
Software Requirements Specification for Guest House Management

Version 1.0 approved

Prepared by :

UTKARSH KHURANA(20UCS215)

HRISHIT JHAVERI 20UCS081

YASH PALIWAL 20UCS238

MIHIR BAGADIA 20UCS116

**Department of Computer Science Engineering
The LNM Institute of Information Technology, Jaipur**

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Revision History

Name	Date	Reason For Changes	Version

1. Introduction

The Guest House Management System is a Software system made for management of rooms at LNMIIT Guest house. It provides a proper management tool and easy access to manage the facilities on campus.

1.1 Purpose

The primary objective of this Guest House Management System Software Requirement Specification (SRS) is to provide a detailed overview of the GHMS, its parameters, constraints and goals. This SRS document will be used in the future stages of the project which will help for the development of correct software for the end user. This document clearly mentions the expectations and requirements of the client and the resources available to them.

1.2 Document Conventions

The document uses the following conventions:

Term	Definition
SRS	Software Requirements Specification
GHMS	Guest House Management System
Admin	The person from Guest House who will have the authority to make final decisions
User	Any member of the Institute, be it student, faculty member, staff member or any other official who would use the system for room booking
GNR	Guest Name Record – automatically generated Unique Id which can be used for checking booking status
Client	The Guest house authority which uses this software for automating its operations

1.3 Intended Audience and Reading Suggestions

The document is intended for requirements engineer, domain expert and developer.

1.4 Product Scope

This software's main objective is to provide a system for a guest house to automate its major operations. The software automatically reserves 80% of the total rooms on first come first serve basis and rest of the 20% rooms are allotted on priority basis, which is decided manually by the Admin. Our GHMS will have two end users: Students and Admin. GHMS consists of Booking Management System, DBMS Server, and Report Generator. End users can check the room's availability and select and book the rooms. The Admin will have access to approve, update or modify booking details.

1.5 References

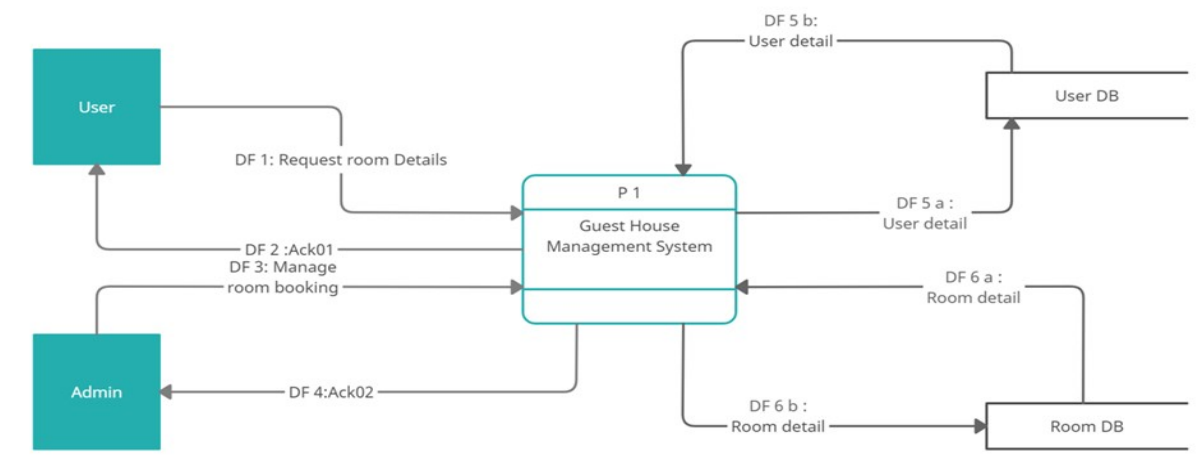
- [1] IEEE. IEEE Std 830-1998 IEEE Recommended Practice for Software Requirements Specifications. IEEE Computer Society, 1998.
- [2] Software Engineering, Ian Sommerville, Pearson, 2017, 8th edition.
- [3] Software Engineering: A Practitioner's Approach by Roger Pressman, TMH, 6th / 7th Editions

2. Overall Description

2.1 Product Perspective

The Guest House Management System is a new self-contained software product which will be produced by the project team in order to overcome the problems that have occurred due to the current manual system. The newly introduced system will provide an easy access to the system and it will contain user friendly functions with attractive interfaces. The system will give better options for the problem of handling large scale of physical file system, for the errors occurring in calculations and all the other required tasks that has been specified by the client. The outcome of this project will increase the efficiency of almost all the tasks done at the Hotel in a much convenient manner.

2.2 Product Functions



2.2.1 Functional Requirements

- Functions For User(s)
 - Login/ Registration
 - Search for Rooms
 - Request Room Booking
 - Payment
 - Check Booking Status
 - Cancel Booking

- Functions For Admin
 - Confirm/Cancel Booking
 - Add/Delete Rooms
 - Add/Delete User

2.3 User Classes and Characteristics

2.3.2 User Classes

There are 2 user Levels in our Guest House Management System:

- A. Admin
- B. Students / faculty

Admin

Admin has every access to the guest house system. Admin is solely responsible for managing Guest house resources. Admin can view any report such as guest information, booking information, and room information, analyze them and take the decision accordingly. Admin is required to have base knowledge of database and application server.

Student and Faculty

User has access to view the vacant room information and price range. They should be able to confirm the booking if rooms are available and cancel it if necessary. User should at least be capable to use the web UI interface.

2.3.3 User Characteristics

This is a web-based software and it does not require any specific prerequisites from the end user.

- User should be a member of institute
- User must have basic skills such as:
 - Knowledge of English
 - Familiarity with computer and internet.

2.4 Operating Environment

Client Side			
	Processor	Ram	Disk Space
Google Chrome	1 gigahertz (GHz) or faster with support for PAE, NX, and SSE2	1 gigabyte (GB) (32-bit) or 2 GB (64-bit)	16 GB (32-bit) or 20 GB (64-bit)
Server Side			
Apache Server	2 x Intel Core 2 (2.66 GHz, 128K cache)	4GB	10 GB

2.5 Design and Implementation Constraints

- I. **Memory:** System will have only 5GB space of data server.
- II. **Language Requirement:** Software must be only in English.
- III. **Budget Constraint:** GHMS is intended to be very simple and has just basic functionalities.

Implementation Constraint:

- IV. The information of all users and booking details must be stored in a database that is accessible by the website.
- V. The number of concurrent users is TBD (to be decided).
- VI. Users may access from any computer that has Internet browsing capabilities and an Internet connection.
- VII. Users must have their correct userID and passwords to enter into their online accounts and do actions.

2.6 User Documentation

1. This software package will come with a user's manual in the form of readings and video tutorials.
2. The manual will help the customer to get well versed with the interfaces, design, and other important details regarding the software.

2.7 Assumptions and Dependencies

- Total rooms to be decided by the admin
- The booking can be cancelled by the admin upto 2 days prior to the check in date due to external events such as college fests, visit of officials, etc. and will be communicated via phone externally.
- A room can be booked for a maximum of three days, after which the guest would have to renew the booking.
- Two specific rooms are reserved for administrative purposes and can be booked only on the director's approval.

3. External Interface Requirements

3.1 User Interfaces

Login Interface:

- There will be two options to either register using the roll No for students or register using the FacultyID for faculty login and registration.
- After login, the user shall see the dashboard which will have 3 options – search for rooms, cancel booking and check booking status.

Administration Interface:

- The user shall verify themselves through an authentication process before making any changes(add/edit) to the Admission Portal.
- Administrator will be provided with GUI's which can be used to add/edit important details regarding Guest House, like add room, delete room, add user, delete user, check pending request.
- In the check pending request option, a new window will open which will show all the pending room booking requests and the details of the check-in, check-out dates, no of person, names of guests.
- The admin can review and either accept or reject the booking.

Room booking interface:

- There will be an option to enter the check in and check out dates for which the user wants a room.
- On the next page, the user can see the rooms which are available on the requested dates and their prices.
- The user can proceed to book the room by clicking the send booking request button where he will be given a form in which he has to enter the names of the guest, number of guest, no of days, contact number and the price will be displayed.
- Then the request would be sent to the admin.

Check booking status:

- The user can see the status of the booking request on this page.
- If the admin has confirmed the booking, there will be an option to pay the booking amount.
- After payment, the user will be able to download the booking receipt.

3.2 Hardware Interfaces

1. Operating System Supports all known operating systems, such as Windows, Linux
2. Computer 1GB+ RAM, monitor with minimum resolution of 1024x768, keyboard, and mouse
3. A Computer where the system is going to be installed which has the above-mentioned specifications.

3.3 Software Interfaces

Following are the software used for the GHMS:

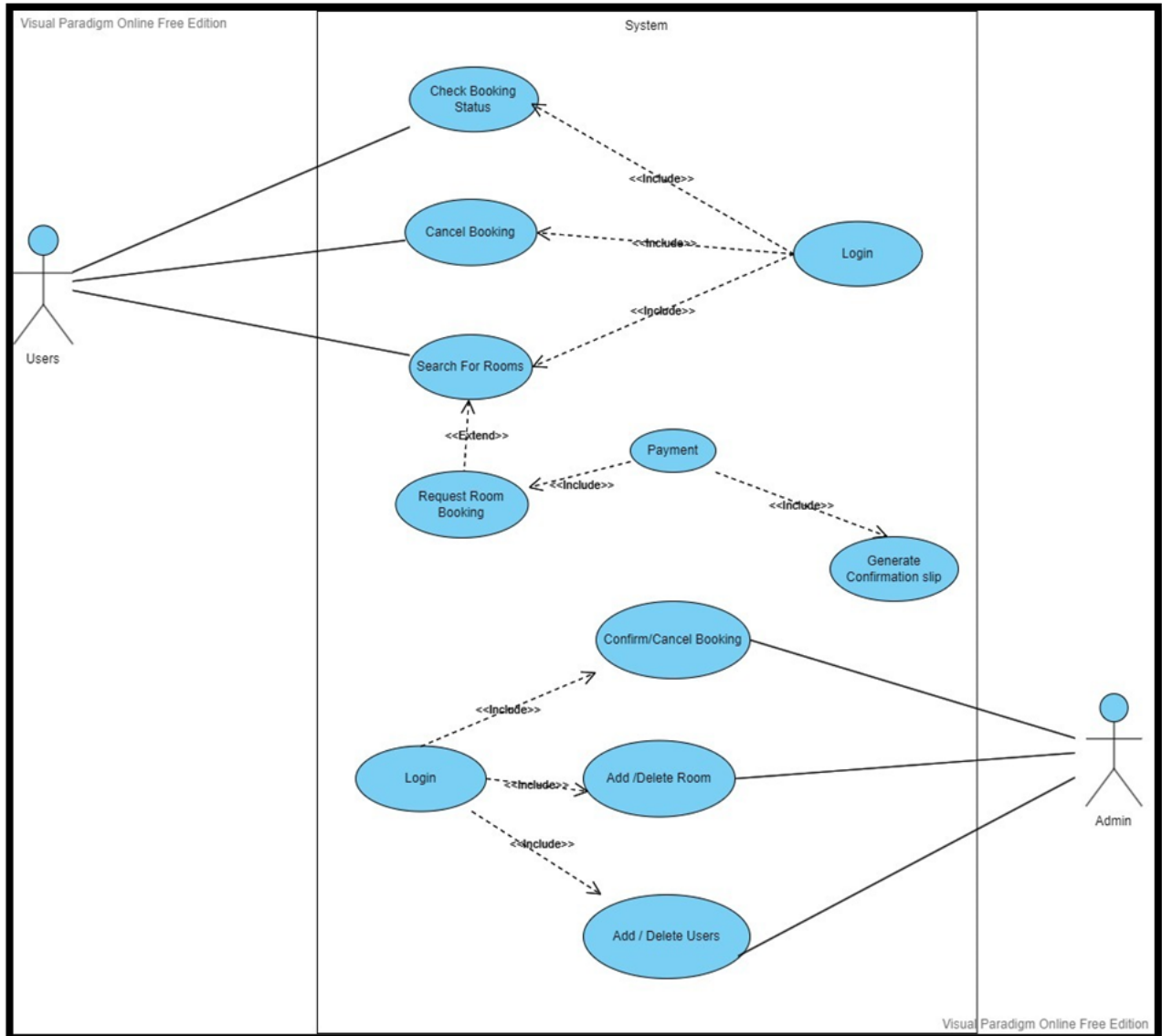
1. This Website works smoothly on any Operating system.
2. To save the Room details, user information and booking details, we have chosen MySQL database.
3. Front end: HTML, CSS, Bootstrap, JavaScript
4. Back End: PHP, JavaScript
5. Deployment: LocalHost (Apache server)

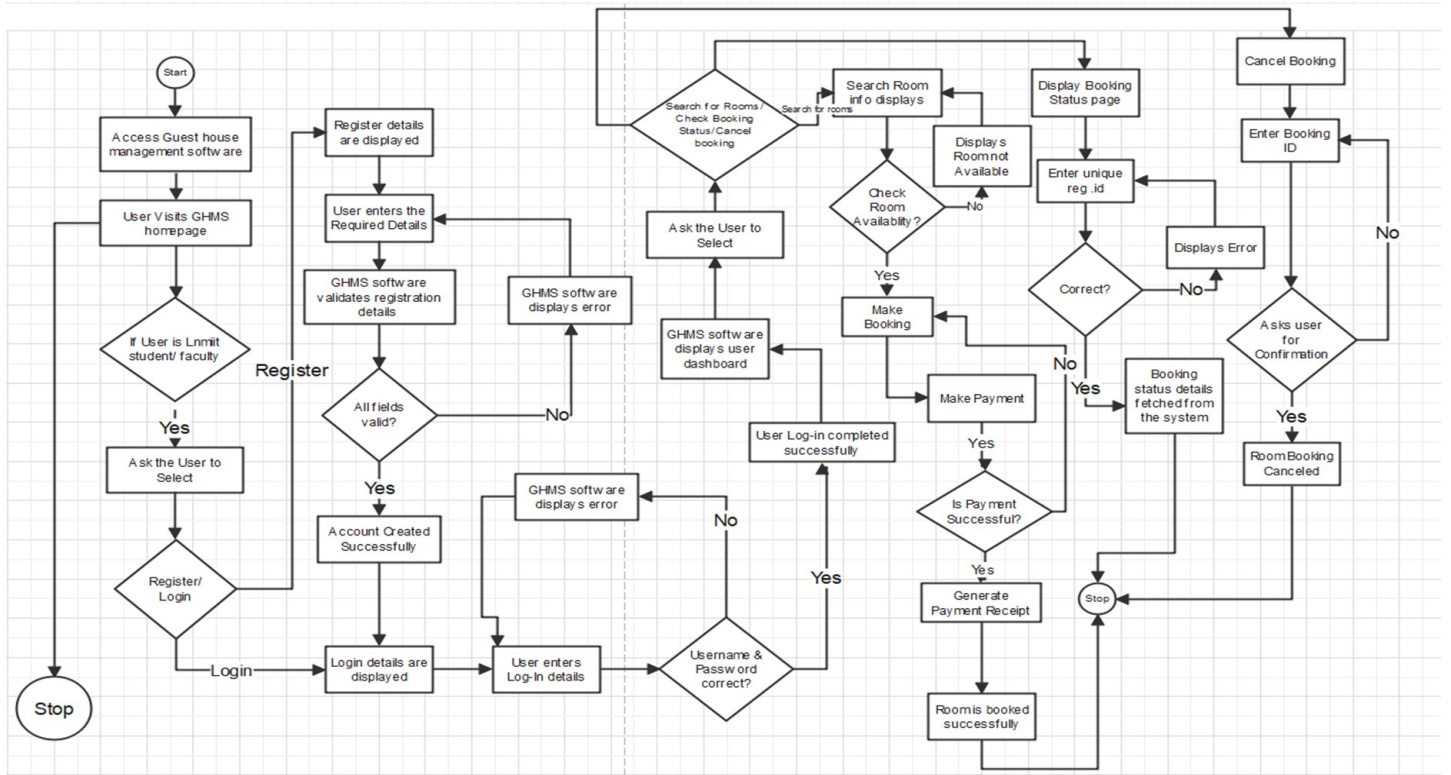
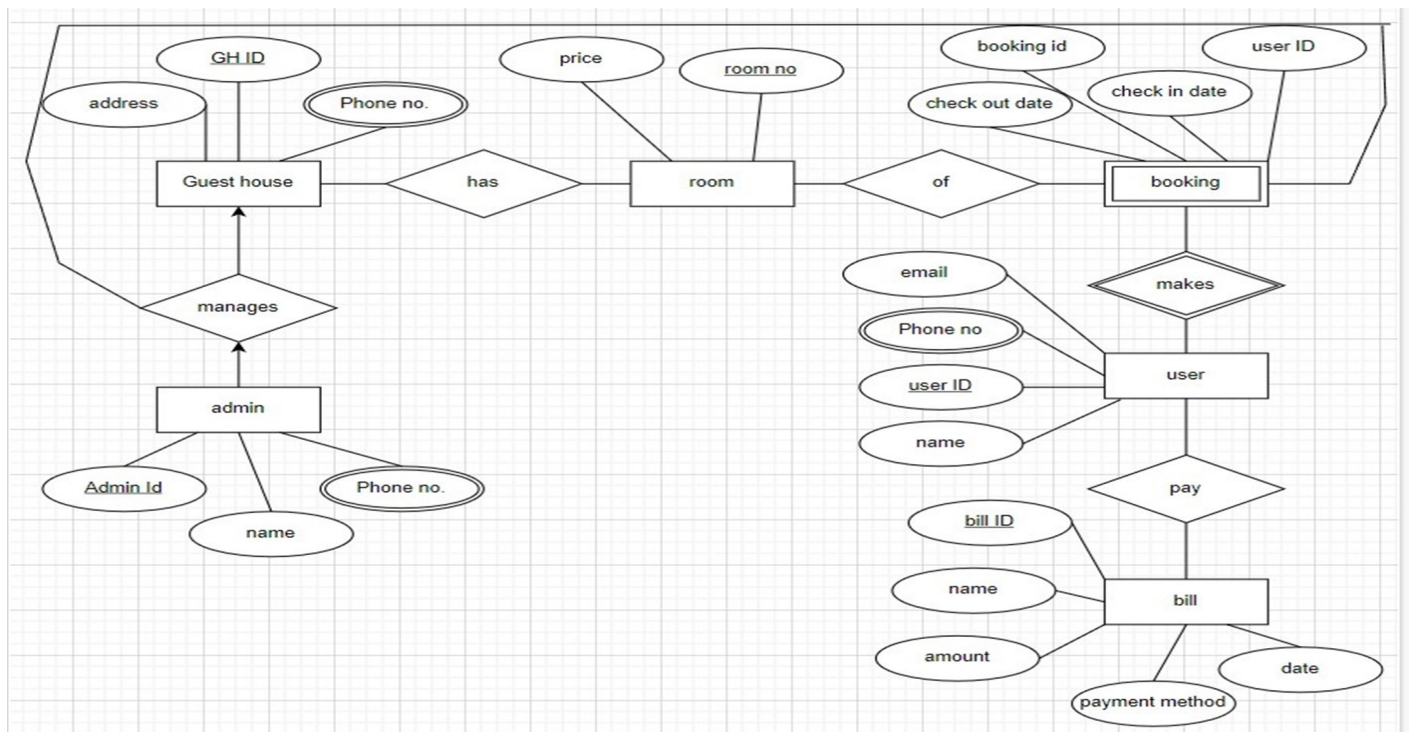
3.4 Communications Interfaces

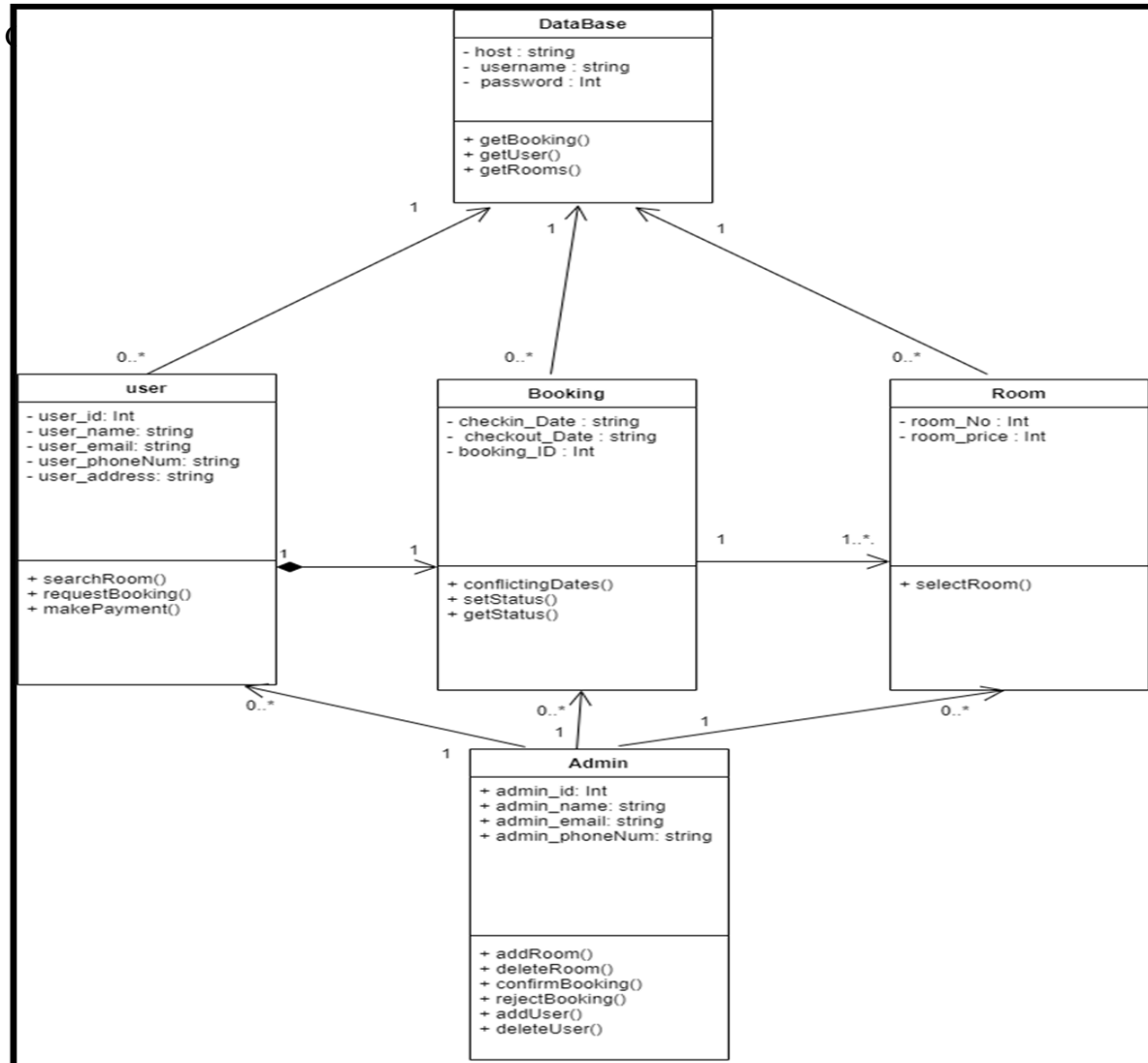
- 1) When the room will be reserved, an e-mail notification will be sent to the user. To achieve that functionality, it requires having a stable internet connection. Mostly a broadband connection with the client's computer will provide the efficient service.
- 2) The System shall be using HTTP/HTTPS for communication over Internet and for intranet communications, it shall use TCP/IP protocol.

4. System Features

Use Case Diagram:



Use-Case Activity Diagram**E-R Diagram**



4.1.1 Search for rooms

Name:	Search for rooms
Short description	A user gives check in and check out date for rooms
Precondition	User is logged into the system
Post condition	A room is reserved for the user
Error Situations	No free room available
System state in the event of error	User is added to the waiting list
Actors	User
Triggers	User requires a room

Standard process	1)User enters the check in and check out date 2)System finds a free room 3)The system books room for the user
Alternate Process	2')GHMS does not finds a free room 3')User modifies the check in check out dates 4')Else the user is added to the waiting list

4.1.2 Request room booking

Name:	Request room booking
Short description	On user request GHMS creates a new booking
Precondition	A user has searched for available rooms
Post condition	A new booking object is created
Error Situations	No free available
System state in the event of error	Booking status is updated to waiting
Actors	GHMS
Triggers	User requests room booking
Standard process	1)System finds a free room 2)The system books room for the user
Alternate Process	1')GHMS does not finds a free room 2')User modifies the check in check out dates 3')Else the user is added to the waiting list

4.1.3 Payment

Name:	Payment
Short description	User makes payment to complete his booking
Precondition	User has initiated booking
Post condition	User completes booking
Error Situations	Payment unsuccessful
System state in the event of error	Booking stands void
Actors	User
Triggers	User proceeds to payment portal
Standard process	1)User initiates booking 2)User proceeds to payment portal 3)User completes his payment
Alternate Process	3')payment unsuccessful 4')user tries after some time

4.1.4 Check booking status

Name:	Check booking status
Short description	User requests GHMS to provide current booking status

Precondition	User has made a booking
Post condition	GHMS provides booking status
Error Situations	Booking does not exist
System state in the event of error	User gets error message
Actors	User
Triggers	User requests for booking status
Standard process	1)User selects booking 2)User selects check status option 3)GHMS returns booking status
Alternate Process	3')GHMS prints error message

4.1.5 Cancel booking

Name:	Cancel booking
Short description	Person Initiates cancellation process
Precondition	Person had made successful payment
Post condition	Refund process is initiated
Error Situations	Booking did not exist
System state in the event of error	GHMS returns error message
Actors	Person
Triggers	Person requests cancellation
Standard process	1)Person selects booking 2)Person selects cancel option 3)Refund process initiated

4.1.6 Login

Name:	Login
Short description	Person uses his credentials to access GHMS
Precondition	Person should be a member of institute
Post condition	Person is granted access to GHMS
Error Situations	Invalid credentials used
System state in the event of error	Person is redirected to the login page
Actors	Person
Triggers	Person submits login form
Standard process	1)Person enters his credentials 2)Database verifies the credentials 3)GHMS provides access to the system
Alternate Process	2')Credentials not verified 3')Person is redirected to the login page

4.1.7 Confirm booking

Name:	Confirm booking
Short description	Admin confirms the booking from waiting list
Precondition	A booking should have been added to the waiting list
Post condition	Booking status confirmed
Error Situations	Admin does not approves the booking
System state in the event of error	Booking is cancelled and the refund is initiated
Actors	Admin
Triggers	Admin chooses a booking for confirmation
Standard process	<ol style="list-style-type: none"> 1) Admin requests the database for waiting list 2) Admin chooses a booking for confirmation 3) Admin confirms booking
Alternate Process	3') Admin cancels booking

4.1.8 Add room

Name:	Admin
Short description	Admin adds a room to the database
Precondition	Space should be available in the guest house
Post condition	Room is added
Error Situations	Space not available in the guest house to add a room
System state in the event of error	Room not added
Actors	Admin
Triggers	Admin wants to add a room
Standard process	<ol style="list-style-type: none"> 1)Space should be available in the guest house 2)Admin creates a new room 3)Admin adds room details 4)A new room is added to the database
Alternate Process	<ol style="list-style-type: none"> 1')Space not available in the guest house 2)Return error message

4.1.9 Delete room

Name:	Delete room
Short description	Admin deletes a room from the database
Precondition	Room temporarily unavailable
Post condition	Room deleted from the database
Error Situations	Room already deleted
System state in the event of error	Admin receives error message
Actors	Admin
Triggers	Admin wants to delete a room
Standard process	<ol style="list-style-type: none"> 1)Admin selects a room for deletion 2)Room deleted from the database
Alternate Process	<ol style="list-style-type: none"> 1')No room available for deletion 2')Return error message

4.1.10 Add user

Name:	Admin
Short description	Admin adds a user to the database
Precondition	User be a member of institute
Post condition	User is added
Error Situations	User not a member of institute
System state in the event of error	User not added
Actors	Admin
Triggers	Admin wants to add a user
Standard process	1) User be a member of institute 2)Admin creates a new user 3)Admin adds user details 4)A new user is added to the database
Alternate Process	1') User not a member of institute 2)Return error message

4.1.11 Delete user

Name:	Delete user
Short description	Admin deletes a user from the database
Precondition	User should be in the database
Post condition	User deleted from the database
Error Situations	User not found in the database
System state in the event of error	Admin receives error message
Actors	Admin
Triggers	Admin wants to delete a user
Standard process	1)Admin selects a user for deletion 2)User deleted from the database
Alternate Process	1')No user available for deletion 2)Return error message

5. Other Nonfunctional Requirements**5.1 Performance Requirements**

Some of the identified Performance requirements are:

1. The database shall be able to store records for a minimum of 10,000 applicants.
2. The software shall support concurrent users.
3. The waiting list for higher priority preferences shall be updated in Real time.
4. The Applicants data shall be easy to recover in case of a data loss.

5.2 Safety Requirements

There are several user levels in Guest House management system, Access to the various subsystems will be protected by a user log in screen that requires a user name and password. This gives different views and accessible functions of user levels through the system. Maintaining backups ensure the system database security. System can be restoring in any case of emergency.

5.3 Security Requirements

Managers and owner will be able to log in to the Guest House Management System. Managers Will have access to the Management subsystem as well as the Reservation/Booking subsystems. Access to the various subsystems will be protected by a user login screen that requires a user name and password.

5.4 Software Quality Attributes

Availability: - The system shall be available during normal hotel operating hours

Correctness: - extent to which program satisfies specifications, fulfills user's mission objectives

Efficiency: How much smaller number of resources and time are required to achieve a particular task through the system.

Flexibility: - Ability to add new features to the system and handle them conveniently.

Integrity: How the system would insecure the information in the system and how it avoids the data losses. Referential integrity in database tables and interfaces

Maintainability: How easy is to keep the system as it is and correct defects with making changes.

Portability: environment The Hotel Management System shall run in any Microsoft Windows

Reliability: - Specify the factors required to establish the required reliability of the software system at time of delivery. Mean time between failures and mean time to recovery

5.5 Business Rules

Guest House Management System will perform under two users which are Manager and end user. Some features like that are, taking backup, restoring of the system and handling financial details, income reports of the system. Manager of guest house is given access with the most frequently used features of the system. Deleting of any information in the system is only allowed for the manager of the guest house.

6. Other Requirements

When the system is completely developed and submitted to the client, few sessions will be required to make the users of the system understand about the functionality of it and some time to adapt to the system. After those sessions, it's required that a member from the development team should spend sometime in the system background for an agreed time period. That time period will be used in identifying new bugs that could not be reached in the earlier phases of the development process. User should have a valid e-mail account in order to receive reservation e-mail notifications.

Appendix A: Glossary

Check-out- settle one's bill before leaving.

Check-in - the process whereby a guest announces their arrival at the hotel.

Appendix B: Analysis Models

Attached Separately in Design Document

Appendix C: To Be Determined List

The number of concurrent users is TBD (to be decided).