Software Requirement Specification
For
Online Guest House Booking System (OGHBS)

Version 1.0

G.V.S.Neeharika
22CS10028
Vuriti Keerthana
22CS10081
Karanam Keerthi Chandrika
22CS30035

Table Of Contents

1. Introduction

1.1. Purpose

The purpose of an online guest house booking system is to streamline the process of booking accommodations for guests. Its benefits include:

1. Convenience: Guests can easily browse and book guest houses from anywhere with an internet connection, eliminating the need for phone calls or in-person visits.
2. Time-saving: Both guests and guest house owners save time with automated booking processes, reducing administrative tasks.
3. Increased visibility: Guest houses gain exposure to a wider audience through online platforms, potentially attracting more guests.
4. Efficient management: Owners can manage bookings, availability, and pricing in real-time, optimising occupancy rates and revenue.
5. Enhanced customer experience: Online systems often offer features like reviews, photos, and detailed descriptions, helping guests make informed decisions and providing transparency.
6. Financial benefits: Online payment options streamline transactions, reducing the risk of no-shows and ensuring secure payments.
7. Data-driven insights: Owners can analyse booking patterns and guest preferences to make informed decisions about pricing, marketing strategies, and service improvements.
8. Sustainability: Going digital reduces the need for paper-based processes, contributing to environmental sustainability.

1.2. Intended Audience and Reading Suggestions

The audience for a website offering online guest house booking in a college would primarily consist of:
1. College Staff and Faculty: Professors, administrators, and other staff members who might need accommodation for official visits, conferences, or events within the college campus.
2. Students' Parents and Relatives: Visitors who come to see their children studying at the college would also be potential users of the guest house booking service.

3. Alumni: Alumni returning for reunions, meetings, or other events organized by the college might require lodging facilities.
4. Guest Speakers and Workshop Conductors: Individuals invited to conduct workshops, seminars, or lectures at the college who need accommodation during their stay.
5. Visiting Scholars and Researchers: Academics from other institutions visiting the college for collaborative research, lectures, or seminars.
6. External Event Attendees: Participants or attendees of events, conferences, or seminars hosted by the college who require lodging during the event period.

1.3. Product Scope

The scope of having online guest house booking software can benefit both guest house owner and customers.Here are some potential areas of scope:
1) Real-time Availability: The software can provide real-time information on room availability,pricing and special offers.
2) Increased Revenue: By automating the booking process and reducing the
need for manual process,guest house owners can save time and reduce costs.This can result in increased revenue,as they focus on other areas of their business,such as improving customer service or upgrading amenities.
3) Data Analytics: The software can provide valuable insights into customer
behaviour,such as booking patterns,preferences and feedback.This can help
guest house owners to make data-driven decisions on pricing,marketing,and
service improvements.

1.4 References

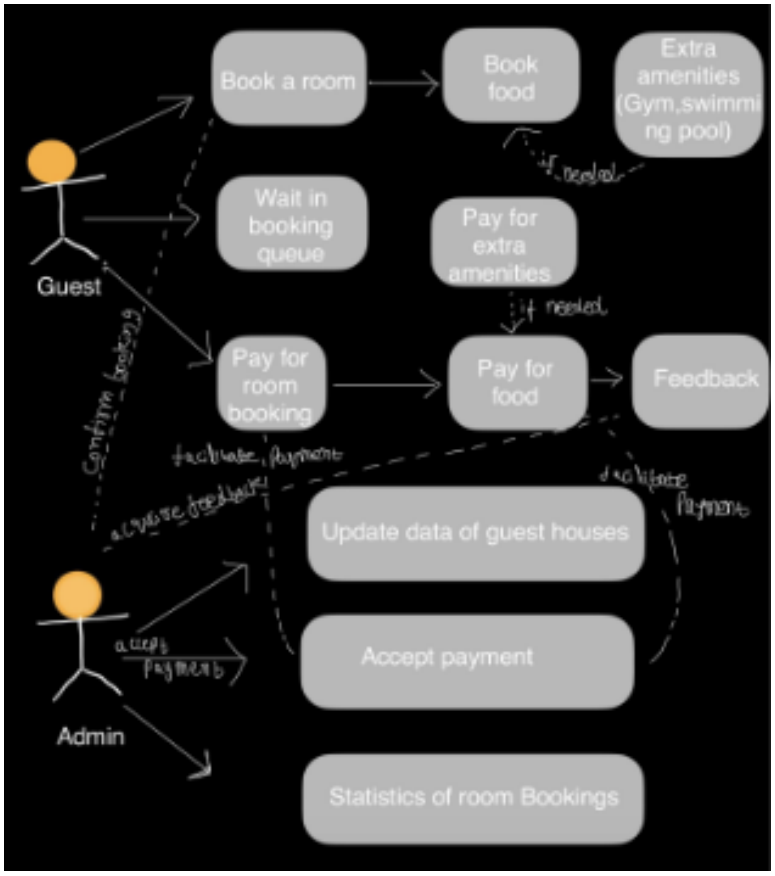
1.Database Management-https://youtu.be/cYWiDiIUxQc
2.Flask Tutorial-https://youtu.be/dam0GPOAvVI
3.Datetime Module- Python datetime module
4.Flask Documentation- https://flask.palletsprojects.com/en/2.2.x/

5.smtplib-How to Send Automated Email Messages in Python-GeeksforGeeks

2. Overall Description

2.1 Product Perspective

The online guest house booking system is a self-contained product with a user -friendly interface built primarily on the Flask python module which eases the booking of rooms and managing guest houses.
A use-case diagram for the software is shown below.



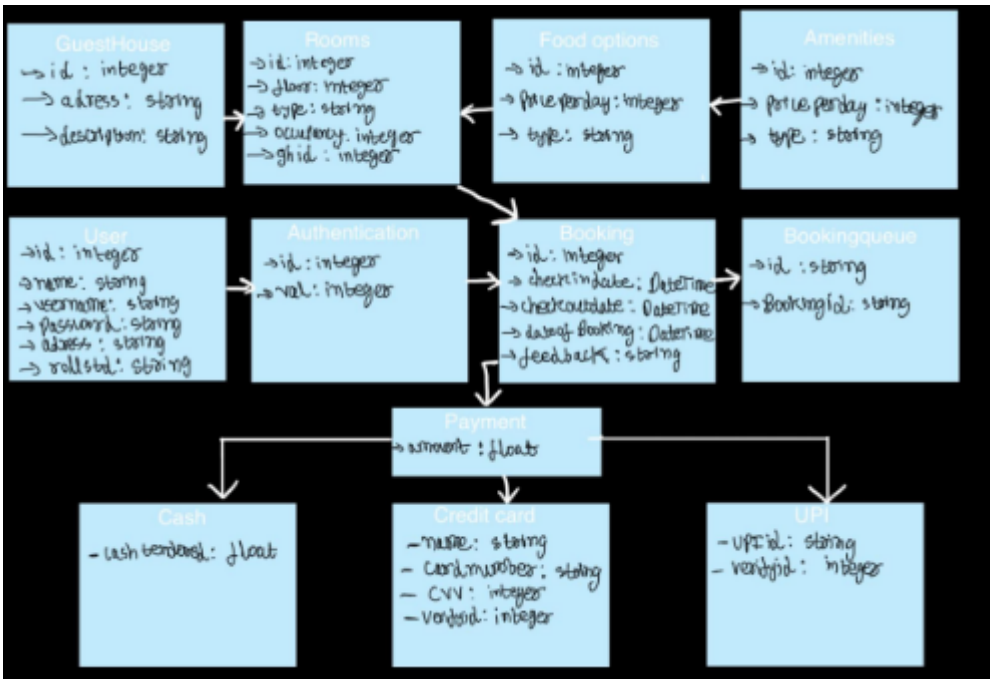
2.2 Product Functions

The major functionalities of the software are :

1. Checking the availability of rooms
2. Booking a room
3. Ordering food with luxurious amenities(if needed)
4. Queuing System for room booking(Online payment)

5. Cancellation

You can see an object class diagram below.



2.3 User classes and characteristics

Guesthouses:

- Each guest house a specific id and also has the address and brief description about the guest house

Rooms:

- Contains id of the room and guest house id
- Describes about the type and occupancy of the room
- Brief description about the room and the current status of the room
- Price of the room per day

Food Options:

- Contains id of the food menu
- Price of the selected food menu per day
- Cuisine of the Food menu

Amenities:

- Contains id of the amenity
- Price of the selected amenity per day
- Type of amenity

User:

- Contains id of the user
- Also stores the basic personal information of user
- Contains the username and password of the user

Authentication:

- Contains the id of the user
- Contains the validation value for verification

Booking:

- Contains the booking id
- Correlates with user id ,food id ,amenities id and room id
- Duration of the stay of the guest
- Confirmation of the booking
- Feedback of the guest

Booking Queue:

- Current position in the queue
- Booking id of the room booking

Cash:

- Amount to be paid for booking

Credit card:

- Name on the card
- Card number
- CVV of the card
- Verification id of the guest

UPI:

- UPI id of the guest
- Verification id of the guest

2.4 Operating Environment

Python Environment is required

This software runs smoothly on any personal computer with linux,Windows or MacOS with proper internet connections

2.5 Design and Implementation Constraints

The software runs on any device with windows/Linux/MacOS and operating system that supports python 3

The interface Language is English

2.6 User Documentation

A simple login/User manual guide is provided in the website
For any Further queries, user can mail to given service mail id

2.7 Assumptions and Dependencies

It is assumed that the python 3 environment is installed and setup in the System.

3.External Interface Requirements:

3.1 User Interfaces

- **Home Screen**
  - **Admin Login**
    - Login
    - Profile
    - Can change the prices of rooms,food,extra amenities
  - **Guest Login**
    - Sign up/Login
    - Profile
    - User Account Dashboard: Users can login and access their dashboard where they can view their booking history,manage their bookings.
    - Calendar view: Used to display availability of guest houses on specific dates.Users can select their desired dates and see which guest houses are available
    - Booking the room (along with the food),Extra amenities if Needed.
  - **Help**

3.2 Hardware Interfaces

- **Computer**
  - The primary hardware interface for an online booking system is computer.Guests can access the software via a website using their personal computers/mobiles with a stable internet connection.
  - The database will be handled on the server-side.All server side

functionalities will be executed on server-class computers

- **Internet**
    - Minimum component requirement is an internet connection

3.3 Software Interfaces

■ OS-Windows/Linux/MacOS
■ Python 3 Environment
- Libraries requirements include
    - Flask
    - SQLAlchemy
    - Datetime
    - pip
    - smtplib

3.4 Communications Interfaces

- **Website Interface**
    - The most common communication interface for online guest house booking software is a website.Website can be accessed from any device using internet connection.
- **Email Interface**
    - An email interface is used to communicate with guests for login/signup for confirmation of booking and verification of payment.

4. System Features

4.1 Login

Priority: High(9)

- **Use Case Name:** Login
- **Purpose:** This feature allows various users, including Guests and Admins, to log in to their respective accounts within the online guest house booking system.
- **Precondition:** Users must possess the correct username and password associated with their accounts.

- **Postcondition:** Upon successful authentication, users gain access to the online guest house booking system to perform further actions.
- **Failure Condition:** Login fails if the provided credentials are incorrect.
- **Users:** Guest,Admin

4.2 SignUp

Priority: High(9)

- **Use Case Name**: Signup
- **Purpose:** This feature enables users to create their accounts within the online guest house booking system.
- **Precondition:** Users must provide a valid email address, mobile number, and for Admins, a valid working ID.
- **Postcondition:** Upon successful registration, users are officially registered within the software.
- **Failure Condition:** Signup fails if the provided email address or mobile number is invalid. For Admins, signup also fails if the provided working ID is invalid.
- **Users:** Guest,Admin

4.3 Booking

Priority: High(9)

- **Use case Name:** Booking
- **Use case purpose:** Various users can use this functionality to book a room in their choice of guest house and time.
- **Use case precondition:** Users should have an account and choose a specific date and guest house.
- **Use case post condition:** Users confirm the booking after completion of payment.
- **Failure Condition:** Users are not having an account or haven’t chosen a date or a guest house.
- **Users:** Guest

4.4 Booking Queue

Priority: Medium(6)

- **Use case Name:** Booking Queue.
- **Use case purpose:** Various users can use this functionality to wait in the queue of a room after confirmation of booking.
- **Use case precondition:** Users should have Booking Confirmation
- **Use case post condition:** Users need to wait for further updates from the software for confirmation of room occupancy.
- **Failure Condition:** Users haven't made a booking yet.
- **Users:** Guest

4.5 Admin

Priority: Medium(6)

- **Use case Name:** Admin
- **Use case purpose:** Admin Users can use this functionality to login into their respective accounts and check the statistics of the bookings
- **Use case precondition:** Users should have the correct username and password.
- **Use case post condition:** Users enter the online guest house booking system to view the statistics or update any information of guest houses.
- **Failure Condition:** The credentials are wrong
- **Users:** Admin

4.6 Payment

Priority: Medium(6)

- **Use case Name:** payment
- **Use case purpose:** Guest Users can use this functionality to pay the payment through online mode.
- **Use case precondition:** Users should have initiated their booking.
- **Use case post condition:** Users will get the confirmation of room booking
- **Failure Condition:** Users haven't initiated the booking yet.
- **Users:** Guest

4.7 Cancel Booking

- **Priority:** Low(3)
- **Use case Name:** cancel booking
- **Use case purpose:** Guest Users can use this functionality to cancel the room booking.
- **Use case precondition:** Users should have their booking confirmation.
- **Use case post condition:** Users will get the confirmation of cancellation.
- **Failure Condition:** Users haven't done any room booking.
- **Users:** Guest

4.8 Feedback

- **Priority:** Low(3)
- **Use case Name:** Feedback
- **Use case purpose:** Guest Users can use this functionality to give their feedback.
- **Use case precondition:** Users should have their booking confirmation.
- **Use case post condition:** Users will get to review their feedback
- **Failure Condition:** Users haven't done any room booking.
- **Users:** Guest

5. Other Requirements

5.1 Performance Requirements

- The system which supports the design is sufficient
  Ex: Linux,Windows,MacOS
- **Performance:**
- It should perform according to the functional requirements.
- It should be available 24/7 without any downtime.
- It should be able to handle a large number of users and transactions.
- It should be secure and protect user data and not fail to complete transactions.
- **Internet:** A stable internet connection is sufficient.

5.2 Security Requirements

- All kinds of stakeholders can enter the system only when they have the correct login credentials as per the encrypted data stored in the database.

5.3 Safety Requirements

- The software does no harm to the device. The system used to implement also must not contain any virus.
- The users must remember their usernames and passwords since there is no facility for recovering forgotten passwords and usernames.

5.4 Software Quality Attributes

- **Correctness and Efficiency:** The software should perform all the required functions accurately and efficiently to fulfil the user objectives.
- **Usability:** The software should provide user guide for every level of Users and also should be easy to use and navigate.
- **Reliability:** The software should be reliable, that is it should function without any errors or system failures.It should be available and accessible to guests at all times.
- **Integrity:** The software should focus on securing the guests information and avoid data losses as much as possible.
- **Compatibility:** The software should be compatible with different devices and operating systems,allowing guests to use it on their preferred platform.
- **Testability:** The software should be able to be tested to confirm the performance and all kinds of user specifications.
- **Maintainability:** The software should be easy to maintain and update.

5.5 Business Rules

- The software will be free of cost for all the kinds of stakeholders.
- Only the admin can add the rooms/food/extra amenities.

- Only the admin can change the cost of rooms/food/extra amenities.
- Users must enter the email and password to login/signup and to access the website.
- Users can also take extra amenities if they are interested by paying extra money.
- Users can cancel their booking at any time before the date of checkindate.

Appendix

Glossary:

- **Guest:** a type of user and is the primary user who uses the software for booking a room in a guest house.
- **Admin:** a type of user and is the only user who can manage and observe the flow of bookings.
- **Amenities:** Extra luxury for guests such as gym,swimming pool.
- **Use case diagram:** The diagram which depicts the interrelation between different users of the software.
- **Booking:** This word describes that a user is booking a room.
- **Operating Environment:** The environment in which the functionalities of the software work.
- **Authentication:** Verification of valid users in the software.