DORMITORY360

Abhishek Digarse, Student, Dept. of Computer Science, Medi-caps University
Aditya Choudhary, Student, Dept. of Computer Science, Medi-caps University
Aishwarya Prajapati, Student, Dept. of Computer Science, Medi-caps University
Prof. Shrikant Telang, Assistant Professor, Dept. of Computer Science, Medi-caps University

Abstract —
DORMITORY360 is a web application through which all the rental properties are easily available for the users. As we know, people deal with the many difficulties while searching for the rental property and also have to visit several places, which takes a lot of time but our goal is to create a web page which will help users to find the rental properties in few minutes without the help of brokers. Some people have to resettle from their residential area to somewhere else for a particular time so they prefer to rent PG, houses and hostels etc. So, people will use our platform for finding safe and secure and assured places at their convenience. Our DORMITORY360 will play a major role for finding the rental properties which meets the customer needs in their budget and made the life of users easier and simple. "DORMITORY360" is an innovative hostel management system designed to streamline operations for property owners and enhance the experience for users seeking accommodation. The system incorporates a user-friendly website where property owners can conveniently update information about their accommodations, such as availability and amenities. Payment processing is seamlessly integrated, ensuring that property owners can easily handle rent and platform fees. Meanwhile, users can visit the site, filter through the available accommodations based on their preferences, and view detailed information about each listing. With a carefully crafted database schema, DORMITORY360 ensures efficient data management and retrieval, enabling a smooth experience for both property owners and users alike. This comprehensive solution aims to revolutionize the hostel management industry by providing a convenient platform for all stakeholders involved.

Keywords — Dormitory, Rental Properties, Accommodation, User Interface, Transparency, Technology Integration.

I.   Introduction
DORMITORY360 is a platform that can potentially help many of its users to find some accommodations that would not only meet their needs but also provide for their requirements of comfort as well. Misyam, M.R., et al. (2021) and his team demonstrated that a house is a place where people gather, they can improve their life-style, and can grow economically as well as socially [1]. DORMITORY360 can potentially provide for an interface between the users and property owners or landlords to catalyze the two-party agreement or settlement. This will Ultimately also help to build a healthy community between both those who are in needs and those who can provide for.

The Dormitory360 is a comprehensive software solution designed to streamline and automate the operations of a hostel or dormitory facility. It serves as a centralized platform for managing various aspects of hostel administration, including room allocation, resident information, bookings, payments, maintenance requests, and more.
This system aims to simplify the tasks of hostel administrators, staff members, and residents by providing an efficient and user-friendly interface to perform their respective activities. By leveraging technology, the Dormitory360 enhances efficiency, reduces manual errors, improves communication, and enhances overall organization within the hostel environment.

Key features of a Dormitory360 typically include:
*   User management
*   room management
*   booking management
*   payment management
*   feedback management
*   maintenance management
*   notification management

II.   Literature Survey

As we know that most of the property owners or landlords manage the details of property and tenants on papers. Each detail of tenants maintained on a paper. Currently the most property managers manage property and tenant's details on papers. Once customers find a vacant house, they can call or email manager of the houses indicating the size of the house they would like rented to them [2]. In contemporary society, where time is a valuable commodity, property owners often find themselves grappling with manual and time- consuming tasks such as lease management, rental collection, and property maintenance tracking [3]. Every landlord maintains a file which contain all the information about his rental property. All the basic information related to property like location of property, size, rent, deposit as well as the details of tenant also maintained in the file like Name of the tenant, contact number and so on. As it is implemented manually and difficult to maintain the file and not more friendly as Graphical User Interface. So, we need to evolve and upgrade the existing system. So, the main objective of upgrading the existing system are:

By developing DORMITORY360, all the rental properties easily available for users. It allows to save and update the record of user and tenants.

III.   Problem Definition

The main problems that the users face in this whole process is the brokerage or the third-party involvement as the mediators. Furthermore, they must spend hours, even days of their precious time for this process. The current system has too much manual work from filling a form to filing a document, delivering manifesto. This increases burden on workers but does not yield the results it should [4]. In the end it becomes an overall exhausting situation that has no other way around.

The users have no idea what they are getting into when they set out to browse their selections. Also, the brokers often do not provide well assessment of the locality as well. Thus, even at times user finds an accommodation to fit its requirements and needs, they are then being tasked to compromise with the environment around. It's even more dangerous for the user.

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IV.   Solution

For this problem we found a simple solution with an even easier implementation. It is named DORMITORY360, as in "DORMITORY" a type of rental accommodation that allows people of all backgrounds, personalities and cultures to live under the same roof with equal resources. A place where all their needs are taken care of. And "360" is meant to be conceptualized as to reach all directions with this idea to provide users to select their desired accommodation in their desired locality.

DORMITORY360 will provide for a working user-friendly interface between the users who seek the rental properties and the owners of these properties. It further eliminates the third-party involvement and brokerage of brokers. It also aims to reduce week long exhausting process of hose hunting to mere

days or even hours. The users have complete idea of what type of facilities they are looking for. They can communicate with owners without third party involvement and negotiate with the without breaking any code of conduct or going over someone's head.

V.   Methodology

DORMITORY360 encompasses a robust integration of SQL, Java, JavaScript, HTML, and CSS to efficiently handle various aspects of hostel operations. SQL, or Structured Query Language, serves as the backbone for database management, enabling seamless storage and retrieval of accommodation related data such as student records, room allocations, and billing information. Integration with AI and Machine Learning:

Artificial Intelligence and Machine Learning technologies have the potential to transform property management by enabling the prediction of tenant behaviors, maintenance needs, and rent defaulters [5]. Java plays a pivotal role in the development of the system's backend, facilitating the implementation of core functionalities and business logic. A model is a link between the server and the database. Now, whenever we need the data, it will need some middleware or bridge which can convert that data in a transmittable/HTTP response or more generally a web-transmittable format [6]. JavaScript complements this by enhancing user interactivity and responsiveness within the system's web-based interface, crafted using HTML and CSS. HTML provides the structure for presenting accommodation management functionalities, while CSS ensures a visually appealing and intuitive user experience. Together, these technologies synergize to create a comprehensive solution tailored to streamline administrative tasks and enhance the overall accommodation experience for both students and staff.

In the SQL schema for DORMITORY360, the database structure is meticulously designed to support the various functionalities of the hostel management system. At its core, the schema includes tables to store essential information such as property details, user profiles, booking records, and payment transactions.

For property details, the schema may include fields such as property ID, property name, address, available rooms, amenities, and pricing. This allows property owners to efficiently manage and update their accommodation listings.

User profiles are another crucial aspect of the schema, featuring fields for user ID, username, email, password, and any additional profile information. This enables users to create accounts, log in securely, and access personalized features such as saved searches and booking history.

Booking records are stored in the database to track reservations made by users. These records typically include details such as booking ID, user ID, property ID, check-in and check-out dates, and payment status. Finally, the schema includes tables to handle payment transactions, recording details such as transaction ID, amount, payment method, and timestamp. This ensures secure and transparent processing of rent payments and platform fees.

Overall, the SQL schema for DORMITORY360 is designed to efficiently manage data related to property listings, user accounts, bookings, and payments, providing a solid foundation for the smooth functioning of the hostel management system.

This will include two methodologies-

1.   Baseline Study Methodology-Owners will upload the data regarding their rental property and the users can check the available rental properties according to their comfort and needs. We will used Structured Query Language and PHP to collect the data and store it in databases.

2.   Software Study Methodology-The website will be developed for all the users and owners by using web designing languages like html, CSS and bootstrap etc. which consist of three parts Client, Web Server and Database Server.

VI.   Project View

The use case diagram for DORMITORY360 illustrates the interactions between three main actors: Owner, Admin, and User.

Owner:

Manage Room: This use case allows the owner to add, update, or delete information about rooms in their property, including details such as availability, pricing, and amenities.

Login: The owner can log in to the system using their credentials to access their account and manage their property listings.

Logout: This use case enables the owner to securely log out of their account, ending their session within the system.

Payment: Owners can make payments for platform fees or manage rental payments through this use case, ensuring seamless financial transactions within the system.

Admin:

Supervise Use Cases: The admin actor oversees all use cases within the system, ensuring smooth operation and adherence to platform guidelines.

Manage Platform: Admins have the responsibility to manage the overall platform, including user accounts, property listings, and system settings. This use case allows them to perform administrative tasks such as adding or removing users, reviewing flagged content, and adjusting platform settings.

Delete Unwanted Content: Admins have the authority to remove any unwanted or inappropriate content from the platform to maintain its integrity and ensure a positive user experience.

User:

Login: Users can log in to the system using their credentials to access personalized features and functionalities.

Logout: Similar to owners, users can securely log out of their accounts to end their session within the system. View User Details: This use case enables users to view their profile information and make any necessary updates or changes.

Overall, the use case diagram outlines the various interactions and responsibilities of each actor within the DORMITORY360 hostel management system, ensuring efficient operation and user satisfaction.
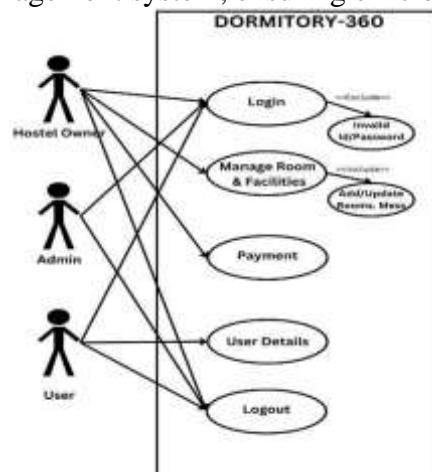
VII.   Result

The implementation of a Dormitory360 yields several tangible results:

1.   Streamlined Operations: Administrative tasks such as room allocation, booking management, and maintenance requests are automated, reducing manual effort and streamlining processes.

2.   Improved Efficiency: With automated processes, hostel staff can handle tasks more efficiently, leading to faster response times and better overall management.

3.   Enhanced Resident Experience: Residents benefit from smoother booking procedures, easier access to information, and prompt resolution of issues, resulting in higher satisfaction levels.

4.	Better Resource Utilization: Real-time tracking of room occupancy and maintenance schedules allows administrators to optimize resource allocation and minimize downtime.

5.	Financial Management: The system facilitates accurate tracking of payments, reducing the risk of revenue loss and ensuring better financial management.

6.	Increased Security: User authentication and access control features enhance data security, protecting sensitive information and ensuring compliance with privacy regulations.

7.	Scalability: The system can accommodate the growth of the hostel facility and adapt to changing needs, ensuring it remains effective in the long term.

## VIII.	Discussion

The implementation of a Dormitory360 brings about several key points of discussion:

1.	Efficiency and Productivity: Discuss how the automation of administrative tasks and streamlined processes contribute to improved efficiency and productivity among hostel staff. Analyze specific examples of timesaving features, such as automated room allocation, online booking systems, and maintenance request tracking.

2.	Resident Experience: Evaluate the impact of the system on resident satisfaction and experience. Discuss how features like online booking, easy access to information, and prompt issue resolution contribute to a positive resident experience.

3.	Resource Optimization: Explore how the system helps optimize resource allocation within the hostel, such as room occupancy management and maintenance scheduling. Discuss the potential cost savings and operational efficiencies gained from better resource utilization.

4.	Financial Management: Assess the effectiveness of the system in managing hostel finances, including payment processing, invoicing, and financial reporting. Discuss how the system helps reduce revenue leakage, improve cash flow, and ensure compliance with financial regulations.

5.	Security and Compliance: Examine the security measures implemented in the system to protect resident data and ensure compliance with privacy regulations. Discuss the importance of data security in hostel management and how the system addresses potential security risks .

6.	Scalability and Adaptability: Consider the system's scalability and adaptability to accommodate the changing needs of the hostel, such as facility expansion or the addition of new features. Discuss how the system can grow with the hostel and remain effective in the long term.

7.	Community Engagement: Explore how the system fosters community engagement among hostel residents through features like communication channels, event announcements, and feedback mechanisms. Discuss the importance of resident feedback in improving hostel services and enhancing the overall resident experience.

8.	Challenges and Limitations: Identify potential challenges or limitations associated with the implementation and use of the hostel management system, such as staff training requirements, system integration issues, or user adoption challenges. Discuss strategies for overcoming these challenges and maximizing the benefits of the system.

## IX.	Conclusion

The conclusion of a Dormitory360 would typically summarize the key features and benefits of the system, such as efficient room allocation, streamlined check-in and check-out processes, accurate billing, effective communication with residents, and improved overall management of hostel operations. It would also highlight any challenges faced during the development or implementation of the system and how they were addressed. Technology introduces new inventions every day, thus reducing the time required to make things [7]. Finally, it may discuss future enhancements or expansions planned for the system to further improve its functionality and usability.

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