HOSTEL INFORMATION SYSTEM

(A DESKTOP BASED APPLICATION)

FOR

GOLBAL BOYS HOSTEL

BY

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Orchid International College

A Summer Project Report Submitted to

Faculty of Management, Tribhuvan University

in partial fulfillment of the requirements for the degree of

Bachelor of Information Management

Kathmandu

September, 2021

STUDENT DECLERATION

This is to certify that I have completed the summer Project entitled “Hostel Information System” under the guidance of “Er. Dhiraj Kumar Jha” in partial fulfillment of the requirement for the degree of **Bachelor of Information Management** at faculty of management, TU. This is my original work and I have not submitted it elsewhere.

Date:

Name: Arun Bhandari

Signature:

CERTIFICATION FROM THE SUPERVISOR

This is to certify that the summer project entitled “Hostel Information System” is an academic work done by “Arun Bhandari” under the guidance of “Er. Dhiraj Kumar Jha” in partial fulfillment of the requirement for the degree of **Bachelor of Information Management** at Faculty of Management, Tribhuvan University under my guidance and supervision. To the best of my knowledge, the information presented by him/her in the summer project report has not been submitted earlier.

_____

Signature of Supervisor

Name: Er. Dhiraj Kumar Jha

Designation: Project Supervisor

Date:

ACKNOWLEDGEMENTS

This summer project report has been prepared for fulfilling the requirements for the degree of Bachelor in Information Management (BIM) under the faculty of Management Tribhuvan University.

First of all, I would like to thank the University for including such a marvelous task in the curriculum of BIM. Along with that I am thankful to our college Orchid International College, for providing me the opportunity to gather such practical knowledge and Er.Dhiraj Kumar Jha, my project coordinator for his support and inspiration to grow and develop.

I am also thankful to the Global Boys Hostel manager (warden) and staff members for supporting me and providing me with vital information needed for the completion of my project.

As a whole, I would like to thank those who directly or indirectly supported me. This outcome is the result of their support and encouragement.

Sincerely,

Name: Arun Bhandari (8149/17)

EXECUTIVE SUMMARY

The title of this project is “Hostel Information System”, the main objective of building this web-based application is all about sharing the information about the hostel. This system helps to manage the student, staff and room detail. The system is based on Waterfall Model approach that breakdown of project activities into linear sequential phases, where each phase depends on the deliverables of the previous one and corresponds to a specialization of task.

This system helps to view the required information of students, staffs and even makes easy for users to view detail about the hostel. This system is build for making daily activities more effective.

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LIST OF ABBRVIATIONS

BIM: Bachelor Information Management

GBH: Global Boys Hostel

ER: Entity Relationship

OIC: Orchid International College

TU: Tribhuvan University

GUI: Graphical User Interface

HIS: Hostel Information Systems

CHAPTER I INTRODUCTION

1.1 Background

The project hostel information system is basically developed for students who are facing problems to find hostel in Kathmandu valley. This organization was facing problems for storing details of students, and staff. They still prefer recording the entries like old tradition way, so with the implementation of this system there will be efficient management of data and information. As well as, this system will help the organization for advertisement also.

1.2 Introduction of organization

Global Boys Hostel (GBH) is providing the service since 2012 A.D in Santinagar, Kathmandu, Nepal. It has been providing various services to their students from very beginning. From the beginning, they have been using old methods for keeping the detail of students and staffs also for viewing the information, facilities, offers provided by GBH.

The system is basically developed to meet the requirement of Global Boys Hostel. The major purposes of developing this system are:

i. To make working procedure faster and automated.
ii. To make the existing manual system into computerized system.
iii. To increase customer access from most different part of the country.

The overall structure of the system looks like as shown in the diagram below:

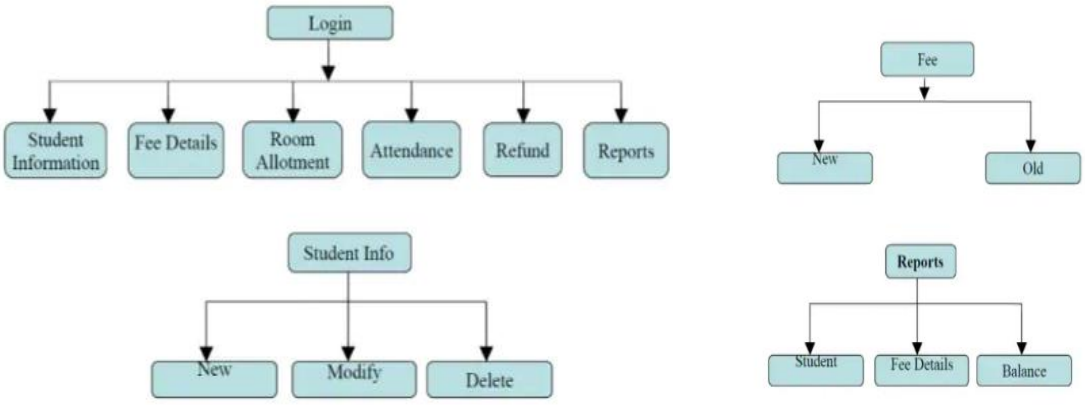

Figure1.1: Overall view of the system hierarchy ("Presentation of software engineering", 2016)

1.3 Current Situation of organization

The organization is still based on the manual book keeping system for maintain record of students and employees. They have kept records in MS-WORD and payment transaction in MS-EXCEL.

As technology trends is growing faster, computers now-days are being part of human life. Through computer business, organizations, schools, companies and etc can transact to their clients in a convenient way using the advance technologies and the special applications software. This web-based application is created for students, guests, guardians who are seeking to find a place to stay, get healthy food with good facilities at reasonable price.

1.4 Problem of the Report

There are a lot of drawbacks in keeping and maintaining a hostel. Especially with a manual system. Room allocation also becomes a problem as the officer might not know which rooms are available or not. The manual work from which it is very difficult to find the record of the students, the mess bills of the students, and the information about those who had left the hostel. That's why to fulfill such drawbacks the organization GBH allowed to make this system.

1.5 Literature Review

The Hostel Management framework is a web application which is created for managing different activities in the hostel. This project is expected to limit human works and make hostel allocation much easier for student and hostel administrators with the help of the web application to hostel, naturally select the student from the waiting list and mess billing, outpass generation, complaint registration, and so forth. Student will get endorsement notice in their mails. It advises guardians with respect to their wards and their presence in hostel and their curricular will be informed to their parents using this model just in one touch. In last, few years the number of educational establishments is expanding quickly. In this way, the quantity of hostels is additionally expanding for the settlement of the student considering in this college. Also, henceforth there is a considerable measure of strain on the individual who are running the hostel and websites are not generally utilized as a part of this specific circumstance. This specific project manages the issues on dealing with a hostel and helps to deal from the issues which happen when conveyed manually.(Bista et al., 2019)

There has been an astronomical increase in the number of educational institutions established especially in the last four decades all over the world. This development has brought education to the doorstep of people. Consequently it has increased knowledge and helped produce a population of enlightened citizens who can easily abide by the rules of civilized society and contribute meaningfully to the process of democratic governance. Most of the newly established educational institutions however, are using the old conventional techniques for managing their assets especially hostel facilities. This old techniques with its inherent limitations have impacted negatively on the overall organizational efficiency of this educational systems. In this paper, the development of an automated hostel accommodation management system is proposed. The codes for the automated system were developed using Visual Basic and Microsoft Access was used to develop the underlying database. It also has in-built authentication algorithm for preventing unauthorized access. The developed system overcomes the drawbacks of traditional methods of hostel management; it is more user-friendly, graphical-user-interface oriented, reliable, efficient and secured with access control mechanisms. (Ayanlowo & Olatinwo , 2014)

Hostel is the place which is just like second home for the people who lives outside from their home. They feel safe while living in hostel. For the past few years the number of educational institutions is increasing rapidly. There by the number of hostels is also increasing for the accommodation of the students studying in this institution. So to manage the data and information of the person who are living there is a very complex task. It needs a lot of time of many people who are managing it. So this problem can be solved by a system which can do the entire task related to information handling without any complexity and just a few clicks. Using this computerized system, it is easy to retrieve the older records from the database. It also manages all the data related to students like their personal details, contact information and also store the details about student payment details, room allotment details and also hostel clearance details. One of the most important aspects is that system provides high security to the financial aspects of the student. All these details are managed online very easily and can be accessed without any problem from anywhere anytime through internet. System can easily perform any activity like upgradations, modification, deletion of the data at any time by the authorized person. It provides high security to the information stored in the database to access. (A & Murthy, 2018)

1.6 Objectives

- To build a web application to track the students, rooms, staffs.
- To make working procedure faster and automated.

1.7 Methodology

This system has been build using Laravel and MySQL for backend and PHP, HTML, CSS, jQuery, Bootstrap for fronted which is used to store information into database. The IOE that is used to build this system is PhpStrome, this tool is fast, stable, easy to use and debug then other tools.

1.7.1 Project Framework

This system has been developed using Waterfall Model. In waterfall model the requirements are well known, and it is suitable for small projects. It is also know as linear sequential lifecycle. It is very simple to understand and use. In waterfall model, each phase must be completed before the next phase can begin and there is no overlapping in the phase. The Waterfall model is the earliest SDLC approach that was used for software development. The waterfall Model illustrates the software development process in a linear sequential flow. This means that any phase in the development process begins only if the previous phase is complete. In this waterfall model, the phases do not overlap.

The following illustration is a representation of the different phases of the Waterfall Model.

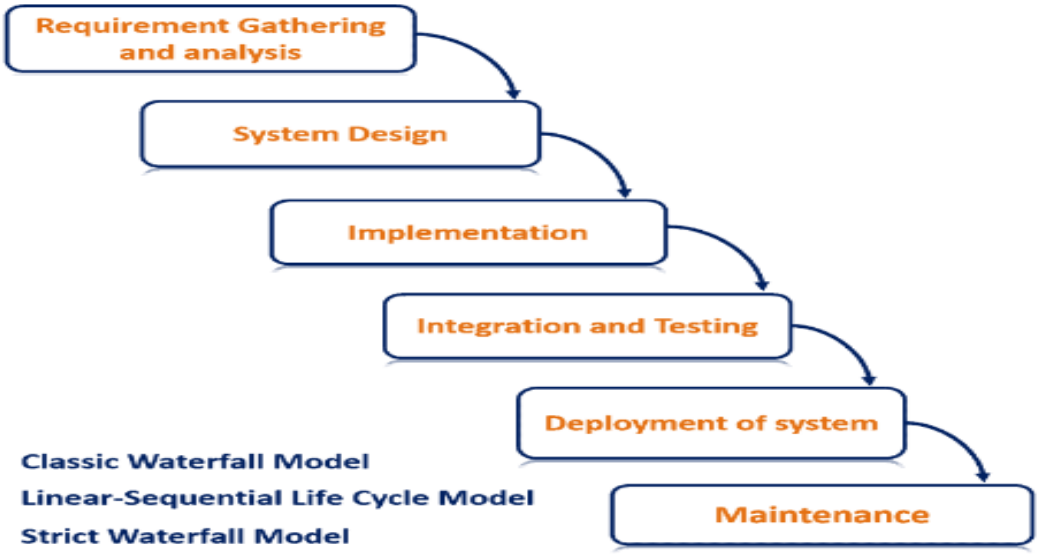

Figure 1.2 The Waterfall Model ("SDLC - Waterfall Model", 2021)

1.7.2 Data and Information

The data and information were collected through field visit by conducting a face-to-face interview and discussion with the management of Global Boys Hostel. Data used for this report are primary data.

1.7.3 Technique of Project Report Analysis

In this phase the feasibility study is done. As the name implies, feasibility study is used to determine the viability of an idea, such as ensuring a project is legally and technologically feasible as well as economically justifiable. It tell us whether a project is worth the investment. It also covers cost estimation and time that project will be completed using this analysis.

1.7.4 Tools and Technology

The tools used for the developing of this system are:

- PHP, HTML, CSS, jQuery : Fronted Programming.
- PhpStrome : IDE (Integrated Development Environment).
- Xampp : Web-server Package (Apache + MySQL).
- Draw.io : Developing diagramming and vector graphics application.

CHAPTER II TASK AND ACTIVITIES PERFORMED

2.1 Analysis of Tasks, Activities, Problems and Issues

2.1.1 Analysis of Tasks

The summer project is of the highlighted subjects which helps to make students be some part of professional world. Among the various options provided, I used Laravel based web system. Similarly, among the various organizations, I selected Hostel Information System for Global Boys Hostel, to understand the technical aspect of the real world in an organization.

2.2 Analysis of Possible Solution

2.2.1 Requirement Analysis

Requirements analysis or requirements engineering is a process used to determine the needs and expectations of a new product. It involves frequent communication with the stakeholders and end-users of the product to define expectations, resolve conflicts, and document all the key requirements. Requirements analysis focuses on the tasks that determine the needs or conditions to meet the new or altered product or project, taking account of the possibly conflicting requirements of the various stakeholders, analyzing, documenting, validating and managing software or system requirements.

It also provides an appropriate mechanism for understanding what the customer wants, analysis the needs, assessing the feasibility, negotiating the reasonable solution, verifying the specification and validating it for the operating system.

The various steps of requirement analysis are:

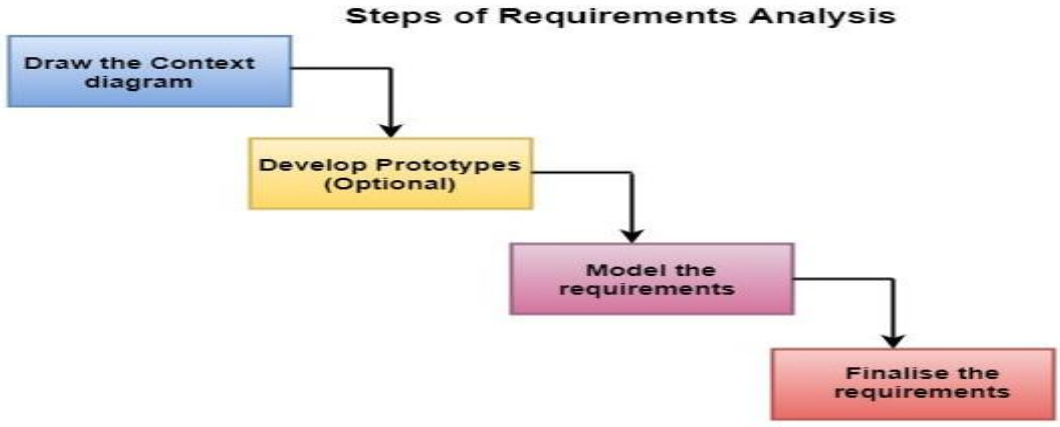

Figure 2.1 Steps of requirement analysis ("SDLC - Waterfall Model", 2021)

2.2.2 Functional Requirement

Functional requirement defines a function of a system or its component, where a function is described as a specification of behavior between inputs and outputs. Functional requirements may involve calculations, technical details, data manipulation and processing, and other specific functionality that define what a system is supposed to accomplish.

It can briefly described by the help of use-case diagram which is as follows:

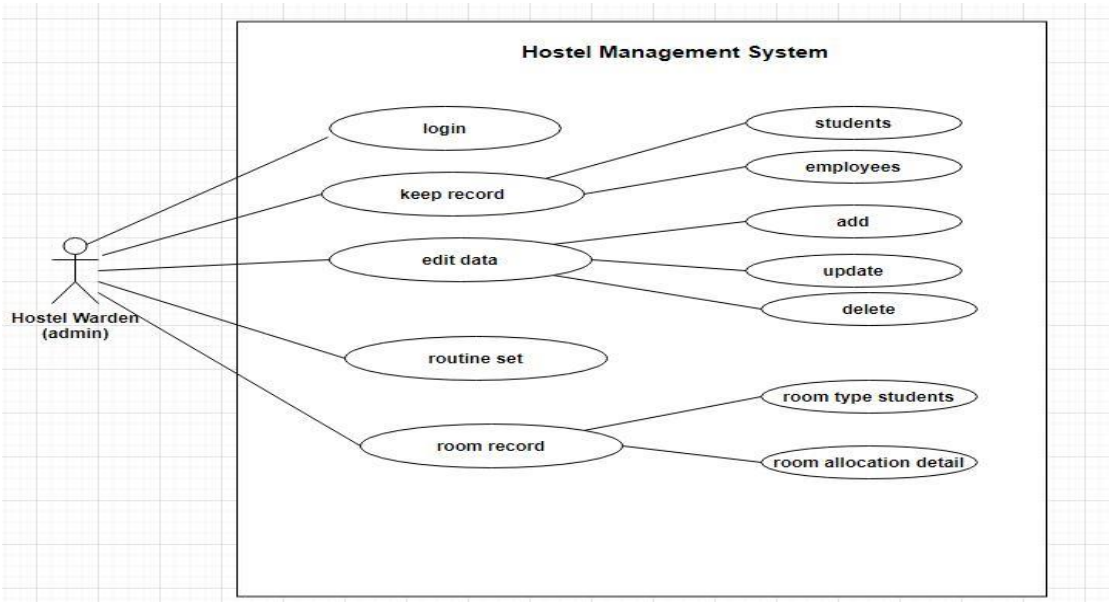

Figure 2.2 Use-case Diagram

Use-case Description

Table 2.1 Login into the system

Use Case Identifier	UC-01: Login
Primary Actor	Admin
Secondary Actor	None
Description	Allow administrator to login into the system through allocated username and password.
Pre-condition	Administrator have to know the username and password assigned to them.
Post Condition	User can perform the task in the system according to their privilege.
Success Scenario	Login success message should be displayed.

Failure Scenario	Login failed message should be displayed.

Table 2.2 Logout from the system

Use Case Identifier	UC-02: Logout
Primary Actor	Admin
Secondary Actors	None
Description	Allow administrator to logout from the system.
Pre-condition	Administrator must login in the system.
Post Condition	Administrator must close the system securely.
Success Scenario	Logout success message should be displayed.
Failure Scenario	Logout failed message should be displayed.

Table 2.3 Keep Record

Use Case Identifier	UC-03: Keep Record
Primary Actor	Admin
Secondary Actors	None
Description	The admin shall keep the record of students who have joined the hostel and also of staffs.
Pre-condition	The admin have to get the information of students and employees
Post Condition	The students and employees can also tell provide wrong information.
Success Scenario	The system shall show the recorded information of students and employees.
Success Scenario	The system shall show the recorded information of students and employees.
Failure Scenario	The system does not record information.

Table 2.4 Edit Data

Use Case Identifier	UC-04: Edit Data
Primary Actor	Admin
Secondary Actors	None
Description	The admin shall add, update and delete the information of students and staffs.
Pre-condition	The system shows all the edited data.
Post Condition	The database must be updated.
Success Scenario	The success message should be displayed on the screen.
Failure Scenario	The database is not connected or misconfigured.

Table 2.5 Room Record

Use Case Identifier	UC-05: Room Record
Primary Actor	Admin
Secondary Actors	None
Description	The admin should record the entry(students who are in the hostel) and the room allocated to them.
Pre-condition	The admin must be logged in.
Post Condition	The database must be updated after new members is added.
Success Scenario	The system views records of students with their rooms.
Failure Scenario	The system doesn’t view their records.

Table 2.6 Set Routine

Use Case Identifier	UC-05: Set Routine
Primary Actor	Admin
Secondary Actors	None
Description	The admin shall set the routine of one week or more for students about food, playing, visiting guest, phone call, watching tv.
Pre-condition	The admin must be logged in.
Post Condition	The acknowledgment must be received .
Success Scenario	The system shows the routine in the web page.
Failure Scenario	The system failed to post the routine.

2.2.3 Non-Functional Requirement

- The proposed system shall be highly efficient, effective and multi-functional in case of the performance.
- The proposed system shall be consistence and accurate of the collected and stored data.

2.2.4 Software Requirement

Table 2.7 Software Requirement

Software	**Purpose**
PhpStorm	In order to design layout and coding.
MySQL	In order to establish communication between data and database.
Microsoft Word	For documentation of the project.
Draw.io	In order to draw ER Diagram, Use-Case Diagram, Sequence Diagram and the like.

2.2.5 Problem and Issue

The ER Diagram constitutes a technique for representing the logical structure of a database in a pictorial manner. This analysis is then used to organize data as a relation, normalizing relation and finally obtaining a relation database.

To solve the problems and issues of the organization, following ER Diagram is drawn:

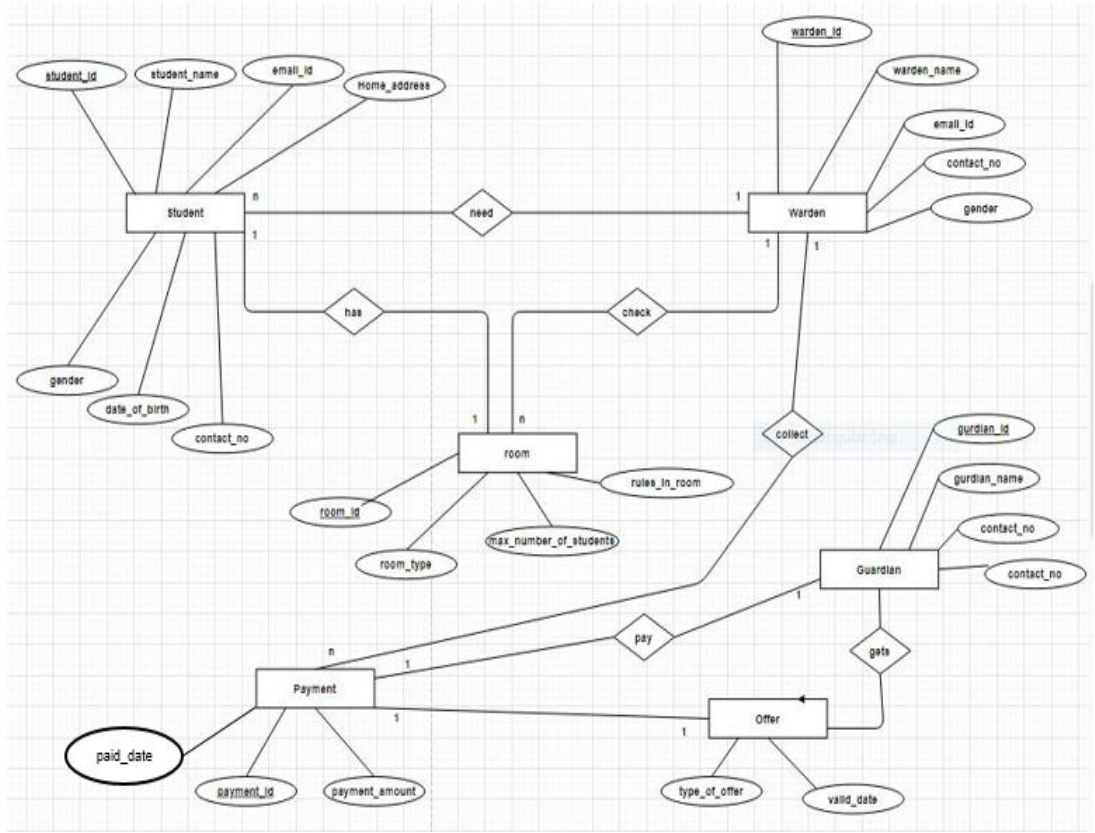

Figure 2.3 ER Diagram

2.2.5 Software Design

Software design is a process to conceptualize the software requirements into software implementation. It is initial phase of physical deployment of any solution, which shows the process of system functioning.

Relational Model

The relational model provides conceptual tools to design the database schema of the relational database. The relational model describes the data, relationship between that data, data sematic and constraints on the data in the relational database. The relational model expresses the data and relationship among the data in the form of tables.

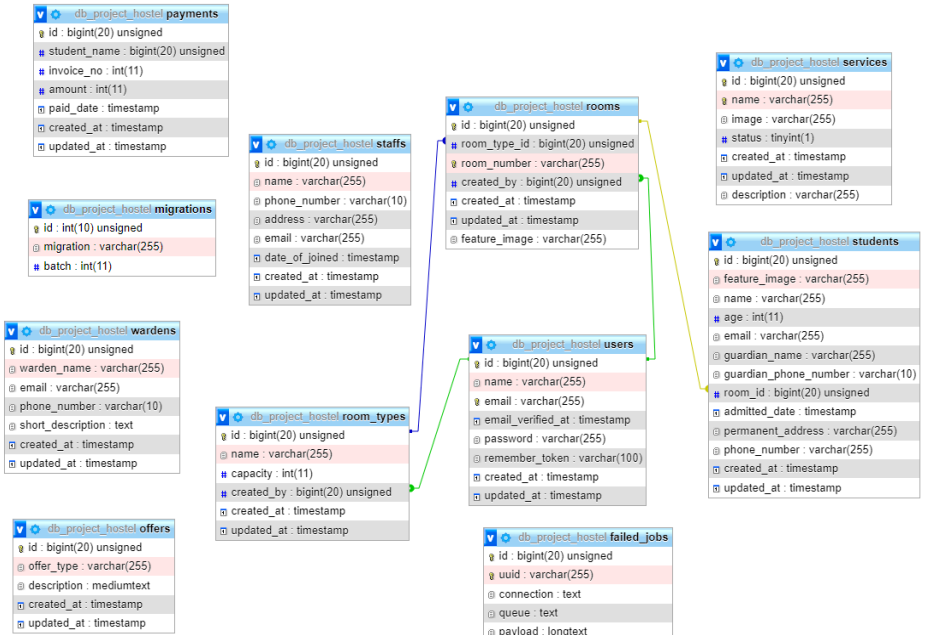

Figure 2.4 Relational Model

Class Diagram

Class diagram in the Unified Modeling Language (UML) is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations (or methods), and the relationships among objects. They are used when developing an object-oriented system model to show the classes in the system and the associations between these classes. Class diagram are used for modeling the static structure of the object classes in a software system.

Solution design can also be shown with the help of class diagram which is given below:

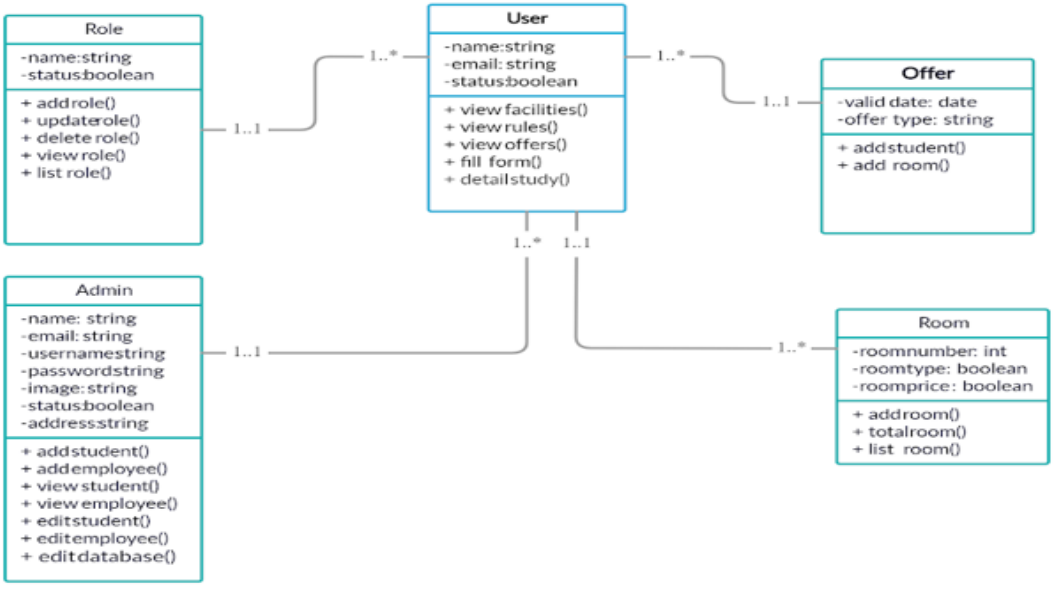

Figure 2.5 Class Diagram

2.2.6 State Diagram

The Unified Modeling Language (UML) supports event-based modeling using state diagrams, which were based on state-charts. State diagrams shows how the system reacts to internal and external events. It shows system states and events that cause transitions from one state to another. They do not show the flow of data within the system but may include additional information on the computations carried out in each state.

Following diagram shows one of the activity of the system:

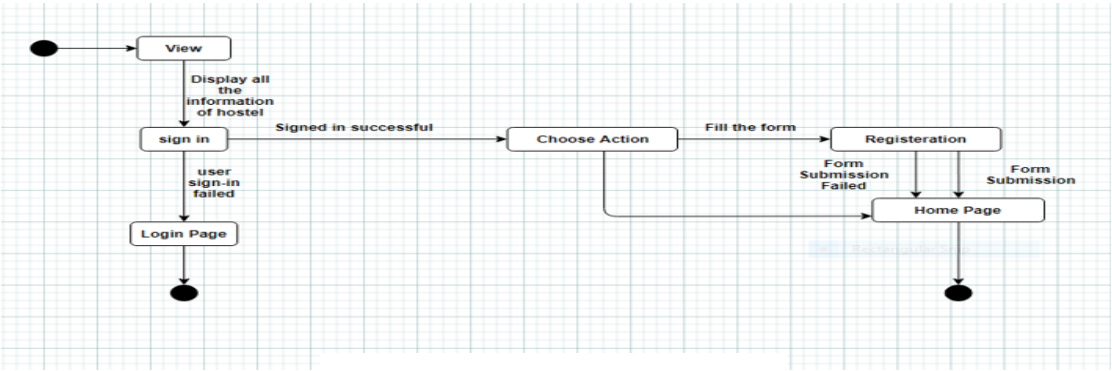

Figure 2.6 State Diagram

2.2.7 Design Diagram

Sequence Diagram

A sequence diagram shows the sequence of the interactions that take place during a particular use case or use case instance. It shows the interactions between actors and the system and between system components

Sequence diagram is shown below:

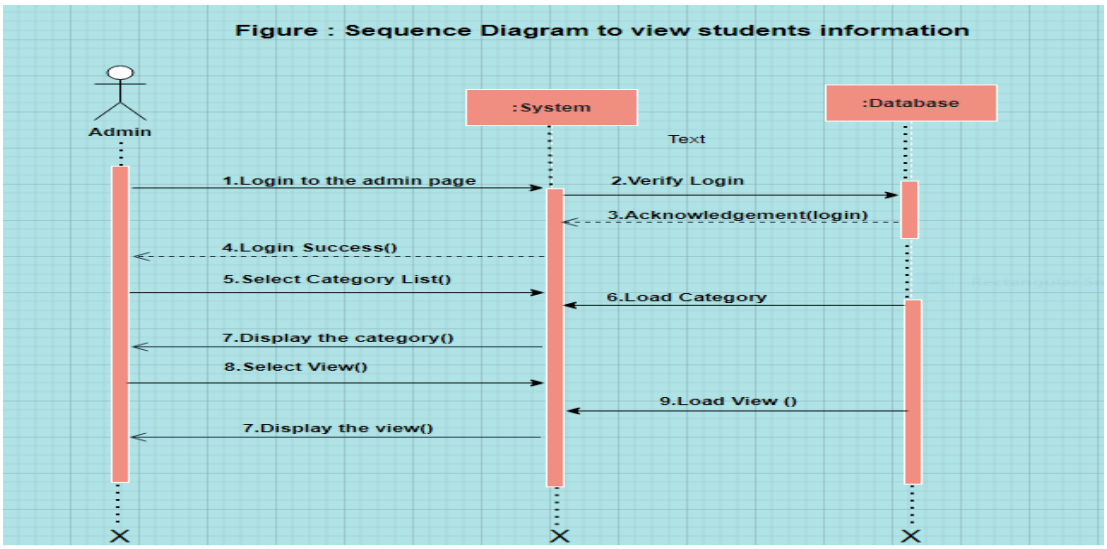

Figure 2.7 Sequence Diagram

2.2.8 Testing

Testing is a method to check whether the actual software product matches expected requirements and to ensure that software product is Defect free. It involves execution of software/system components using manual or automated tools to evaluate one or more properties of interest. The purpose of software testing is to identify errors, gaps or missing requirements in contrast to actual requirements.

Table 2.8 Test Case (Login)

Project Name: Hostel Information System						
Test Case						
Test Case ID: TC_001			Test Designed by: Robert			
Test Priority (Low/Medium/High): Medium			Test Designed date: 2021-03-01			
Module Name: Login to the system.			Test Executed by: Peter			
Test Title: Verify Login			Test Execution date: 2021-03-02			
Description: Admin should enter valid username and password to login the system.						
Pre-conditions: Admin must remember username and password.						
Dependencies:						
Steps	Test Steps	Test Data	Expected Result	Actual Result	Status (Pass/Fail)	Notes
1.	Open the system		The system must display login page.	As expected i.e. admin can view the login page.	Pass	
2.	Enter valid username and password	Username = robert112 Password =*******	The admin enters valid username and password.	As expected.	Pass	
3.	View home page		After entering valid username and password the admin gets to dashboard page.	As expected.	Pass	

Post-conditions: User successfully exit the car from VPMS with print receipt. Detail information of transaction is logged into the database.

2.3 Findings

After analyzing about the organization, it was found that if the organization does not use automated system for hostel management than it will become time consuming. If organization uses the hostel management system to store data and information in the system.

CHAPTER III DISCUSSION AND CONCLUSION

3.1 Discussion

The system can help to reduce the problems in the organization, more reliable and consume less time and afford. The system can provide the information of hostel, students, staffs. Students can get homily environment type hostel. The system is assumed very helpful to the organization. Using this system will make the organization work faster.

3.2 Conclusion

As per the objectives this system was completed in time. The functionality of the present programming requires a proper approach towards programming advancement. This Hostel administration website is intended for individuals who need to handle different activities in the hostel.

The developed system provides solution to manual hostel management problems and also provides information such as hostel information, hostel room information, and students and staffs information.

The software offers stability, cost-effectiveness and usability. It provides the most flexible and adaptable standards management system solutions for hostel. User interface will help to find out how convenient the system. The incremental model used in this system is helpful to check in every phase after each coding.

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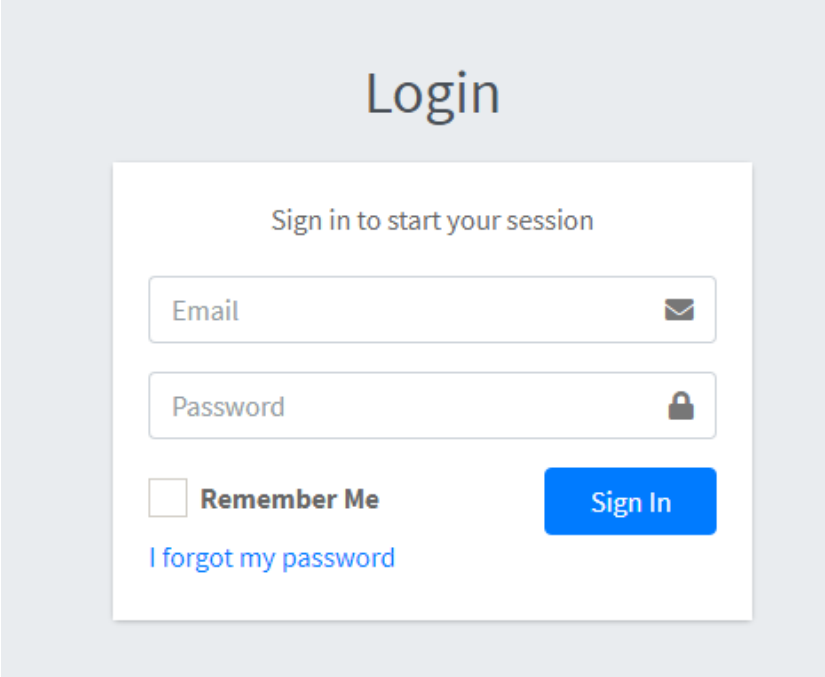
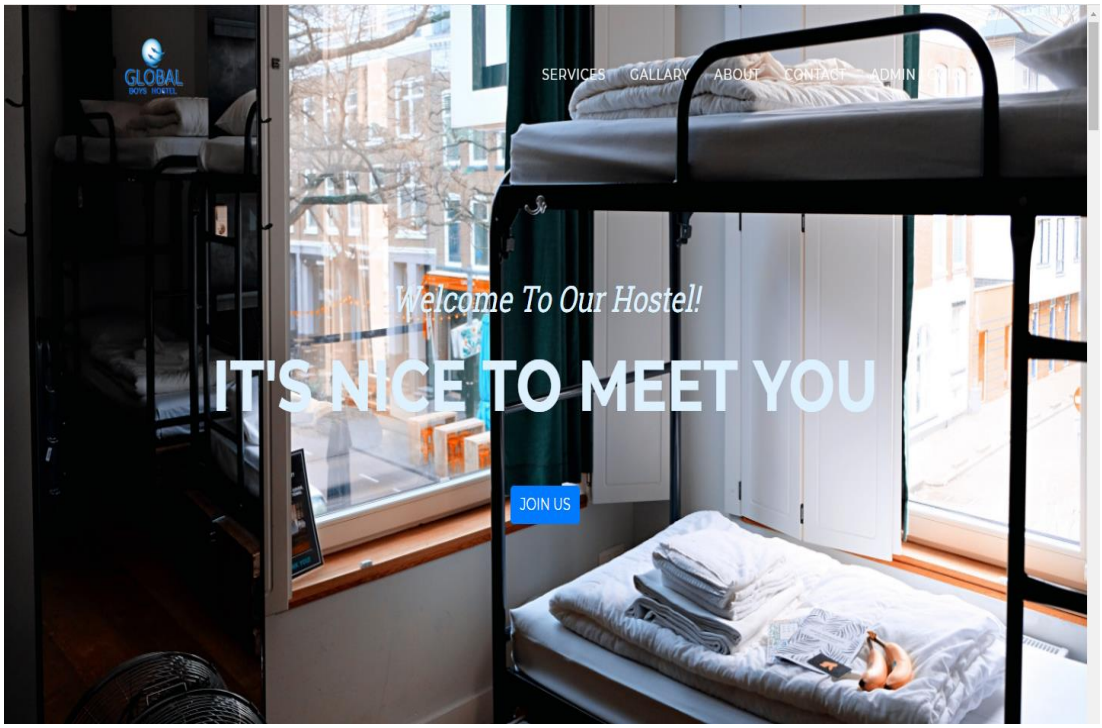
APPENDICES

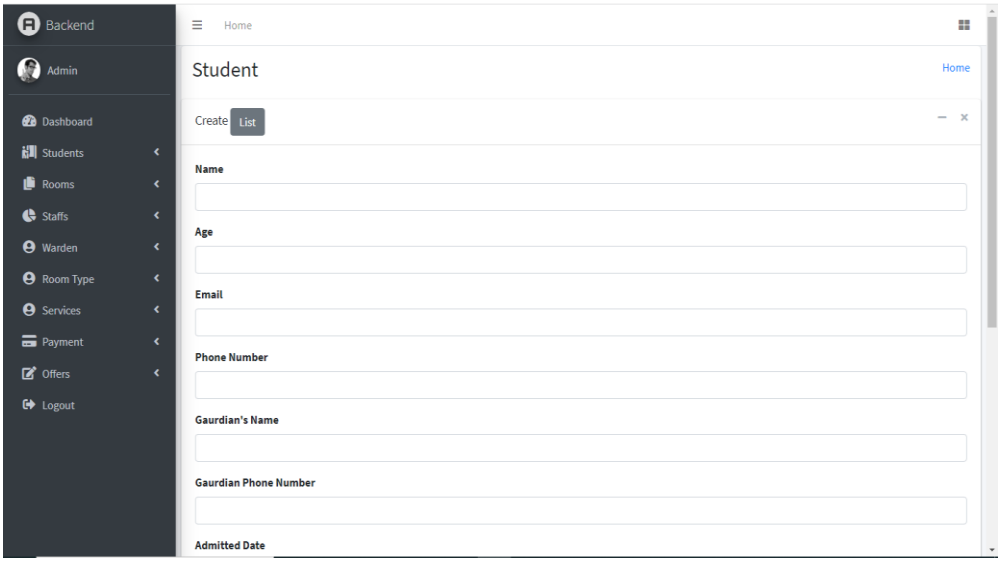
Login Page



Frontend Page



Insert Student



List Student