operational components. important static information. There is no other customizer program is accessible to handle the whole work stream of the domestic. Any subtle elements with respect to the candidates have to allude a more

* Corresponding author: Sharath M N

noteworthy number of records. It leads parcel of work and more time utilization. To overcome the failure of the existing framework the as of late executed framework is arranged to create.

The proposed ancient age domestic administration framework points to modernize and streamline different operational perspectives of the office through a centralized advanced platform It incorporates modules for inhabitant administration, staff planning, stock following, charging, restorative administrations coordination, action planning, and communication. This framework will move forward proficiency, precision, and inhabitant care by giving real-time get to information, computerizing forms, and upgrading communication among inhabitants, staff, and families. Also, it will prioritize security measures to secure delicate information and guarantee compliance with directions. This incorporates functionalities such as inhabitant registration, wellbeing observing, staff administration, feast arranging, planning exercises, keeping up records, charging, and producing reports. The framework points to move forward proficiency, organization, and communication inside the office, eventually improving the quality of care given to the elderly inhabitants.

2. Literature review

The need for well-run senior living facilities that offer 7 2 sufficient care and assistance to the elderly has increased as a result of the world's aging population. A organized system that guarantees appropriate administration, healthcare monitoring, and resident well-being is necessary for the effective management of these facilities. Numerous studies emphasize how crucial it is to put in place an Old Age Home Management System (OAHMS) in order to improve operations and senior citizens' quality of life. Typically, these systems incorporate tasks like staff administration, financial transactions, activity scheduling, medical care tracking, and resident record-keeping. In addition to increasing operational 15 3 efficiency, effective management systems also guarantee increased accountability, transparency, and general resident satisfaction.

Research on elderly care management emphasizes the role of technology in improving old age home administration. Digital solutions, such as cloud-based management systems and mobile applications, enable staff to efficiently monitor residents' health conditions, medication schedules, and emergency responses. Studies by Gupta et al. (2020) and Kumar & Rathi (2021) suggest that automated data management reduces administrative burdens and enhances decision-making in elderly care facilities. Additionally, integrating biometric authentication and surveillance systems ensures security and personalized services for residents The Internet of Things (IoT) and artificial intelligence (AI) have also been investigated for use in managing senior living facilities, providing real-time tracking of residents' mental and physical health.

Challenges in old age home management, however, include financial constraints, staff shortages, hence the requirement for personalized care. Research shows that a large number of older individuals require specialized medical attention, necessitating an effective system that can monitor their health records and ensure timely interventions. A study by Singh & Verma (2022) highlights that traditional management approaches often lead to inefficiencies, whereas digital solutions significantly improve service delivery. However, implementing technology-based management systems requires substantial investment, training, and maintenance. Furthermore, resistance to technological adoption among elderly residents and caregivers remains a significant barrier.

A well-structured management system ensures smooth administration by integrating various aspects, including: Resident Information Management: Digital records of residents' health, preferences, and emergency contacts improve care quality (Gupta et al., 2020). Financial Management: Automated billing and expense tracking enhance transparency (Kumar & Rathi, 2021). Staff Coordination: A centralized platform helps assign duties and monitor staff performance (Singh & Verma, 2019).

The elderly require specialized medical care. Research indicates that technology-based healthcare tracking improves the efficiency of old age homes: Electronic Health Records (EHR) assist in monitoring chronic illnesses and medication schedules (Patel et al., 2021). IoT-based health monitoring devices track vitals such as heart rate and blood pressure in real time (Sharma & Nair, 2022).

Studies suggest that web-based and mobile applications improve communication between staff, residents, and family members (Brown et al., 2020). Features include: Digital resident profiles Appointment scheduling with doctors Emergency alert systems.

AI-driven chatbots and virtual assistants help elderly residents by providing reminders for medications, hydration, and exercise routines (Wilson & Kumar, 2022). Automation reduces human errors in record-keeping and scheduling.

Security is a major concern in old age homes. IoT-based surveillance systems ensure safety by monitoring movements and detecting falls or unauthorized access (Chenetal2021).

The increasing elderly population necessitates well-structured old age homes for effective care and management. Old age home management involves resident care, medical services, staff coordination, and financial administration. A structured system improves efficiency, transparency. Elderly individuals require consistent medical attention, social engagement, and security. Manual management systems often lead to inefficiencies and lack of accountability. Digital management systems facilitate process optimization and enhance service delivery.

2.1. Specialists

Managing an old age home effectively requires a multidisciplinary team of specialists who ensure the well-being, safety, and comfort of elderly residents. These professionals contribute to various aspects, including healthcare, administration, personal care, and technological management. Their collective efforts help in creating a supportive environment that caters to the physical, emotional, and social needs of senior citizens.

Healthcare specialists are essential to old age homes. **Geriatricians**, who specialize in elderly healthcare, provide medical supervision, diagnose age-related illnesses, and manage chronic conditions such as diabetes, arthritis, and hypertension. Nurses assist with daily medical care, administer medications, and monitor the overall health of residents. Physiotherapists help residents maintain mobility and reduce pain through therapeutic exercises, while psychologists and psychiatrists provide mental health support, addressing issues such as depression, anxiety, and cognitive decline. Additionally, dietitians ensure residents receive proper nutrition based on their health conditions, and pharmacists manage medications to prevent harmful drug interactions.

On the administrative side, old age home **administrators** oversee daily operations, ensuring smooth functioning and compliance with regulations. Finance and accounts managers handle financial planning, donations, and budget allocations to keep the facility sustainable. Human resource managers recruit and train staff, ensuring that caregivers and medical professionals are well-equipped to handle their responsibilities. Legal advisors provide guidance on resident rights, regulatory compliance, and contract management to ensure ethical and lawful operations.

are additionally, support professionals are crucial for ensuring that elderly residents receive personal attention and assistance. **Caregivers** assist with everyday tasks like bathing, dressing, and mobility support, enhancing the quality of life for elderly people who might have physical limitations. Social workers offer emotional support, mediate family communications, and help residents adapt to their living environment. Activity coordinators organize recreational programs, social events, and therapy sessions to keep residents engaged and mentally stimulated. Spiritual counselors, such as pastors or chaplains, provide emotional and spiritual guidance for residents who seek comfort through faith.

In the modern era, technology and IT specialists are becoming increasingly vital in old age home management. **IT managers** oversee digital record-keeping, security systems, and communication tools to facilitate efficient administration. Software developers design management systems that track resident health, staff schedules, and financial transactions. Data analysts assess healthcare trends and optimize service delivery, while cybersecurity experts ensure that residents' medical and personal data remain secure from potential breaches.

Finally, facility and logistics specialists maintain the infrastructure and overall environment of old age homes. **Facility managers** ensure cleanliness, sanitation, and the safety of living spaces, while security personnel monitor entry points and surveillance systems to protect residents from potential risks. Transport coordinators manage transportation for medical visits, outings, and emergencies, ensuring accessibility for elderly individuals. Housekeeping staff play a key role in maintaining hygiene and cleanliness in common areas and resident rooms.

Together, these specialists form a comprehensive support system that ensures the smooth operation of old age homes. Their combined expertise guarantees that residents receive high-quality care, a secure living environment, and a dignified quality of life during their later years.

3. Proposed methodology

To ensure the effective management of an old age home, a structured methodology must be implemented. This methodology involves system design, data management, staff coordination, and resident care. The following steps outline the proposed methodology for developing an efficient Old Age Home Management System (OAHMS):

System Analysis and Requirements Gathering: The first step involves analyzing the existing challenges in old age home management and identifying the system requirements. This includes: Conducting surveys and interviews with residents, caregivers, and administrators. Identifying pain points in manual management, such as record-keeping, financial transparency, and healthcare tracking. Defining functional and non-functional requirements to ensure a comprehensive solution.

- System Design and Architecture: Based on the collected requirements, the system is designed using a modular approach.
- Database Design and Development: A centralized database is developed to store and manage resident records, staff data, financial transactions, and medical histories.
- System Implementation and Development: The system is developed using a combination of front-end and back-end technologies: Front-end: HTML, CSS, JavaScript, React, or Angular for a user-friendly interface. Back-end: Python (Django), PHP (Laravel), or Node.js for processing business logic.
- System Integration and Testing: Before deployment, the system undergoes rigorous testing to ensure smooth functionality
- Deployment and Training: After successful testing, the system is deployed in a live environment
- Monitoring, Maintenance, and Future Enhancements: Post-deployment, continuous monitoring ensures smooth operation: Performance Tracking: Monitoring system efficiency and speed. Bug Fixes and Updates: Regular updates.

4. Methodology in smart property explorer

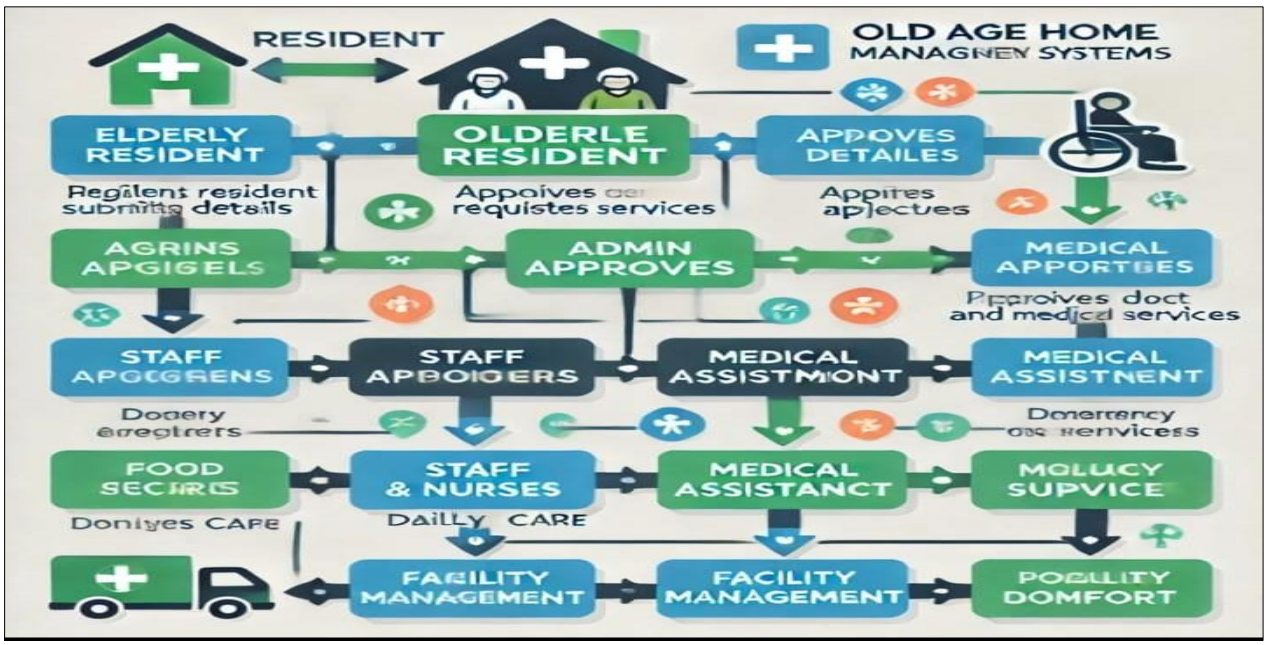

Figure 1 Methodology

Developing an efficient Old Age Home Management System (OAHMS) requires a well-structured methodology to ensure smooth operations, effective healthcare management, and a better quality of life for elderly residents. This methodology involves various phases, including problem identification, system design, development, implementation, and maintenance.

Plan: Identify needs and goals.2. Design: Create a system to manage resident info, staff, and activities.3. Develop: Build the system with necessary features.4. Test: Check the system for errors and improvements.5. Implement: Launch the system in the old age home.6. Maintain: Update and fix issues regularly.

This methodology helps create an efficient and effective management system for old age homes.

5. Conclusion

The "Web Portal for Elderly home operations "has been developed to satisfy all the proposed requirements. The System highly scalable and user friendly. Almost all the system objectives have been met. The system has been tested under all criteria. The system minimize level. This system facilities the user to maintain member, sponsor and expenditure information of the home. It is helpful for the administrator to perform their work neat and good.

Admin user has unique authentication to manipulate the system database that protect the system from practices and damages etc. This system aims to enhance the quality of care provided to elderly residents by facilitating better organization of resident information, medical records, staff schedules, inventory management, billing, and communication channels between residents, staff, and families. Ultimately, the purpose is to improve operational efficiency, optimize resource utilization, and enhance overall satisfaction for both residents and staff members.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

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