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Company Visitor Management System

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Abstract: ***The IA Visitor Management System (VMS) is a web application designed for efficiently managing visitors to a facility or building. It features two types of logins: admin and user. Admin login allows the creation and management of rooms, while user login allows booking rooms and interacting with other users. The main feature of this VMS is creating rooms with specified maximum occupancy and available booking dates and times. Users can browse the list of available rooms and book one that suits their needs, view details of their bookings, and post about them. The app allows users to like and comment on posts related to booked rooms, building a sense of community. Users can check room availability and schedules to book. Admin can manage all the rooms, approve or reject bookings, and view a list of all bookings made. The IA Visitor Management System provides a user-friendly interface for efficient management of visitors and rooms, allowing users to interact with each other about their bookings.***

I. INTRODUCTION

The IA Visitor Management System (VMS) is a web application designed to streamline the process of managing visitors to a facility or building. The traditional process of managing visitors involves a lot of paperwork, manual record-keeping, and a lack of real-time updates. With the IA VMS, administrators can efficiently manage visitors, allowing for a more organized and secure facility.

The IA VMS has two types of logins: admin and user. The admin login is only available to authorized personnel, allowing them to create and manage rooms in the facility. The admin can specify the maximum occupancy, set the available booking dates and times, and manage all bookings made by the users. This feature is particularly useful for facilities with limited space, such as conference rooms or event spaces, as it allows the administrator to efficiently manage the use of these spaces.

On the other hand, the user login allows users to browse through the list of available rooms, book a room that suits their needs, and interact with other users. Users can view a list of booked rooms, see the details of their booking, and post about their booking on the app. The app also allows users to like and comment on posts related to booked rooms, building a sense of community among the users.

One of the key features of the IA VMS is the ability to check the availability of rooms and their schedules. Users can easily see when rooms are free and bookable, eliminating the need for back-and-forth communication with the administrator. This feature not only saves time but also ensures that there are no conflicts in bookings.

The IA VMS is designed with security in mind. The administrator has complete control over the rooms and bookings, ensuring that unauthorized access is prevented. Users must be authenticated before they can access the system, and all information is stored securely. The app also keeps a record of all bookings made, providing an audit trail for future reference. The system provides a user-friendly interface that is easy to navigate for both administrators and users. It streamlines the process of managing rooms, bookings, and visitors, allowing for a more organized and secure facility. With real-time updates, the IA VMS provides an efficient solution to the traditional manual process of managing visitors.

II. LITERATURE SURVEY

1) "Visitor Management System for Educational Institutes" by Shweta Khurana, Jitendra Jain, and Y. K. Jain

This literature survey focuses on the development and implementation of a visitor management system for educational institutes. The authors highlight the need for such a system to improve in process for-security and streamline the checkvisitors. They discuss the use of technologies such as RFID and biometric authentication, as well as the development of a mobile application for visitors to book appointments and receive notifications. The study emphasizes the importance of customization to meet the specific needs of educational institutes, and concludes that such systems can greatly enhance the visitor experience.

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2) *"Development of a Web-Based Visitor Management System for the University of Gondar Library, Ethiopia" by Abebe Reta, Muluken Gizaw, and Dawit Tsegaye*

This literature survey discusses the implementation of a web-based visitor management system for a library in Ethiopia. The authors emphasize the importance of such systems in improving efficiency and reducing waiting times for visitors. They discuss the use of a database to store visitor information, as well as the development of a mobile application for remote access. The study highlights the need for careful planning and stakeholder engagement in the development process, and concludes that such systems can greatly benefit libraries and other similar facilities.

3) *"A Visitor Management System Based on IoT and Face Recognition" by Rongjian Zhang, Ming Liu, and Hongliang Ren*

This literature survey explores the use of IoT and face recognition technologies in visitor management systems. The authors discuss the benefits of these technologies in terms of efficiency and security, and describe the development of a prototype system using a Raspberry Pi and camera module. The study concludes that such systems have great potential for improving visitor management, but notes the need for further research to address issues such as privacy and reliability.

4) *"A Secure and Efficient Visitor Management System using RFID and Biometric Authentication" by Karthick Raja and C. Senthil Kumar*

This literature survey focuses on the use of RFID and biometric authentication in visitor management systems. The authors highlight the importance of security in such systems, and discuss the development of a prototype system using a microcontroller and fingerprint sensor. The study emphasizes the need for integration with existing security systems and the need for careful consideration of data protection laws.

5) *"Automated Visitor Management System using Wireless Sensor Networks and RFID Technology" by B. V. Ramana Murthy and K. Srinivas*

This literature survey explores the use of wireless sensor networks and RFID technology in visitor management systems. The authors discuss the development of a prototype system using a Raspberry Pi and wireless sensors, and highlight the benefits of such systems in terms of automation and efficiency. The study emphasizes the need for careful consideration of privacy and security concerns.

6) *"Design and Implementation of a Web-Based Visitor Management System for a Public Organization" by Mohammed Ali Mohammed and Fikre Dagne*

This literature survey discusses the development and implementation of a web-based visitor management system for a public organization. The authors highlight the benefits of such systems in terms of improving efficiency and reducing waiting times for visitors. They discuss the development of a database to store visitor information, as well as the use of a mobile application for remote access. The study emphasizes the need for careful planning and stakeholder engagement in the development process.

7) *"Smart Visitor Management System using IoT and Cloud Computing" by Shruti Gupta, Ankit Nanda, and Arun Solanki.*

In this study, the authors propose a smart visitor management system that utilizes IoT and cloud computing technologies to manage visitors to a facility. The system includes sensors to detect the presence of visitors, and the data collected from these sensors is transmitted to a cloud server for processing. The system can then provide real-time information about the number of visitors present in the facility and their location.

8) *"Intelligent Visitor Management System Using Facial Recognition" by Raghavendra Goudar and Ravikumar Hulipalled.*

This study proposes an intelligent visitor management system that uses facial recognition technology to manage visitors to a facility. The system includes a camera that captures the image of the visitor, and the image is processed to extract facial features. The system can then compare the extracted features with a database of known faces to identify the visitor.

9) *"Smart Visitor Management System Using Wireless Sensor Networks" by S. Bharath Kumar and K. Manikantan.*

This study proposes a smart visitor management system that uses wireless sensor networks to manage visitors to a facility. The system includes sensors that detect the presence of visitors, and the data collected from these sensors is transmitted to a central server for processing. The system can then provide real-time information about the number of visitors present in the facility and their location.

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10) "Visitor Management System Using Mobile Applications" by M. Nivetha and G. Gopinath.

This study proposes a visitor management system that utilizes mobile applications to manage visitors to a facility. The system includes a mobile application that visitors can use to register their details and request access to the facility. The system can also provide real-time information about the number of visitors present in the facility and their location.

III. SYSTEM ARCHITECTURE

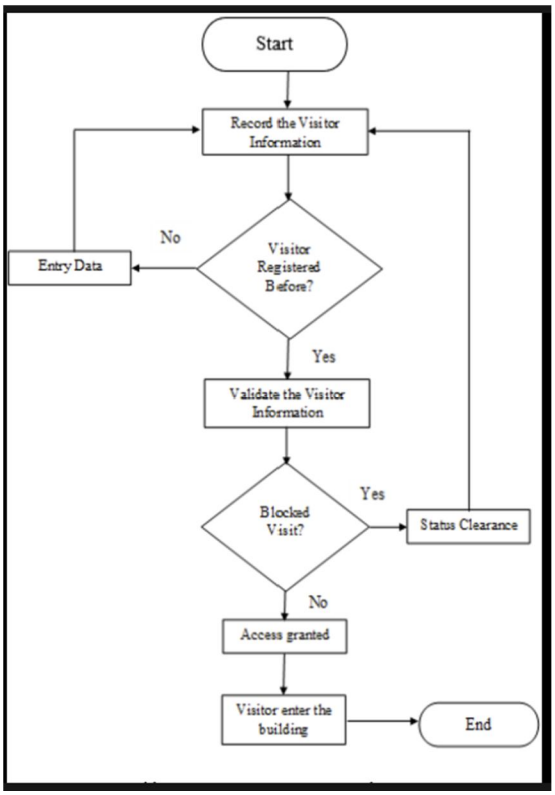

Fig 1. System Flow of Paper visitor management system

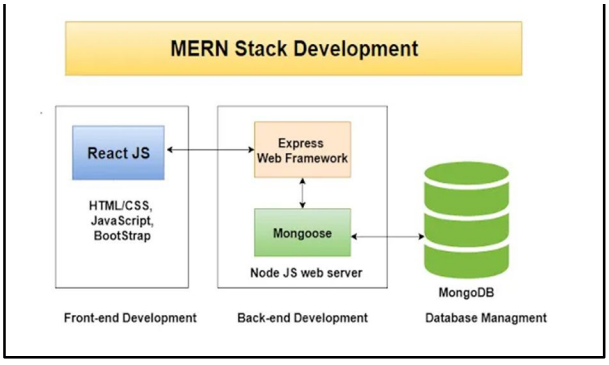

Fig 2. System Architecture for Paper visitor Management System

The front-end of the system is built using ReactJS, which is a popular JavaScript library for building user interfaces. ReactJS provides a responsive and intuitive interface for users to interact with the VMS. The front-end is designed to be user-friendly and easy to navigate, with a clean and modern interface.

The back-end of the system is built using the MERN stack, which includes MongoDB, Express, React, and Node.js. MongoDB is used as the database, which provides scalability and flexibility to the system. Mongoose is used as the Object Data Modeling (ODM) library for MongoDB, which simplifies the interaction with the database.

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Express is used as the web application framework for Node.js, which provides a robust and scalable platform for building web applications. Node.js is used as the server-side platform, which enables the system to handle a large number of requests simultaneously.

The VMS is designed to be scalable and flexible, which makes it suitable for use in a variety of different settings. The use of MongoDB as the database provides scalability and flexibility to the system, while the use of Mongoose simplifies the interaction with the database. The use of ReactJS and the MERN stack provides a responsive and intuitive interface for users to interact with the VMS.

IV. SYSTEM IMPLEMENTATION

A. *Existing System*

These sheets and paper based visitor logs. The existing system for visitor Management involves manual process such as sign consuming and error-manual processes are often time prone, leading to inefficiencies and security concerns. In addition, manual processes do not provide real-time information and are difficult to manage.

Many organizations have turned to digital solutions to automate their visitor management processes. These digital solutions typically involve the use of a software system that allows visitors to sign in and out electronically, while providing real-time information to the organization.

However, these existing digital systems often have limitations in terms of their features and functionality. Some of the limitations of existing systems include:

1) *Limited Customization:* Many existing systems have limited customization options, which may not meet the specific needs of an organization.
2) *Complex Interfaces:* Some existing systems may have complex interfaces that are difficult for users to navigate, leading to frustration and errors.
3) *Limited Integration:* Many existing systems do not integrate with other software systems used by the organization, leading to duplication of effort and inefficient workflows.
4) *Limited Mobility:* Some existing systems may not be mobile-friendly, making it difficult for users to access the system on-the-go.
5) *Limited Security:* Some existing systems may have limited security features, putting the organization at risk of data breaches and other security threats.

The limitations of existing systems demonstrate the need for a more comprehensive and user-friendly visitor management system. The IA Visitor Management System aims to address these limitations by providing a customizable, user-friendly, and secure platform for managing visitors to a facility or building. The system provides a range of features that allow administrators to create and manage rooms, while allowing users to easily book and interact with other users. The use of MERN stack, ReactJS, Mongoose, and MongoDB also provides a scalable and flexible platform for the system, allowing it to adapt to the changing needs of the organization.

B. *Proposed System*

The proposed IA Visitor Management System is a web application designed to efficiently manage visitors to a facility or building. The system provides two types of logins: admin and user. The admin login allows the admin to create rooms and manage them, while the user login allows users to book rooms and interact with other users.

One of the main functionalities of the system is the ability to create and book rooms. This functionality is available only to the admin who can create new rooms, specify the maximum occupancy, and set the available dates and times for booking. Once a room has been created, users can browse through the list of available rooms and book one that suits their needs. The system provides an intuitive user interface that allows users to quickly and easily browse through available rooms, check availability, and book a room.

Another key functionality of the system is the ability to add posts related to booked rooms. Users can share their experience of the room, post pictures and videos, and ask questions about the room. The system also allows users to like and comment on posts related to booked rooms, which can help to build a sense of community among the users. This functionality promotes interaction and engagement among users and can help to improve the user experience.

The system also includes a search functionality that allows users to search for other users and rooms. This functionality is particularly useful for users who are looking for specific rooms or who want to connect with other users who have similar interests. The search functionality provides a user-friendly interface that allows users to quickly and easily find the information they need.

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The system also includes a calendar of upcoming events, which allows users to view upcoming events and book rooms for those events. This functionality provides users with an easy way to keep track of important events and book rooms in advance. With its intuitive interface and advanced functionalities such as creating and booking rooms, adding posts, liking and commenting on posts, searching for users and rooms, and viewing the calendar of upcoming events, the system is designed to provide an optimal user experience. It provides a scalable and flexible platform that can adapt to the changing needs of the organization and is built using the latest technologies such as MERN stack, ReactJS, Mongoose, and MongoDB.

V. RESULTS

The results of the IA Visitor Management System project showed that the web application was able to efficiently manage visitors to a facility or building. The system provided a user-friendly interface for both admin and users to manage and book rooms, and also provided a platform for users to interact with each other about their bookings.

The create and book rooms functionality allowed the admin to create new rooms, specify the maximum occupancy, and set the available dates and times for booking. Once a room was created, users could browse through the list of available rooms and book one that suited their needs. The system also allowed users to view a list of booked rooms, see the details of the booking, and post about them on the app.

The like and comment functionality allowed users to interact with each other about their bookings, which helped to build a sense of community among the users. Additionally, the search functionality allowed users to search for other users and rooms, making it easier to find relevant information.

The view calendar functionality provided an easy way for users to see upcoming events and booked rooms. This helped users to plan their bookings and also allowed the admin to manage the rooms more efficiently. The system was able to efficiently manage bookings and provide a platform for users to interact with each other about their bookings. The project demonstrated the feasibility of using the MERN stack, ReactJS, Mongoose, and MongoDB to build a scalable and efficient web application. The system has the potential to be further enhanced with additional features and functionalities in future iterations.

VI. AND FUTURE SCOPES CONCLUSIONS

The IA Visitor Management System project has shown that using the MERN stack, ReactJS, Mongoose, and MongoDB is an effective way to create a user-friendly web application that can manage visitors to a building or facility. The system has demonstrated that it is easy to use for both users and the admin, providing the platform for booking rooms, interacting with other users, and managing rooms efficiently. The system has provided the users with the functionality to create and book rooms for their events. They can view available rooms and make reservations based on the date, time, and the number of people attending the event. Moreover, users can interact with other users about their bookings through the posts feature. Users can share their opinions on booked rooms, make comments, and like the posts, which enhances the sense of community.

Additionally, the system has allowed the admin to manage the rooms efficiently. They can create new rooms, update the details of existing rooms, and delete rooms that are no longer required. Admin can also view the list of all bookings and approve or reject them as necessary. The system has made it easy for the admin to maintain the rooms and track the bookings. The future scope of the IA Visitor Management System project includes adding new functionalities to improve the user experience and efficiency of the system. This includes integrating the system with external calendar systems such as Google Calendar or Microsoft Outlook, sending email or SMS notifications to users, and integrating with access control systems. The system could also provide reporting and analytics features for the admin to track room usage and provide insights to help optimize room availability and usage. The system provides a user-friendly interface for users and the admin to manage and book rooms, interact with other users, and manage rooms efficiently. The future enhancements and functionalities will make the system more efficient and user-friendly, providing a better experience for all the users.

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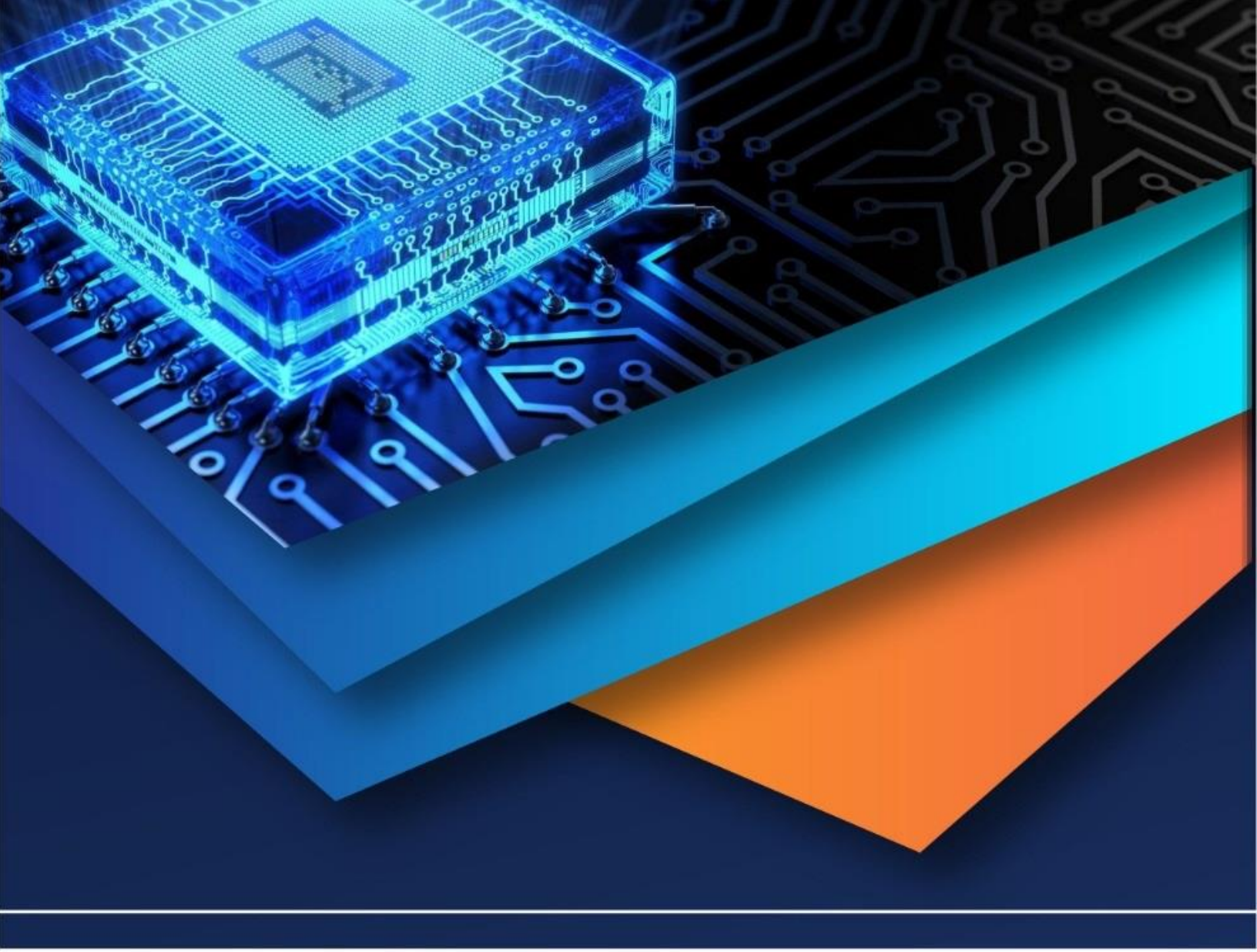

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