

# AnkurSir\_Paper

*by* Preeti Garg

---

**Submission date:** 16-Apr-2024 09:37AM (UTC+0530)

**Submission ID:** 2345289958

**File name:** Updated\_Research\_paper-ANkur\_sir.docx (1.99M)

**Word count:** 3274

**Character count:** 19155

# Cloud-Based PG Renting Platform: Enhancing Student Housing Experience through Scalable and Secure Technology

Authors: Palak<sup>1</sup>, Lakshaya<sup>2</sup>, Nikhil<sup>3</sup>, Ankur Bhardwaj<sup>4</sup>  
Department of CSE, KIET Group of Institutions, Ghaziabad, India

## I. ABSTRACT

In the realm of higher education, securing suitable and safe accommodations near college or university campuses presents a pivotal challenge for students. To Find the secure and acceptable Paying Guest i.e. PG, lodgings close to college campuses can be a difficult process, but this website seeks to make it easier. Students benefit from an improved overall experience as a result of the consolidated platform that offers secure booking systems, comprehensive listings, and user-friendly interfaces. User reviews are accessible, and landlords and homes are subject to stringent verification procedures that prioritize safety. In the end, the website wants to make the stressful and unpredictable process of looking for a place to live less difficult, making the adjustment to college life easier.

**Keywords:** Cloud, Paying Guest, AWS, E-business, scalable.

## II. INTRODUCTION

The pressing issue of finding suitable and safe PG accommodations near college campuses is addressed in this research paper through the proposal of developing a PG renting website tailored to the needs of students embarking on their academic journey. The housing sector, while remaining watchful of technological advancements, is proposed to employ a new strategy that facilitates easy management of rental houses, paying guests, hostels, and flats [1]. To alleviate the housing dilemma faced by students, the development of a PG renting website is proposed, aiming to serve as a comprehensive solution that facilitates the search for PG accommodations in a convenient, efficient, and secure manner. Through a combination of user-friendly interfaces, detailed property listings, integrated mapping features, and secure booking systems, the student housing landscape is aimed to be revolutionized by the website, offering a seamless experience for students embarking on their academic journey. Central to this initiative is the commitment to ensuring the safety and well-being of students. In light of increasing concerns regarding the safety of off-campus accommodations, the website will implement stringent verification processes for landlords and properties, alongside providing access to user-generated reviews and ratings [2]. With the current paradigm shift in the technological field, there is an urgent need to embrace and appreciate the power of technology [3]. By delving into these aspects, valuable insights and recommendations for addressing the housing challenges faced by students and enhancing their overall experience as they embark on their academic endeavours are sought to be provided.

## III. RELATED WORK

The difficult process of locating PG accommodations that satisfy students' preferences, financial limitations, and safety standards is a defining feature of the adjustment to college life. The difficulty of finding, assessing, and reserving PG accommodations that meet the needs of students is made worse by the lack of centralized platforms. Reviewing numerous research articles and looking through numerous websites pertaining to the administration of PG (Paying Guest) rentals, the researchers conducted a thorough investigation. Numerous mechanisms that were already in place and intended for PG rental web apps were found during this approach. the goal has been to learn more about these current systems, recognize their shortcomings, and use this knowledge to create a new system that can handle the difficulties faced in both local and These platforms offer access to a variety of PG accommodations, including residential units and shared living spaces, with options for users to book for specific durations based on their needs [4]. The emergence of the sharing economy has brought about a shift in a number of social and economic areas, including the rental market for PG units. In contrast to conventional sharing methods, the sharing economy allows people to exchange goods and services directly through internet platforms, eschewing conventional business-to-consumer exchanges. Vacation rentals have become more accessible because to websites like Airbnb, which also enable hosts to reach millions of people worldwide without incurring large setup fees. Platforms such as Airbnb have democratized access

to holiday accommodations, allowing hosts to reach a global audience of millions of users without significant establishment costs. However, the wide reach of online platforms also presents challenges, such as difficulties in enforcing regulations and ensuring accountability [5]. E-commerce is becoming more and more common. The world's use of e-commerce services is increasing, and one of the main reasons for this is the rapid advancements in information technology and the internet. [6].

In this context, reliable, secure, and user-satisfied interactions between users and platforms are made possible by good system design, which is essential in the ever-changing world of online transactions. The process of creating a system's architecture, parts, interfaces, and data to satisfy end users' needs is known as system design. Since the public uses this system mostly, I designed a more dynamic and user-friendly website that will be more beneficial to them. This system style can be thought of as the application of systems theory to the process of developing new products. It provides an answer to the problem of creating a new system. This section consists of many systems and focuses on the careful implementation of the possible system [7]. The continuous evolution and change of software development tools poses issues to guaranteeing consistency and interoperability across various e-commerce platforms. Because of the differences in data structures and communication protocols, it is challenging to integrate the Internet and electronic commerce software with the databases and applications that are currently in use. The smooth operation of e-commerce systems is further hampered by insufficient system standards, dependability, security, and communication protocols. Moreover, the speed and effectiveness of online transactions are restricted by insufficient telecommunication bandwidth, and the expense burden is increased by the need for specialized web servers and extra infrastructure [8].

#### **IV. FEATURES OF WEB APPLICATION**

##### **i. User Registration and Authentication:**

Make it simple for users to register for accounts by requesting them to enter personal details such as their first and last names, email addresses, and passwords. Set up a secure authentication mechanism to safeguard user credentials and stop illegal access. Provide alternatives for integrating social network logins to expedite the registration process.

##### **ii. Detailed Property Listings:**

Allow landlords to create comprehensive property listings with multiple high-quality photos, detailed descriptions, floor plans, and virtual tours. Include information on amenities, such as furnishings, utilities, security features, and nearby facilities (e.g., grocery stores, restaurants, public transportation). Enable landlords to specify rental terms, including lease duration, security deposit, pet policies, and any additional fees.

##### **iii. Interactive Map Integration:**

Integrate interactive maps with property listings to display the exact location of each PG accommodation. Enable users to explore the surrounding area, view nearby amenities, and calculate travel distances to important destinations (e.g., universities, workplaces). Provide street view functionality to give users a realistic sense of the neighbourhood and surroundings.

##### **iv. User Reviews and Ratings:**

Permit renters to rate and evaluate the PG properties they have stayed in, providing details about the amenities, cleanliness, responsiveness of the landlord, and general satisfaction. To assist users in rapidly evaluating the quality and reputation of each property, show the average scores and overall ratings for each property. Establish a moderation mechanism that gives landlords the opportunity to reply to evaluations in order to guarantee that they are sincere and kind.



data types ensures flexibility in accommodating diverse property listings and user information. Additionally, MySQL's adherence to the relational model facilitates the establishment of relationships between listings, users, and other entities within our system. With MySQL's scalability and security features, we can confidently manage the growing volume of data while ensuring the integrity and confidentiality of user information.

website, Online PG Dekho, uses MySQL as its Database Management System (DBMS) for backend development. Strong features that are suited to platform's particular requirements are provided by MySQL, enabling effective database and table creation, management, and updating. Flexibility in accommodating diverse property listings and user information is ensured by its support for many data types. Furthermore, the relational architecture that MySQL adheres to makes it easier to create associations between listings, users, and other things in our system.

It can securely handle the increasing amount of data while maintaining the integrity and confidentiality of user information thanks to MySQL's scalability and security capabilities.

Overall, MySQL plays a crucial role in powering the backend infrastructure of Online PG Dekho, enabling us to provide a seamless and reliable platform for users to find their ideal paying guest accommodations [10].

one of the most significant and difficult job is database architecture. When customer's register on the website, the customer's termination is recorded in the database. The database contains information about the items, including their name, description, and image.

Also, if we update any featured products, updates to the database. so The program has a lot to do with the database [11]. An implementation of Structured Query Language (SQL) is used to run each query on the database. As was previously indicated, PHP features like the ability to run the questions and link to a database are useful. The database system's specifics are depicted in the following picture. Five tables will comprise our database: register, tiny ad, product, category, and advertise. The diagram displays the creation of three tables. The following attributes are found in the table headed "product": product\_id, product rate, category\_id, and product\_rate. where product\_id serves as the table's primary key, giving each product a distinct identification. This table uses the attribute category\_id as a foreign key, which establishes a relationship with the table category that has the two elements category\_id and category\_name. A customer's information, including name, customer\_id, product\_id, quantity, and email, is kept in the customer table when they register on our website. Once more, the unique key for this table is customer\_id, and the foreign key that connects it to the product table is product\_id.

#### IV. LIFE CYCLE OF WEB APPLICATION:

##### i. DESIGNING:

Both client-side and server-side scripting languages were used in the creation of the dynamic web pages in this application. On a server, scripts or programs run applications that create dynamic pages. We tested it locally on hosts and then transferred it to websites run by professionals. The webserver is what we use to run programs on our local PCs. Browsers like Google Chrome, Mozilla FireFox, or Safari are used to run this software; they all send out an HTTP request seeking dynamic web pages. When web servers receive HTTP requests, they analyze file extensions to identify which application server will handle the request and run any scripts that are given.

This script retrieves data from a database server and saves it for later using information obtained from the browser. After being processed, an application server sends the HTML code for a page to a webserver, which then sends the HTML back to the browser as part of an HTTP response.

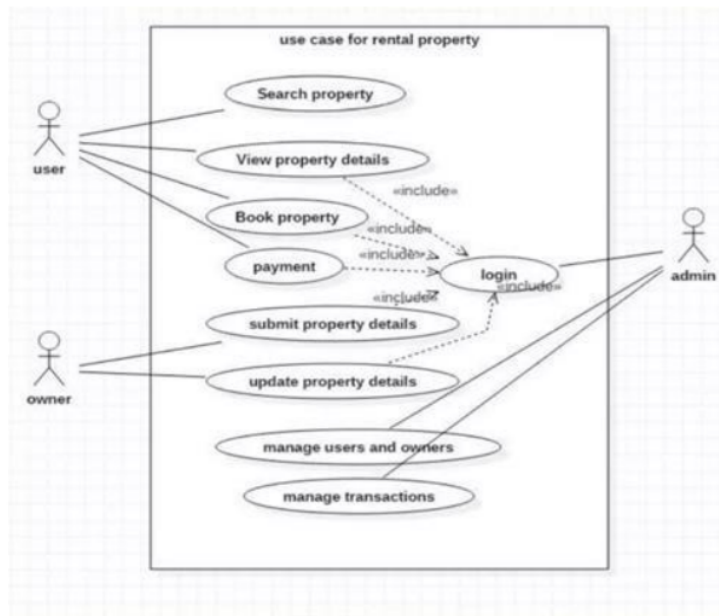


Fig 2 – use case diagram of room renting website

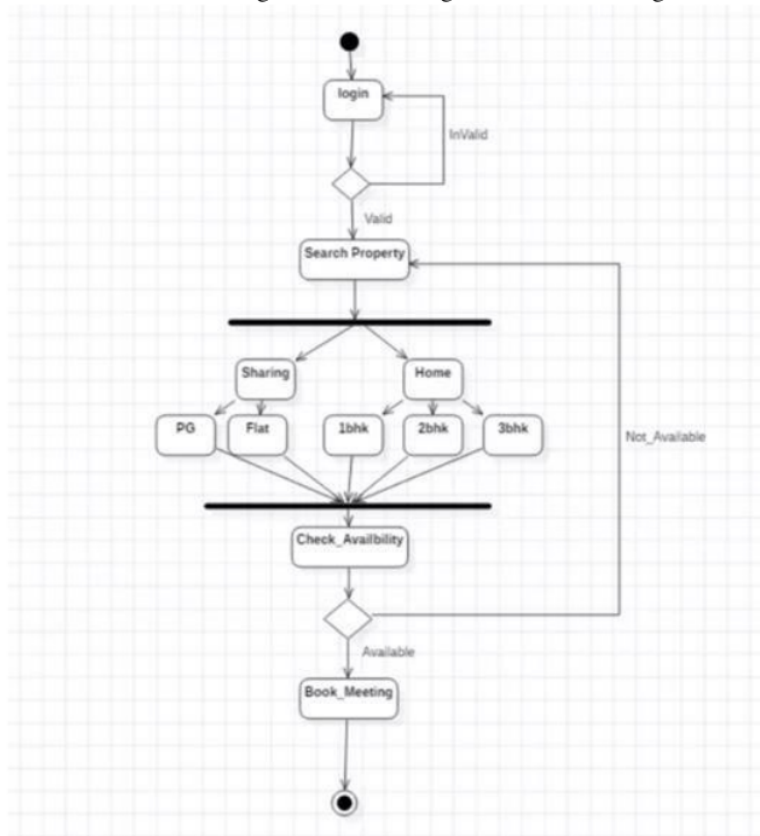


Fig 3- Activity Diagram of pg renting website

## ii. TESTING AND BUG-FIXING

An application test gives stakeholders important information about a product's quality. Running the application is part of the testing process to look for faults (errors or defects). White-box testing, which is preferred over all other

testing methods, entails evaluating properties of interest using only the essential components of an application. White-box, or clear-box, testing looks at a software program's internal structures and operations rather than how well it functions for the user. In order to develop test cases that illustrate this testing approach, white box testers need to possess both programming expertise and a thorough understanding of their system. Similar to evaluating nodes in an electrical circuit, the tester chooses inputs and explores paths through code to generate appropriate outputs. Based on the results of our test, it looks that our online application is operating flawlessly. Having fixed a number of errors throughout development, it now has completely functional website functionality. Now that it's ready, our web application is hosted on SHA-1 whenever it asks for a password from us.

### **iii. DEPLOYMENT**

By utilizing cloud infrastructure to host, operate, and grow the platform for matching students with suitable housing, PG rental websites can be implemented on AWS (Amazon Web Services). The PG rental platform can be deployed and run more effectively thanks to AWS's extensive range of services, which are specifically designed to meet the requirements of online applications. AWS offers all the necessary parts for developing and implementing a reliable and scalable student housing solution, from networking and databases to compute and storage services. Reducing IT infrastructure costs is one of the cost benefits of deploying the PG rental website on AWS. In order to compute monthly depreciation and ensure equitable allocation of hardware and software costs, parameters such as amortization are used. Scalability in AWS guarantees that resources match demand, maximizing expenses. Improved security and dependability aspects of AWS. AWS's global reach expands the platform's accessibility, attracting a broader user base. Flexible management options streamline operations, allowing focus on platform enhancement and user experience. In summary, deploying on AWS promises cost efficiency, reliability, and scalability for the PG renting website[12].

## **V. RESULTS AND DISCUSSIONS:**

Student housing has changed significantly as a result of the creation and implementation of the PG rental website on the cloud. For students looking for appropriate housing close to their schools, the platform has greatly enhanced the whole experience by tackling the urgent issues that arise during the transition to college life. The website has completely changed how students look for and visualize PG lodgings, saving them a great deal of time and effort with its intuitive interfaces, sophisticated search filters, and interactive mapping capabilities. Users now feel more confident and trusting about the safety and veracity of listed accommodations thanks to the introduction of strict verification procedures for landlords and properties as well as access to user-generated reviews and ratings. The rental procedure has been made even simpler with the integration of safe booking and payment methods, giving customers flexibility and convenience when making reservations online. Furthermore, the platform's adaptable design strategies and accessibility features have guaranteed usability and navigability across a range of devices, boosting user happiness and inclusion. The website has been made more stable and reliable through rigorous testing and bug-fixing processes, which guarantee the best possible experience for users. The platform's growth and expansion have a solid basis thanks to the cost savings, scalability, dependability, and security that come with deploying applications on AWS infrastructure. In order to better answer the changing requirements and problems in the student housing sector, future research and development activities could concentrate on improving security measures, optimizing performance, and investigating cutting-edge technology. To summarize, the PG rental website marks a noteworthy advancement in using technology and creativity to mitigate housing difficulties and improve the general experience of students throughout their academic career.



ONLINE PG DEKHO

[SIGNUP](#) [LOGIN](#)

Email

Password

Login

All rights reserved.

ONLINE PG DEKHO

[SIGNUP](#) [LOGIN](#)

Name

Email

Mobile

Password

Signup

All rights reserved.



What are you looking for?

Select City



Select Property



keyword, name, date, ...

SEARCH



9000

## COASTAL COMFORT

★★★★☆

17/4, Second Street, Thiruvanniyur



6500

## HARMONY STAY

★★★★☆

301, Pearl Residency, Baner



8000

## MAYA'S NEST

★★★★☆

A-34, Block A, Green Park



7500

## SAI KIRAN COMFORTS

★★★★☆

#45, 3rd Cross, Indiranagar

## COASTAL COMFORT

City: Chennai

Address: 17/4, Second Street, Thiruvanniyur



## ABOUT

Experience the serene beauty of the coast with top-notch amenities at your doorstep



## ROOM DETAIL

18 rooms with breathtaking sea views and gym access



## FOOD DETAIL

Delicious South Indian cuisine, a feast for your taste buds

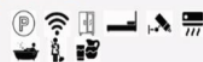


## FOOD TIMING

Breakfast: 7 AM - 9 AM, Lunch: 12 PM - 2 PM, Dinner: 8 PM - 10 PM



## AMENITIES



PRICE: 9000.00 INR



## VI. CONCLUSION

A major advancement in property management and rental services is a cloud-based PG rental website. This study examines a number of deployment-related topics, such as the advantages and difficulties of moving such a platform to cloud infrastructure. Cloud deployment of a PG rental website has several benefits, including scalability, flexibility, and cost-effectiveness, which enable the website to evolve in harmony with customer expectations. Furthermore, building owners and renters will benefit from the most dependable and accessible performance thanks to the ability to utilize cloud-based resources. Furthermore, data management is more effective since it uses cloud-based solutions for centralization, which enhances user experience overall. However, there will be difficulties associated with this kind of transfer. A careful approach must be taken during the implementation phase to address security problems such as data privacy issues and the necessity for a solid architecture. Advanced security measures must be implemented, together with thorough planning and risk assessments, to reduce any risks or weaknesses. Since technology is always evolving, using cloud deployment for PG rental websites is essential to remaining competitive and satisfying growing demand.

## VII. REFERENCES

1. Paul, J., 2022. The rental zone (house renting website). *International Research Journal of Modernization in Engineering Technology and Science*, 4(08), pp.2582-5208.
2. Gupta, K. A., Katiyar, S., Shahi, S., Awasthi, S., & Katre, M. A Review Paper on PG Recommendation System.
3. Shriram RB, Nandhakumar P, Revathy N, Kavitha V. House (Individual House/Apartment) Rental Management System. *International Journal for Computer Science and Mobile Computing*. 2019;19:143.
4. Fota, A., Wagner, K., & Schramm-Klein, H. (2019). Will renting substitute buying? Drivers of user intention to participate in rental-commerce.'
5. Gurran, N., Zhang, Y., Shrestha, P. and Gilbert, C., 2018. Planning responses to online short-term holiday rental platforms.
6. Rasli, S., Khairi, N., Ayathuray, H. and Sudirman, M.S., 2018. The impact of e-business website quality on customer satisfaction. *Journal of Theoretical and Applied Information Technology*, 97(2), pp.102-112.
7. Paul, J., 2022. The rental zone (house renting website). *International Research Journal of Modernization in Engineering Technology and Science*, 4(08), pp.2582-5208.
8. Batra, Sakshi, and Deepak Dahiya. "Online Toy Rental Store." (2015).
9. Nanath, Krishnadas, and Radhakrishna Pillai. "A model for cost-benefit analysis of cloud computing." *Journal of International Technology and Information Management* 22, no. 3 (2013): 6.
10. Pratiksha D., Shivani S. Mamidwar, Monali Sunil Korvate, Sumangala Bafna, and P. D. D. Shirbhate. "Website Development Technologies: A Review." *International Journal for Research in Applied Science and Engineering Technology* 10, no. 1 (2022): 359-366.
11. Salnikov, A. (2006). Evolution of the configuration database design. *Nuclear Instruments and Methods in Physics Research Section A: Accelerators, Spectrometers, Detectors and Associated Equipment*, 559(1), 22-25.
12. Nanath, Krishnadas, and Radhakrishna Pillai. "A model for cost-benefit analysis of cloud computing." *Journal of International Technology and Information Management* 22, no. 3 (2013): 6.

ORIGINALITY REPORT

---

14%

SIMILARITY INDEX

8%

INTERNET SOURCES

7%

PUBLICATIONS

10%

STUDENT PAPERS

---

MATCH ALL SOURCES (ONLY SELECTED SOURCE PRINTED)

---

3%

★ Ullah, Syed Emdad, Tania Alauddin, and Hasan U. Zaman. "Developing an E-commerce website", 2016 International Conference on Microelectronics Computing and Communications (MicroCom), 2016.

Publication

---

Exclude quotes Off

Exclude bibliography Off

Exclude matches Off