



Web Application for Paying Guest Accommodation System using Laravel Framework

Dr.K. Manikandan

kmanirec@gmail.com

M.A.M. College of Engineering and Technology,
Siruganur, Tamil Nadu

Mrs.P. Caroline Priyanka Evelyne

mailtocarokige@gmail.com

M.A.M. College of Engineering and Technology,
Siruganur, Tamil Nadu

ABSTRACT

The online paying guest system allows users to access a variety of lodging options near their work or desired location. In today's digital age, web applications for rental purposes are including room accommodations, paying guest services, food services, and other daily needs are scattered across various platforms with separate modules. These modules can be complex and disjointed, making the process time-consuming and cumbersome. To address these issues, a unified solution is needed where users can manage and modify their rental accommodations efficiently using the Laravel tool for system design management. Overall, these advancements in web applications have greatly simplified the process of finding accommodations and accessing various rental services, indeed, the convenience and flexibility offered by these online platforms have revolutionized the way people search for accommodations.

Keywords: *Guest, Rental Accommodations, Web Applications, Laravel, Online Platforms*

1. INTRODUCTION

Since Paying Guests (PG) and apartment complexes poses a significant challenge in any locality due to their integral role in contemporary living arrangements. As the operations of renting PG are exclusively governed by manual operations, most PGs remain unrented because of poor communication and lack of awareness. Creating a rental management system that helps PG owners streamline operations and ensures seamless relocation for customers is essential. PG owners can register on the website's admin side to advertise their PG details effectively. Once the admin verifies the details and authenticate the login, the owners will be able to login and can also able to upload the PG details into the application. The details are available for users to view and utilize in finding PGs based on their requirements. The application allows users to see PG details along with the facilities offered. The users can also search the PG's information based on some parameters such as nearby colleges, markets, shops, internet connectivity, etc. system. In advance, House rental management system has been reshaped with the technology to increase the ratio of performance, avoidance of delay in the manual. Eventually the web application house rental system makes the process of searching it better in need to the seekers, landlords and tenants

The transition from a manual to a computerized management system allows for comprehensive record-keeping of both hardware and software, along with tracking accounts and generating reports that reflect the current status. Making use of the computerised proposed system everyone feels ease and comfortable for accessing in online with just a few clicks makes user saves data and time[1].we come up with new design and features into one website with the application platform which has an administrator login area where the administrator can enter and view the status of the land room out for status changes and suggestions .Time is an important factor for every one's life to different places in field of study or to work where they waste time in searching for accommodation. Thus, the design and integration with many features on android platform named "Rento Axis" providing the location of PG's and payment services [2-4]. This frame work deals with several users based on RAD method and Laravel Frame work that collects the data from IoT sensors with MQTT and HTTP-Post protocol communication. The information system is implemented in a building with monitoring and controlling energy usages that called as Building Energy Management System (BEMS).

The software testing, conducted using Black-Box testing and UAT, confirmed that the system functions correctly and received positive feedback from the participants. The UAT showed that the respondents gave their positive responses to the design aspect (84%), the convenience aspect (81.5%), and the function/usability aspect (85.75%). The information system effectively displays data that matches the values shown in the serial monitor. The data displayed on the serial monitor was found to be consistent with the data in the database. Rooms and hostels are places that often become a second home for people living away from their own homes. They feel safe while living in room. It also serves as an income-generating opportunity for many individuals who work there as employees.

The Web applications used for various rental needs, such as room accommodations, paying guest services, food services, and other daily activities, are available in separate apps, each with its own modules [5-6].

These modules are not only complicated but also discreet which make the whole task time-consuming and lethargic. so, in this project user just enters her /his location and finding a result of nearby location in mobiles [7] The present study was based on primary survey of PGA units and tourists at five tourist destinations of Kashmir offering such accommodation in distant areas [8] The study revealed that 20 percent of the tourists prefer to stay as paying guests. Yet, the geographical distribution of such accommodations is confined to a select few locations. The PGA scheme has created significant employment opportunities and generated ample income. The move is expected to popularize sustainable tourism development by arresting resort housing and the consequent environmental degradation in the valley[9] The main goal of the project is to increase the quality of the education system, it allows the student to find hostel son basis of their location and need by the frame work in particular time[10-11]. Time plays a crucial factor for working professionalises and students Hostel owners get to show their facilities and services, and the types of rooms available in their hostel or PG. Students can register on the app to explore and check the services offered at various hostels or PG accommodations. This new system maintains all the records in software which overcomes time consuming, updating process and inaccuracy of data. It also helps in storing, updating and retrieving thru various modules by GUI based software with other payee details and information where it holds the person details respectively [12-15].

The evolution of online platforms has indeed revolutionized how we approach various aspects of life, including finding accommodations for work or other purposes. The Managing various modules within these web applications can present challenges. The complexity and discreteness of these modules can make the task of finding accommodations and accessing rental services time-consuming and cumbersome for users. By providing a wide range of options and incorporating user-friendly features, they have simplified the process of finding a place to stay. Plus, the ability to read reviews and ratings from other users adds an extra layer of confidence in the decision-making process. Ultimately empowering individuals to make informed decisions and seize opportunities without the constraints of geographical limitations. In order to eradicate these problems, we need a solution such that the user is able to complete as well as modify his/her rental accommodations using the framework.

2. PROPOSED METHODS

A. Proposed Architecture System

Laravel provides useful built-in features like the Artisan command-line interface (CLI), integrated authentication, and a powerful model-view-controller (MVC) structure. These features contribute to the framework's user-friendly nature and are key factors driving its widespread popularity. It has more than **70,000 stars on Hub** and has become an **in-demand skill** on the job market. Laravel is an easy-to-use web framework that will help you create extensible PHP-based websites and web applications at scale. The project we propose is a web-based application for booking paying guest accommodations, incorporating all three modules into a unified platform. Previously, in the existing system, they were separate and scattered; now they have been consolidated into a single unified application. When a user browses our website, he/she enters his location (or taken up manually). The display of google map specifies the location with the house in 360-degree view. Further the payment module extends our application to support all plat forms and verifies Aadhar card and house documents.

B. Administrator Module

This manages all the information which has the access rights with the details of the PG owner as well as customer and also can be view/delete the details related to PG, owner and user.

C. Owner Module

The PG Owner will complete the registration process using identity proofs and can easily add, update, or delete details of the apartment, rooms, and paying guests as needed.

D. User Module

Users can search for rooms in hostels, paying guest accommodations, and more, and get information like rent, address, room details, and images. across the city. Choosing the technology for your web app or website is a fundamental decision to make before starting development. Mastering this aspect of web development presents one of its most formidable challenges. For straightforward projects like an online store or portfolio, no-code website builders offer a quick solution. However, for more complex endeavors, relying on a no-code platform may prove inadequate. Opting for a framework like Laravel becomes essential for developing sophisticated, scalable web applications efficiently

The Laravel community thrives with active participation, abundant documentation, tutorials, and a wide array of packages readily accessible. It encourages best practices and follows modern PHP standards, making it an excellent option for building resilient and scalable web applications. This Laravel framework promotes the MVC architectural pattern for creating web apps shows in fig 1. This pattern provides a clear set of guidelines for developing scalable and maintainable web applications. The Laravel MVC pattern is invaluable for developers seeking to organize and standardize previously unstructured code. The MVC approach also make it easy to develop both small and large-scale web applications.

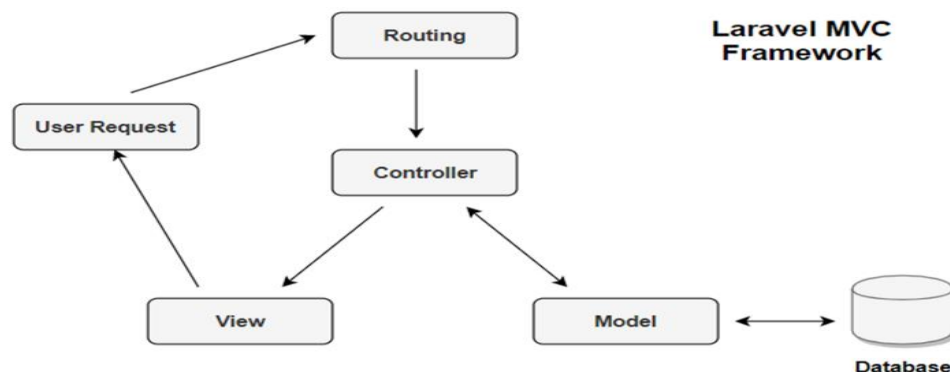


Fig.1. Proposed system architecture hardware

3. SOFTWAREDEVELOPMENT

A. Module Development

Laravel utilizes Artisan as a command-line interface (CLI) to assist web developers in tasks like data migration, database management, and generating boilerplate code, controllers, models, and more. WampServer combines "Windows, Apache, MySQL, and PHP" into a single platform, where "Windows" serves as an accessible operating system for both novice and experienced users alike to manage various computing tasks. However, for developers looking to leverage powerful software without cost, Linux presents a compelling alternative worth considering. There are so many software packages that are only designed to run efficiently on Linux platforms such as Apache web server, PHP interpreter and MySQL database (LAMP). In simple Wamp Server is software that bundled all these packages – Apache, PHP and MySQL for Windows environment to run them efficiently. This eliminates the need for developers to spend time in tedious configuration processes, allowing them to focus their energy more on actual development tasks.

In general, developers or users use the Wamp Server for testing various web applications or websites locally before making them live using WAMP. For example, you want to create a website on Word Press but before going live your website or purchasing hosting you can learn [how to install Word Press](#), setting themes etc. locally using WAMP server. To make it easier for users, particularly those new to web development, the developers of this software have integrated tools for creating dynamic websites. When a developer creates a copy of an object using the "clone" keyword, the Z end engine will verify if a clone method is defined. If a clone method is not provided, the default behavior will be to copy the object's properties. When a clone method is defined, it takes responsibility for initializing the properties of the new object. To streamline this process, the engine often includes a function that imports the source object's properties, allowing programmers to begin with a replica of the original object by value, and selectively modify properties as needed.

In PHP, the visibility of properties and methods is determined by keywords such as public, private, and protected. By default, if only way is used, it is synonymous with public. Public items are accessible from anywhere. Protected restricts access to inheriting classes and the defining class itself. Private limits visibility solely to the class that defines the item. Objects of the same type can access each other's private and protected members, even if they are not the same instance. This system provides users with the ability to interact directly while sitting at the computer. User has a chance of comparing the details with other and then takes the desired one. Introduced a new service-based systems like Address, Room rental and also user can get the facilities details like food, WIFI, TV etc. about PG's, Men and Women Hostel in our city. It provides the option for scheduling the PG or Hostel visit and get communicate, so manage the Schedules.

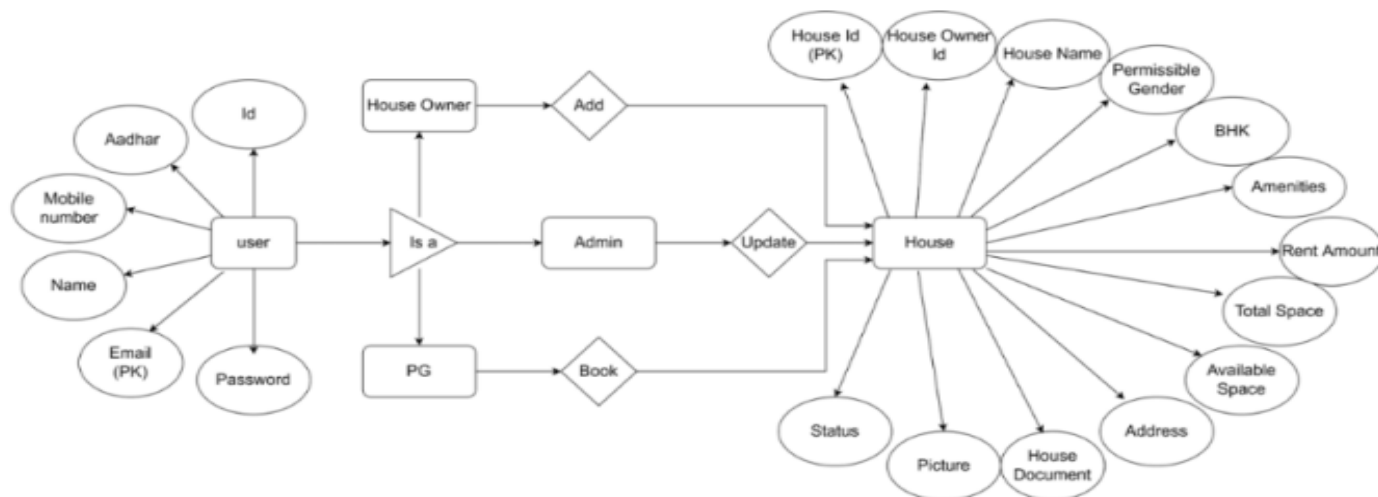


Fig.2.Module of system development step

fig 2 is a laravel module promotes the MVC architectural pattern for creating web apps. This pattern provides guidelines for developing scalable and maintainable web applications. The Laravel MVC pattern is invaluable for developers seeking to organize and standardize previously unstructured code, bringing clarity and consistency to their projects.

The MVC approach also makes it easy to develop both small and large-scale web applications. By implementing this module all people who are busy with their works and have to time to get their desired Paying Guest We are here to provide you all the best and suitable formation user need. This website helps users to find the PGs faster and it's more convenient and simpler to understand and use the development.

B. Software Testing Method

Web testing, also known as web application testing, is a critical software practice that verifies the functionality of a web application to ensure it aligns with intended requirements. This process helps detect and address bugs before release or during regular testing phases, highlighting its vital role in software development. Just as the graphic shows below, whenever there's a change in your software, no matter how small, bugs can appear somewhere else in the system.

The cost of fixing these bugs rises the later they are found in the development pipeline. Having effective testing of web applications in place can prevent these additional costs. Test automation involves employing dedicated software to manage test execution independently from the software being tested. This enables automated processes to simulate user interactions and perform repetitive tasks, enhancing the scope, depth, and consistency of quality assurance activities still, automation in not a plug-and-play system that requires no human intervention. Automated testing requires testers to have a thorough knowledge of the software under test, as well as an "automation first" mindset. To be able to test software with automation, it requires testing tools that enable both technical and non-technical testers can use.

We've compiled this brief article comparing various web automation testing tools for web applications in the image below you can see the types of tests that you can automate for web application testing. We'll explain each of them in more details in fig 3.

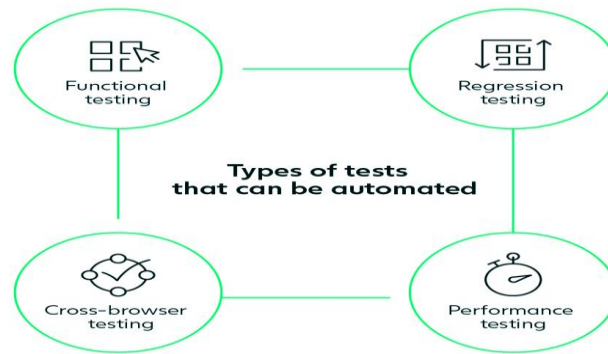


Fig 3. Types of testing

Test automation is a key element in today's software development and quality assurance practices by automating repetitive tasks and simulating user interactions, it helps ensure the reliability and efficiency of software systems. Plus, it frees up human testers to focus on more complex and critical aspects of testing. The test automation is invaluable for verifying that a web application functions correctly under predetermined conditions, it doesn't capture the full spectrum of user behavior and experiences. Human testers bring a unique perspective, intuition, and creativity to the testing process, allowing them to uncover unexpected issues and provide valuable feedback on usability and user experience. By combining automated testing with exploratory testing, teams can ensure both the technical functionality and the overall user satisfaction of their web applications.

4. RESULTS AND DISCUSSION

A. Design and Implementation

To simplify the tasks for PG owners, a Paying Guest Rental Management System has been created, catering to both owners and students (users). The owner is able to update details about the apartment and rooms, such as room size, rent, photos, and address. The system is designed to handle multiple services efficiently, ensuring quick responses to all customer needs. It features an intuitive user interface, making it easy to use while ensuring an overall satisfying experience for all users.

B. Types of Testing.

a. Functional testing

Functional Testing is used to ensure that the functionality of the software works as intended for an end-user. Despite passing unit, integration, and performance tests, a single end-user has the potential to crash the entire system within minutes. This usually happens because the user does something the developers did not expect. Automating tests confirms that the web application is performing as designed. However, functional test automation cannot fully replace the human perspective. That's why you should always supplement your automated test cases with exploratory testing to provide a positive user experience.

b. Regression Testing

Regression testing can be described as "repeated functional testing". It is used to make sure that software's functionality continues to work after parts of it have been modified with new code or configurations. As new features are implemented, regression testing confirms that the previously developed features continue to work as expected. When regression testing is automated, you can quickly and reliably run through simple scenarios and check a variety of changes to get fast feedback. This, in turn, frees up time for testers to focus on product improvements or conduct manual exploration into more unusual cases that require special attention. To become an expert in automated regression testing, download our whitepaper: [How to do regression testing \(faster\) in agile teams](#)

c. Cross-browser testing

Cross-browser testing ensures that your web application is performing as expected across different browsers, both on desktop and mobile. Browsers tend to be updated fairly frequently, meaning that by the time you are ready to deploy your application, it might not work as intended in your target browsers. Users may be running the latest browser version but using an outdated operating system. By automating cross-browser testing, you make sure that incompatibilities like the one just mentioned are found even before they reach an end-user. The complete applications features are displayed in fig 4 through fig 12 are given below.

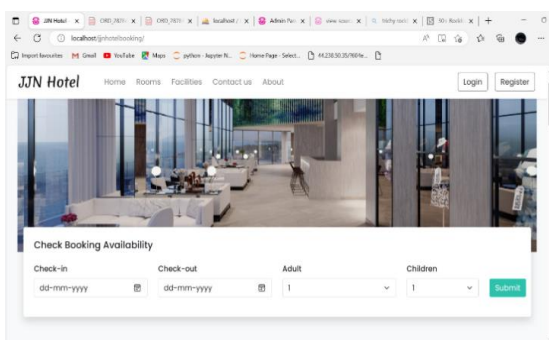


Figure 4. Login Page

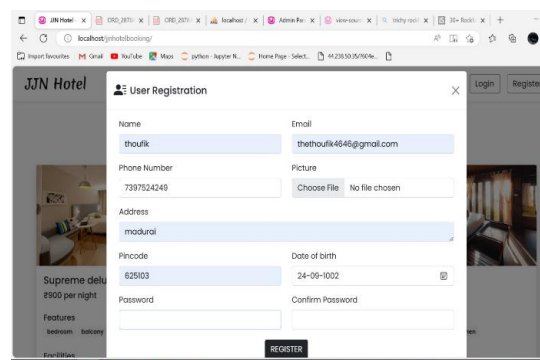


Figure 5. Login Page

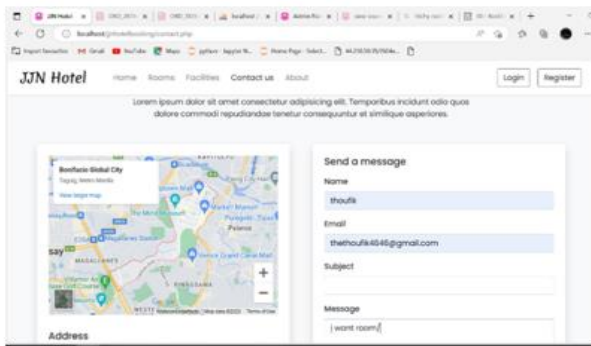


Fig 6. User Page

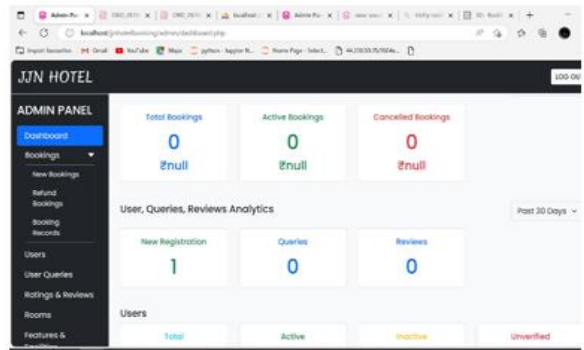


Fig 7. Dash Board Page

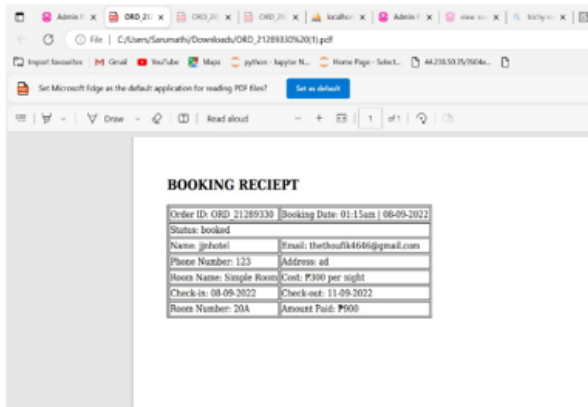


Fig 8. Booking Page

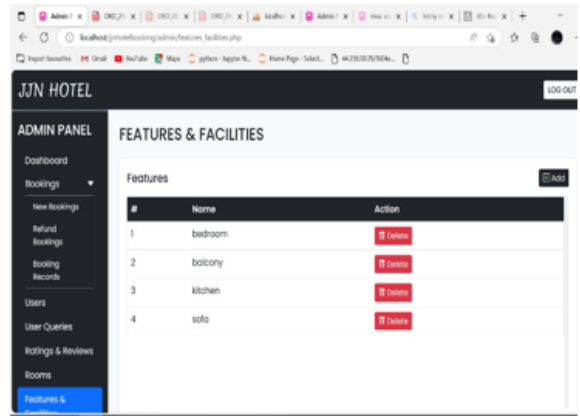


Fig 9. Admin Page

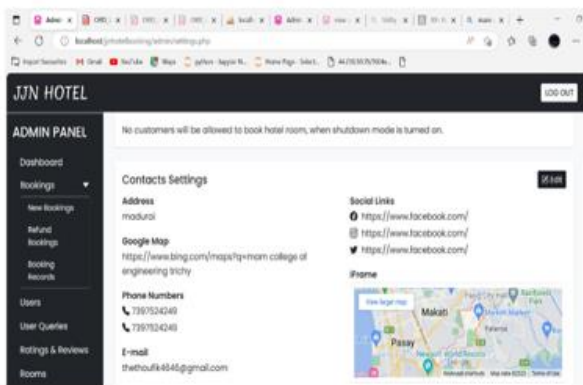


Fig 10. Info Page

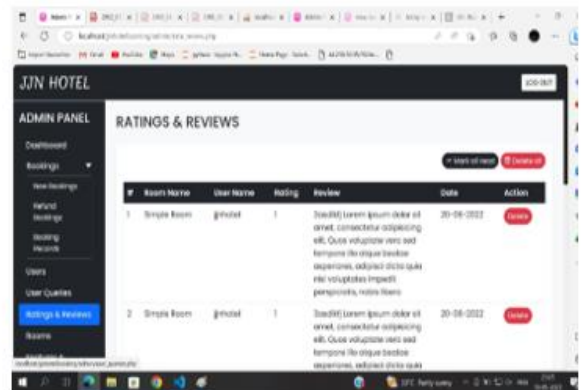


Fig 11. Review Page

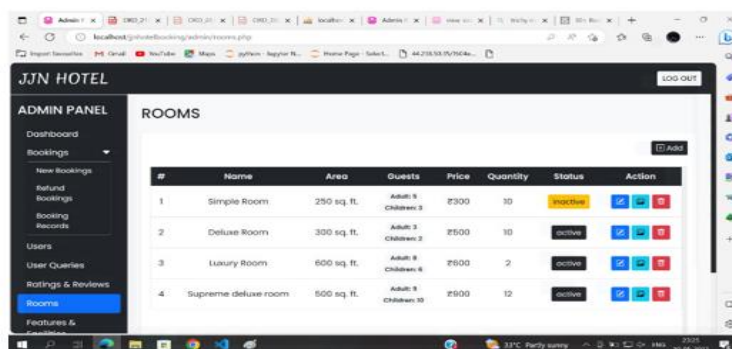


Fig 12. Rooms Info Page

5. CONCLUSION

This platform integrates essential amenities, particularly for students, into one unified interface. Additionally, it expands the functionality of advertising the hosts' accommodation options on the website. This application not only addresses the needs but also caters to the preferences of clients using it in a new location.

From the managerial point of view, it is rightly said “Time is Money” In conclusion, the report outlines a method to reduce the time and data spent by an individual, making it a valuable asset. When anyone moving to a new city for renting accommodation may find they overwhelmed. This application specifically emphasizes the numerous benefits of PG (paying guest) accommodations. This Web app provides more security compare to the existing one and also offers a flexible housing The capacity to adjust to evolving financial needs, including the need to relocate promptly. This Web app is most commonly useful for the young adults who leave their family homes for studies, jobs, etc. The Security of web resources high performance under heavy server loads. It is providing flexibility and reliability.

REFERENCES

- [1]. Ajit Tripathi, G., Gaurav Singh, R., Rajesh N., S., 2017, Web application for booking paying guest & exploring mess and stationary in the nearby location, International Research Journal of Engineering and Technology (IRJET), Vol. 4, pp. 992-995.
- [2]. Kng B.S., Nair K.S., Sinha, G., 2023, PG-Life: A Web-Based Application for Paying Guest Life, 3rd International Conference on Pervasive Computing and Social Networking (ICPCSN), pp. 1286-1289.
- [3]. Murahari Prithvi Yash, C., Chinmay Choudhary, A., Akanksha Lakra, S., Swati Dewangan, 2018, RentoAxis: Android App for Paying Guest Management, Journal of Emerging Technologies and Innovative Research (JETIR), Vol. 5, Issue 12, pp. 166-169.
- [4]. Akshatha M., Bhavya B., 2017, PG Locator, International Journal of Engineering Science and Computing (IJESC), Vol. 7, pp. 12750-12752.
- [5]. Nikhil Dhak, R., Rohit Daya, O., Onkareshwar Bhange, P.M., Bihade, 2018, Online Application for Booking Paying Guest and Exploring Mess in Nearby Location, International Conference on Emanations in Modern Engineering Science & Management (ICEMESM), pp. 1-4.
- [6]. Rahul Bhagwat, A., Aashay Bharadwaj, V., Vivek Harsode, A., Anurag Chawake, M., Deepali Bhanage, 2018, Society Management Application on Android, International Research Journal of Engineering and Technology (IRJET), Volume 5, Issue 5, pp. 2509-2511.
- [7]. Nawale Rohit Ramhari, M., Mouriya Narayan Dilip, M., Saindane Sumit Madhukar, M., Wagh Prasad Sunil, UG Student, 2022, “PG LOCATOR APP”, International Journal of Research in Engineering and Science (IJRES), Volume 10, Issue 5, pp. 105-110.
- [8]. K. Navya, N., Shirisha, G., Soumya G., Divya Jyothi, 2018, Design and Implementation of an Android Application for Management of Events, International Journal of Engineering & Technology, Volume 7, pp. 226-228.
- [9]. C. Ramesh Kumar, V., Vipin Kumar, V., Vikrant Singh, 2022, Upcoming Future of Paying Guest Accommodation, International Research Journal of Modernization in Engineering Technology and Science, Volume 4, Issue 5, pp. 1522-1526.
- [10]. Kirti Rathore, A., Aleena Syed, R., Rahul Patel, 2021, Rental House Management System, International Research Journal of Modernization in Engineering Technology and Science, Volume 3, Issue 5, pp. 1098-1103.
- [11]. Shivganga Gavhane, D., DYPIEMR Rutuja Vatharkar, S., SPPU Swati Sonar, S., SPPU Pratiksha Patil, 2015, Study of Implementation of Society Management System, International Journal of Computer Applications, Volume 132, No. 1, pp. 34-36.
- [12]. Krishna Rajput, N., Nimisha Shah, K., Kalyani Adwadakar, 2017, SMART PG (Paying Guest), International Journal of Advance Engineering and Research Development, Special Issue SIEICON, ISSN: 2348-640.
- [13]. Baldwin T.L., inventor; TIPPLY Inc., assignee, 2015, Service Productivity and Guest Management System, United States Patent Application US 14/315,310, pp. 1-20.
- [14]. D. Rodriguez, R., R. Harrison, M., M. Satpathy, 2002, A Generic Model and Tool Support for Assessing and Improving Web Processes, in Proc. IEEE Symposium, pp. 141-151.
- [15]. Rehka Jadhav, J., Jwalant Patel, D., Darshan Jain, S., Suyash Phadhtare, 2015, Emergency Management System Using Android Application, International Journal of Computer Science and Information Technologies, Vol. 5, Issue 3, pp. 2803-2805.