POKHARA UNIVERSITY

APEX COLLEGE

Department of Management

Minor I Report

 \mathbf{ON}

Rental Zone

BY:

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Jenish Neupane (20080089)

Angel Rana (20080078)

Roshan Nyaupane (20080106)

KATHMANDU, NEPAL

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A PROJECT WORK SUBMITTED TO THE DEPARTMENT OF MANAGEMENT IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE BACHELOR OF COMPUTER INFORMATION SYSTEM

KATHMANDU, NEPAL

July, 2022

Pokhara University

Apex College

Department of Management

The undersigned certify that they have read, and recommended to Pokhara University for acceptance, the project report titled "**Rental Zone**" submitted by Kapil Bhandari (20080090), Jenish Neupane (20080089), Angel Rana (20080078), Roshan Nyaupane (20080106) in partial fulfillment of the requirement for the Bachelor of Computer Information System.

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DECLARATION

The project report titled Rental Zone submitted for the partial fulfillment of the requirement for the degree of Bachelors of Computer Information System to Pokhara University, comprises only original work and due acknowledgement have been made to the materials used in this report.

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ABSTRACT

Using Django along with HTML, CSS and JavaScript this project "Rental Zone" is developed. We have used HTML, CSS and JavaScript in frontend and Django in the backend. Firstly, the report represents the introduction about the concept. By recognizing the new trend of the market and understanding the profound demand of the majority of the people, we have established a new rental management system. This website aims to gather the information about the room available and show it to the people who are interested. One of our target markets will be the residents who cannot afford expensive things and have relative low income.

The chapter two includes a Literature Review which talks about comparison of this system with the existing systems in the market. Comparing them, analysis was done about the deficiencies in the concept of Rental Websites in Nepal. In the system design, the basic functionalities of the Rental Management System are mentioned. It gives the idea on who are the main actors of this system and what role they have in the functioning of this system.

The chapter three, contains the flow of the project, figures, testing and listing the errors. Also, includes the debugging and solution to them in order to obtain a smooth, error-free system. However, there is always some space for further improvements in a system. Therefore, the final chapter includes the limitations and future enhancement for the ongoing system.

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LIST OF ABBREVIATION

CSS: Cascading Style Sheets

DFD: Data Flow Diagram

ERD: Entity Relationship Diagram

HTML: Hyper Text Markup Language

HTTP: Hypertext Transport Protocol

SQL: Structured Query Language

UI/UX: User Interface/User Experience

Django: Python Framework

CHAPTER I

INTRODUCTION

1.1 Background

A house rental is a house/apartment/home that can be used temporarily for a fee during a set period of time. An individual who needs a house must contact the car rental company and enter into a contract room/home/apartment. Housing has central importance to the quality of life with considerable economic, social, cultural, and personal significance. In spite of the fact that a nation's national prosperity is usually measured in economic terms, increasing wealth is of diminished value unless all can share its benefits and if the growing wealth is not used to redress growing social deficiencies, one of which is housing. Owning a home may be a lifelong goal for many people but that doesn't mean it's for everyone. Many people don't fulfill their goals because they can't afford a house. In our nation, many people are still not able to afford to build houses due to various reasons like the high price of land so people search for alternatives to this problem. And the best alternative is renting a room or house as it will be cheaper than owning the house and is flexible for the tenants.

Some people also own a house but don't live in it else rent them as it is profitable to the owner too. Although renting may not be ideal, renting does have its advantages, too. Renters can live practically anywhere, while homeowners are restricted to areas where they can afford to buy. Living in an expensive place such as Kathmandu may be out of reach for most home buyers, but it is entirely possible for renters. Although rents can be high in areas where home values are also high, renters have more apartments, and rooms to find an affordable monthly payment than home buyers. The behavior of tenants and owners is also important. There are different people with different behaviors that reflect different characteristics so it is necessary to know the information about the tenants. If the place is suitable to live in or not, does this place have the necessary facilities or not? These all factors should be considered before the tenant moves to the house.

1.2 Scope

- Provide easy login and registration
- Browsing of the room available
- A safe and reliable way for owners to reach peoples
- Record details of owners and customers and rooms
- Create a user friendly and interactive system
- Generate an easy way to upload room for the owners

1.3 Project Description

The rental zone is the web-based rent management system that will allow the users to quickly and easily search a room for rent. The system will help homeowners to upload their property for rent. The record keeping for the owners will be easier, faster, and the data will be secure in the server. They can view the history of the required data and can also manage the data as per requirements. The analysis could be done with the available data for both homeowners and the customers who want to stay. The normal users will have options and can compare and decide the best home and owner for them. We also have OTP verification embedded in this system.

1.4 Objectives

1.4.1 Academic Objectives

- To expand effective communication between an individual involved in the projects.
- To develop cognitive, critical, and logical thinking.
- To develop group working skills between an individual.
- To emphasize work ethics and disciplines
- To develop commanding work skills
- To improve one's perspectives
- Prepare for the global market and for persisted learning

1.4.2 Project Objectives

- To record the entities and their representatives
- Development of communications between members
- To give access to individuals for keeping records of system users and the use of services
- Guidance for the management of systems effectively and efficiently.
- Provide complete support and offer assistance, enhancing system user experience.

1.5 Gantt Chart

Gantt chart is a project management tool assisting in the planning and scheduling of projects of all sizes, although they are particularly useful for simplifying complex projects. On the left of the chart is a list of the activities and along the top is a suitable time scale. Each activity is represented by a bar; the position and length of the bar reflects the start date, duration and end date of the activity.

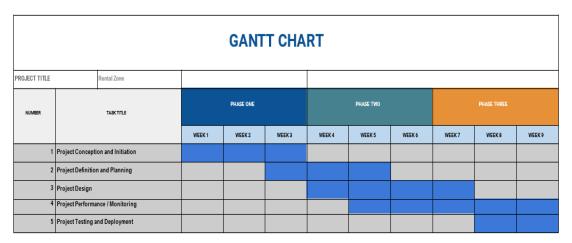


Figure 1 Gantt Chart

In this grant chart the project is divided into five stages: initiation, definition, design, monitoring and deployment. And on the left side there is the time taken to finish the specific stage. Every box represents a one-week time frame the works are done and for conception and initiation took three weeks, definition and planning also took three weeks. Some tasks are undergoing simultaneously. The most amount of time taken is for designing and monitoring of the project.

CHAPTER II

LITERATURE REVIEW

Renting a house assists people to live in a comfortable house when they do not have access to build their own personal homes/houses. This can be done online. At this point, this person has to supply some information such as; dates of rental, and type of house. And customers are free to choose any house of their choice based on their purse and availability of such houses at the time of booking. Rental Zone, from this system we get to know that UI plays a very important role in attracting the customers and turning the potential audience into one of them. User interface is important because it turns potential tenants to owners as it facilitates interactions between the user and your website or web applications.

In Nepal there are existing Rental Management Systems like Gharbeti, Rento which also provide similar features like we are providing but these website's UI/UX design is not as attention grabbing as it was intended to. So, the functionality of these websites is to provide the platform to connect buyers and sellers, tenants and landlords in Nepal. Currently the most property managers manage property and tenants' 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. The property manager can email them back giving them all the details about the house they are requesting. The details include Rent per month, Deposit paid and Terms and conditions to follow acceptance.

CHAPTER III

SYSTEM DESIGN AND IMPLEMENTATION

3.1 Introduction of the System

Rental Zone is the online system where the entities (Customers, Owners). The admin can find out who has registered into the system, the room is booked, details of rooms, customers and owners. Owners are able to place their room in the system. Owners of the room can accept the request given by the customer to book the room after the payment is done. This is a system focused on helping the owners and tenants to have a common platform to interact about the condition of the house and how the payment has to be done.

There is a proper authentication process to verify a user and after the user is logged in as per the role, the user is able to access the provided features in the system.

3.2 System Design

3.2.1 Data Flow Diagram

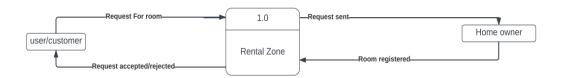


Figure 2: Zero Level DFD

This diagram shows the 0 level DFD of Rental Zone where home owner and user/customer are two entities. It's a basic overview of the whole Rental Zone or process being analyzed or modeled. It should be easily understood by a wide audience as it shows the simple relation between customer and owners. Customer requests for a room through Rental Zone and it is redirected to home owners, the response for the request is sent back to user/customer through Rental Zone.

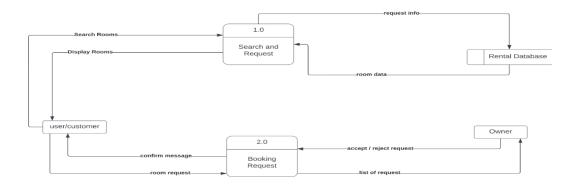


Figure 3: First Level DFD

This diagram shows the 1 level DFD of the Rental Zone. It shows how the system is further divided into subsystems, each of which deals with one or more data flows to or from an external agent and which together provide all the functionality of the whole system. It also identifies internal data stores of rooms, user profiles and shows the flow of data between the various parts of the system. This diagram provides a more detailed flow of data between the entities.

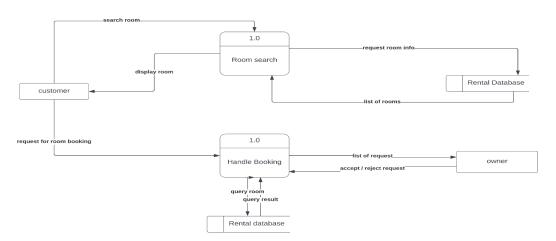


Figure 4: Second Level DFD

This shows the deeper parts of Level 1 DFD; it is Level 2 DFD of Rental Zone. It may require more functionalities to reach the necessary level of detail about the proper functioning of the system. The subsystems in Level 1 are clearer in this diagram. As we can see the data flows from entities to entities and databases. The data about booking, owners, customer is shown and the data flow between those entities are shown.

3.2.2 E-R Diagram

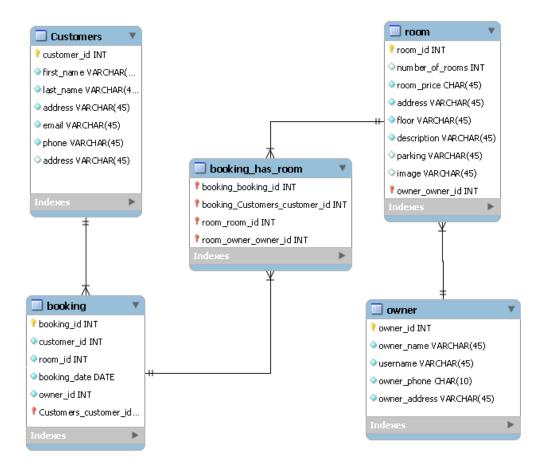


Figure 5: Entity Relationship Diagram

This ERD (Entity Relationship Diagram) represents the model of Rental Zone. It shows all the visual structure of the database tables and the relations between owners, tenants, rooms etc. It is used to structure data to define relationships between structured data groups. The main entities of Rental Zone are owner, room, customers and booking. All the entities have their own attributes which makes us easy to understand the relationships between the entities.

3.2.3 Use Case Diagram

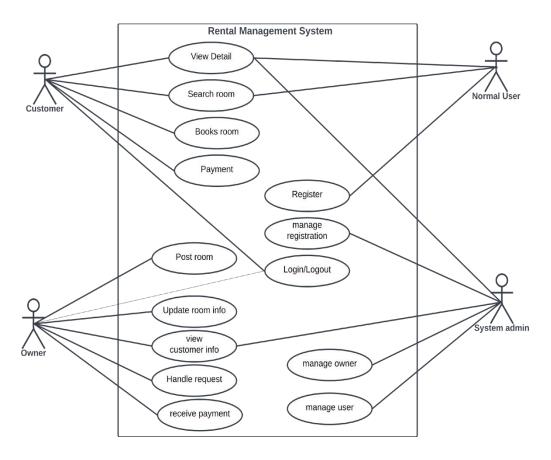


Figure 6: Use Case Diagram

In this system, there are three main actors where two actors are internal agents and one is external agent we also have included a normal user who views the website and searches room. The internal agents are owner and system administrator while the external users are normal users and customers or tenants. They have different activities that they perform in the system. For example: - Customer views, searches and books the room whereas the owner posts, updates, handles requests through the system. The below diagram shows how the actors integrate with the system.

3.3 System Description

For our project we decided to use Django as it is a high-level Python web framework that encourages rapid development and clean, pragmatic design. It's free and open source. We follow the MVT design pattern for developing our system. Model—View—Template (MVT) is a software design pattern for implementing user interfaces on computers. It divides a given software application into three interconnected parts, so as to separate internal representations of information from the ways that information is presented to or accepted from the user.

Model: The model is going to act as the interface of your data. It is responsible for maintaining data. It is the logical data structure behind the entire application and is represented by a database (generally relational databases such as MySQL, Postgres)

View: View is actually the User Interface of the web-application and contains the parts like HTML, CSS and other front-end technologies. Generally, this UI is created from the Models component, i.e., the content comes from the Models component.

Template: A template consists of static parts of the desired HTML output as well as some special syntax describing how dynamic content will be inserted.

This system handles all the necessary and minute details easily and proper database security is made according to the user. Stores data about members, employees, room, owners, tenants etc. Also, OTP verification is included so that the user can be verified.

(GeeksForGeeks, n.d.)

CHAPTER IV

TESTING, DEBUGGING AND RESULTS

4.1 Testing and Debugging

Testing is the process of finding out how well the system works as well as whether the system works as it is intended to. Testing is the crucial phase of development as it helps us find any sort of errors, exceptions, bugs etc. and eliminate them. For testing of this project, we went for manual testing. Manual Testing is the process of finding out errors and bugs in the program. For manual testing, the tester manually executes test cases without using any automation tools. It analyzes the difference between the desired output and actual output and helps to identify them. The results of testing were are:

Table 1: Testing Table

Action	Desired Output	Actual Output	Result
1. Back End-	Login Page	Login Page	Success
Admin			
1.1 Admin			
Dashboard without			
Login			
1.2 After Login	Admin Dashboard	Admin Dashboard	Success
0. Room detail	Room Detail Form	Room Detail Form	Success
2.1 Add Rooms			
2.2 Room Added	Added Room in	Added Room in	Success
Successfully	database and table	database and table	
2.3 Update and delete	Update and delete room	Update and delete room	Success
room	in database and table	in database and table	
0. Booking	Added request	Added request	Success
3.1 Booked room			
successfully			

0. Team	Team member form as	Team member form as	Success
members	owner	owner	
4.1 Add Team			
members			
4.2 Team member	Added Team member	Added Team member	Success
added successfully	in the database and	in the database and	
	table	table	
4.3 Update and	Update and delete in the	Update and delete in the	Success
Delete members	database and table	database and table	
successfully			
0. Front end -	Homepage	Homepage	Success
customer			
5.1 Customer enters			
URL			
5.2 Get Rooms	Room displayed	Books displayed	Success
5.3 View Room detail	Detailed information of	Detailed information of	Success
	room	room	
5.4 Add review with	Review added	Review added	Success
login			
5.5 View review	Review page	Review page	Success
without login			
5.6 Add review	Register/Login page	Register/Login page	Success
without login			
5.7 View Customer	Customer profile with	Customer profile with	Success
Profile	rooms, reviews, profile	rooms, reviews, profile	
	information	information	
5.8 Edit profile	Profile information	Profile information	Success
information	updated successfully	updated successfully	
5.9 Delete profile	Register/Login	Register/Login	Success
information	page	page	

5.10 I	Logout		Logout successfully	Logout successfully	Success
5.11	Register	new	Registration form	Registration form	Success
user					
5.12	New	User	Customer information	Customer information	Success
Registered			to database	to database	
Succe	essfully				

This table shows the testing of our system and debugging of the errors present in the system. We faced many problems when implementing the system so we performed the necessary actions to fix those errors and again tested the functionality of the system. While testing we were expecting some outputs which were fulfilled.

4.2 Result and Analysis

We have a login panel where when registering we can select the type of user you want to register between customer and room owner. Customers don't get access to the admin login panel. After the owner has logged in, they can add room and room details. They also can view and edit room, room details, book details. All these options of adding and viewing information is displayed in left side of the panel.

Customer at first views details of the room as Guest where they can see the rooms available in the body of the web page. The guest users can only view all the room details but cannot book rooms. Registration and login are needed to book the room and add room as per the role of the user. Registration and login are located at the top right of the website. After registration they can login through their username and password. After successful login they are redirected to their profile where they can see all information, they had input while registering.

CHAPTER V

SUMMARY

5.1 Conclusion

In this digital world mainly, everything is being digitized. I have seen in spite of everything being digitized many people still prefer old methods. Many people still keep records by writing them down on paper which is not a bad thing but it is not systematic and organized. The increased number of tenants and Landlords makes management difficult, especially for the landlords who are losing huge amounts of money.

Developing a system which will be able to manage all these operations comes with many advantages, especially for the Landlords who will be able to manage all the necessary components easily. Both renting and buying have their financial advantages, and owning a home isn't right for everyone. But looking for a suitable place is very time-consuming and it can be very frustrating to them so our system considers this problem and tries to solve this problem.

5.2 Limitations

No matter how much we try to make a perfect system there will always be some limitations in the project. Likewise, we have noticed some of the limitations in our projects.

- No integrated payment system
- No notification system is included

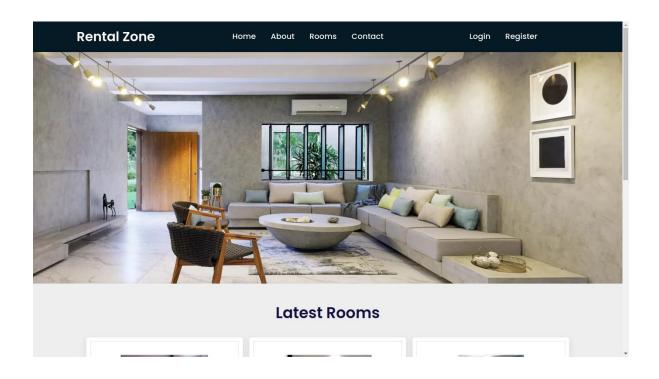
5.3 Future Enhancement/Recommendations

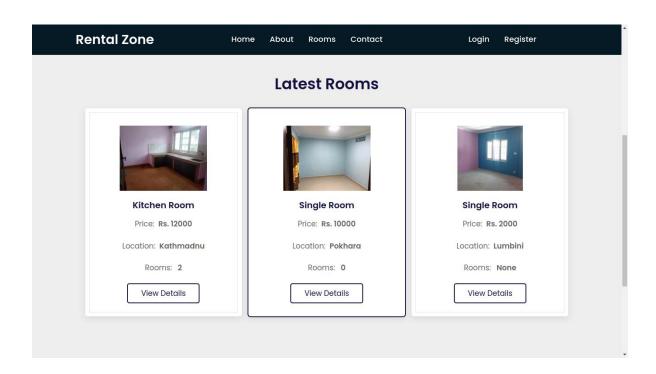
- Inbuilt chat system
- PDF generator of monthly payment
- Notification system is to be implemented

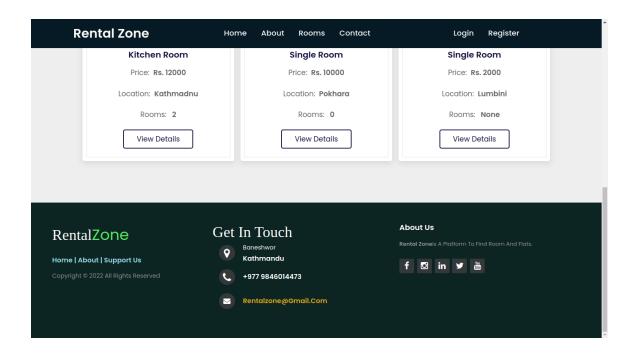
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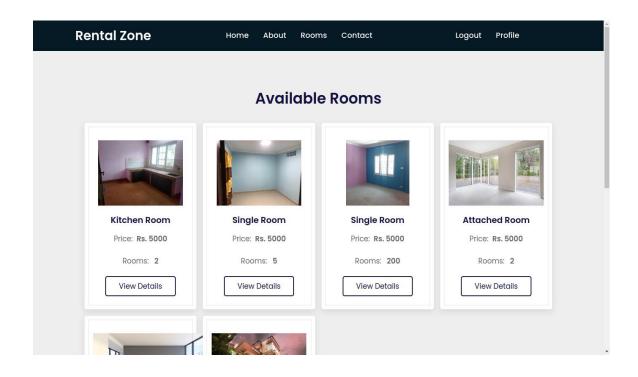
GeeksForGeeks. (n.d.). *GeeksForGeeks*. Retrieved from GeeksForGeeks: https://www.geeksforgeeks.org/django-project-mvt-structure/

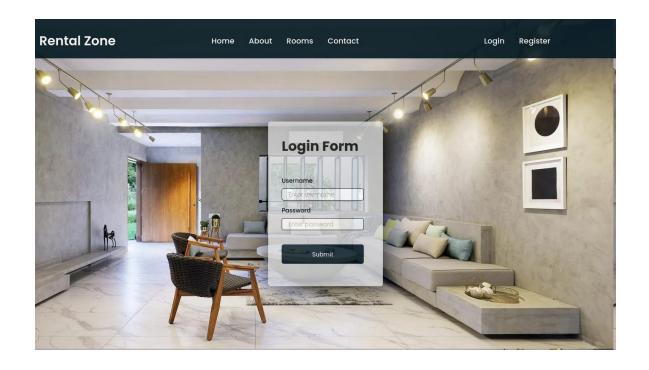
APPENDICES

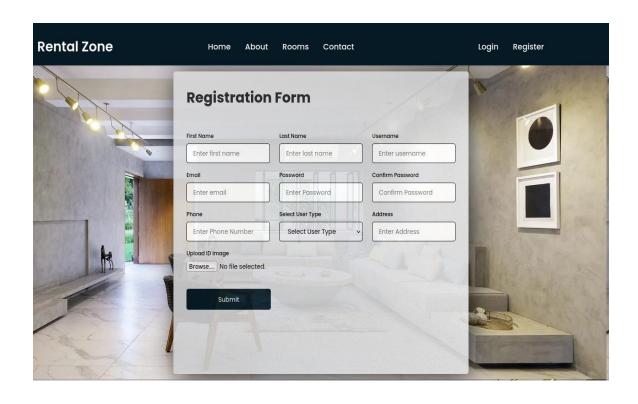


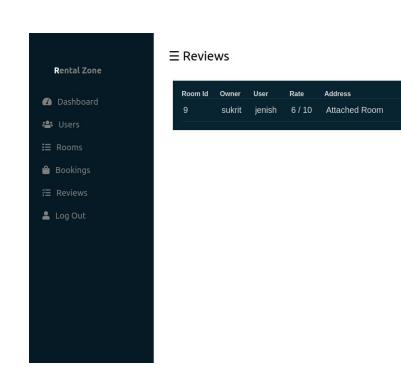












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