IT313-Software Engineering

Software Requirements Specifications

Guest house Booking System

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1. Introduction

1.1. Purpose Of the Document

This document aims to offer an in-depth overview of the Software Requirements Specification (SRS) for the Guesthouse Booking System. The SRS is intended to outline both the functional and non-functional prerequisites of the system, explain its scope, features, and performance criteria.

A guesthouse booking system is a software application that enables guesthouses and small hotels to manage their reservations, guest information, and room availability. Our guesthouse booking system is integrated with the management system where we can manage the inventory, view and update the staff details, grant/reject staff leave requests, update staff's salary and schedule and even contact suppliers for inventories.

In summary, this Software Requirements Specification (SRS) serves as a blueprint and guide for software developers, designers, and testers, outlining precisely what needs to be implemented and how the system should perform. Guiding development and ensuring alignment with user and admin functional and non-functional requirements, use cases and user stories. This document signifies our commitment to delivering a high-quality, purpose-fit solution that will elevate the efficiency and satisfaction levels of guesthouse operations.

1.2. Introduction to the Guest house Booking System

1.2.1. Problems With Manual Systems

- **Prone to Errors**: Manual systems are highly susceptible to human errors, including double bookings, incorrect data entry, or miscommunication, leading to guest dissatisfaction and operational inefficiencies.
- **Time-Consuming**: Manually managing bookings, updating availability, and handling guest information is time-consuming.
- **Ineffective Reporting and Analysis**: Generating reports or analyzing booking trends manually is cumbersome. Lack of real-time data and insights makes it difficult for guesthouses to make informed decisions for marketing strategies, pricing, or resource allocation.
- **Reduced Guest Experience**: Manual systems may lead to slower check-in/check-out processes, longer waiting times, or inaccuracies in guest information, impacting the overall guest experience negatively.
- **Limited Scalability**: As the guesthouse grows, manual systems struggle to handle increased bookings and operations. Managing a larger volume of guests becomes challenging without an automated system in place.
- **Inventory Management**:Manual recording of inventory levels is prone to errors such as miscounts, misplaced items, or incorrect entries, leading to discrepancies in stock levels.
- **Scheduling Challenges**: Creating staff schedules manually can be complex and time-consuming, leading to inefficiencies, conflicts, or understaffing/overstaffing situations.

1.2.2. Our Aim

Our primary purpose is to make a Guesthouse Booking and Management System which will revolutionize and streamline the operational aspects of the guest house while enhancing the overall guest experience.

We want to enable the guests to make hassle-free reservations, check availability, and manage bookings seamlessly through an intuitive and user-friendly platform.

We aim to optimize the management of guesthouses, ensuring a seamless experience for owners/managers by facilitating booking procedures, staff scheduling, inventory control, and timely access to statistics.

1.3. Stakeholders

- **Guests:** The primary stakeholders who interact with the system to make reservations, manage bookings, and experience the services offered by the guesthouse.
- **Guesthouse Owners/Managers:** Those responsible for overseeing the guesthouse's operations, including managing reservations, ensuring quality service delivery, and utilizing the system for effective management.
- **Front Desk/Reception Staff:** Staff members responsible for utilizing the system to manage bookings, handle check-ins and check-outs, and ensure a smooth guest experience.
- **Housekeeping and Maintenance Staff:** Involved in managing room status, coordinating cleaning schedules, and using the system for maintenance requests and inventory tracking.

- **IT and System Administrators:** Responsible for maintaining and ensuring the smooth functioning of the booking and management system, including system updates, security, and troubleshooting.

2. Specific Requirements

2.1. Functional Requirements

- User registration and login functionalities for guests, staff, and administrators. Differentiated access levels for various user roles (e.g. receptionists, managers,owners) ensuring appropriate access rights (hierarchical login system).
- Acquiring successful bookings from online booking websites.
- Implementing databases for room availability and the current guests staying in the guest house.
- The system should facilitate on spot booking for customers who are booking offline in real time.
- Inventory management so that the guest house knows which items are in shortage and need to be procured.
- Staff scheduling and task management to reduce confusion between staff and increase efficiency.
- Generation of reports on occupancy rates, revenue, guest preferences, and booking trends. Analytics tools for decision-making related to pricing, marketing strategies, and resource allocation.
- Acquiring customer feedback so that the guest house can work on improving its quality of service and increase the guest satisfaction.

2.2. Non Functional Requirements

➔ **Performance :**

- ◆ Response Time : The system should respond to user interactions within a specified time limit.
- ◆ Scalability : Ability to handle increased load during peak booking periods without significant performance degradation.
- ◆ Reliability : Ensure system uptime with minimal downtime for maintenance or upgrades

➔ **Security :**

- ◆ Access Control : Implement secure user authentication and authorization mechanisms to prevent unauthorized access.
- ◆ Backup and Recovery : Regular data backups and a robust disaster recovery plan to ensure data integrity and availability.

➔ **Usability :**

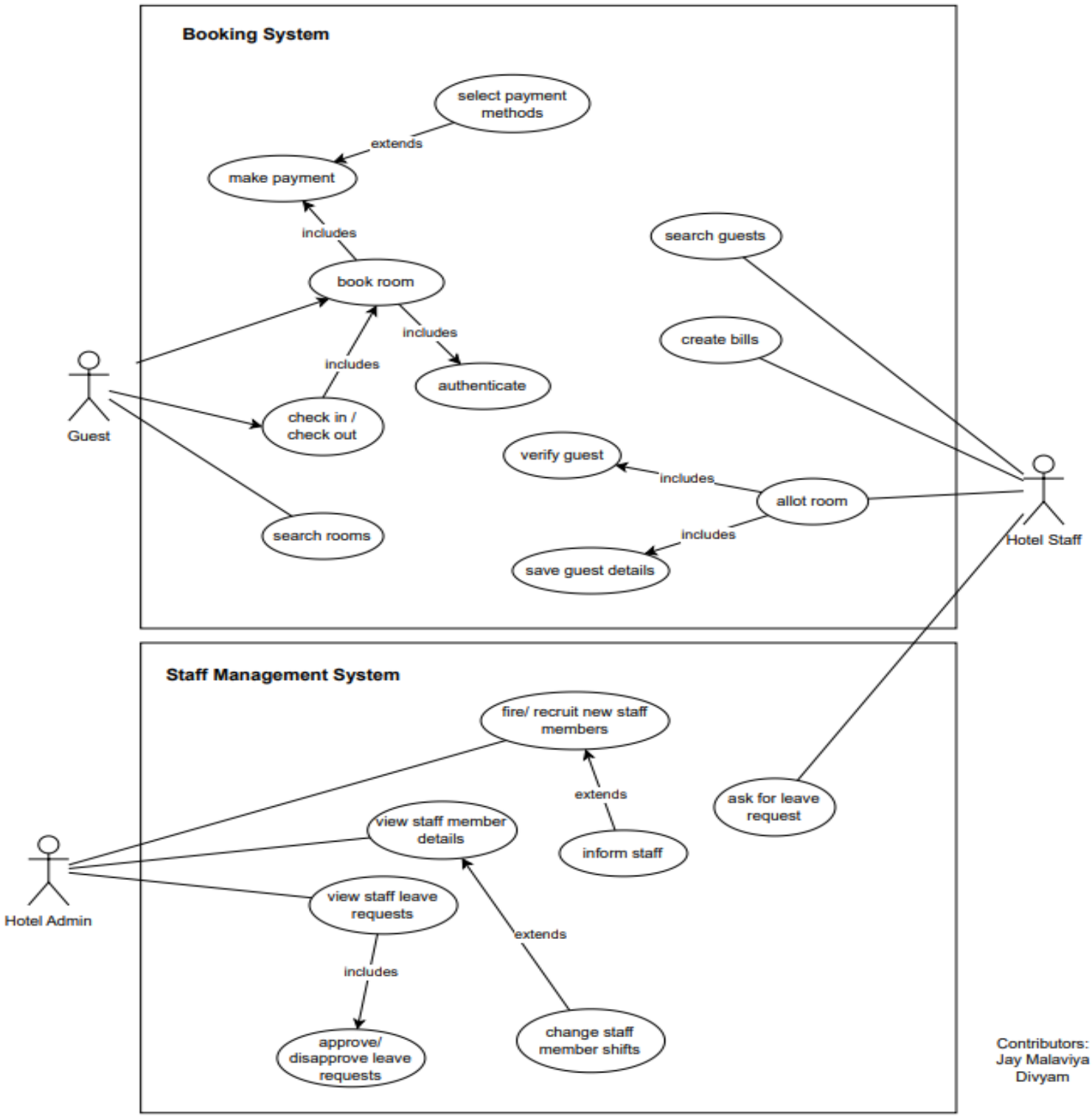
- ◆ User Interface: Provide an intuitive and user-friendly interface for users to navigate and perform tasks easily.

➔ **Scalability :** The system should scale efficiently to accommodate increasing guesthouse operations or user base.

➔ **Localization :** Support multiple languages and regional requirements to cater to diverse user needs.

➔ **Data Privacy :** Safeguard guest data, ensuring it is used only for intended purposes and not shared without consent.

2.3. Use Case Diagram



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2.4. User Stories

User Story 1 :

Front of the card

As a receptionist, I want to access the information of online registered customers so that I can verify their confirmation status and view their details upon successful registration.

Back of the card

Acceptance Criteria:

- Access to a database or system displaying registered customer data.
- Successful validation confirms the customer's registration.
- Information includes customer details and confirmation status.

User Story 2 :

Front of the card

As a receptionist,
I want to access check-in & check-out details of guests in the guest house So that I can manage room vacancy information and edit room availability accordingly.

Back of the card

Acceptance Criteria:

- Access to a section displaying current and past guest check-in & check-out details.

- Real-time updates reflecting room occupancy status.
- Details include room numbers, guest names, check-in dates, and expected/actual check-out dates.
- Ability to update room availability promptly based on check-in/check-out status.
- Secure storage of guest information adhering to privacy regulations.

User Story 3 :

Front of the card

As a receptionist,
I want to access customer feedback
So that I can respond appropriately.

Back of the card

Acceptance Criteria:

- Access to a section displaying customer feedback.
- Ability to view feedback details, including date, content, and customer information (if provided).
- Option to filter or sort feedback based on date, rating, or topic.
- Ability to respond directly to individual feedback messages.

User Story 4 :

Front of the card

As a receptionist,

I want to access the guest house inventory
So that I can manage items based on their availability.

Back of the card

Acceptance Criteria:

- Access to an inventory section displaying all guest house items.
- Clear indication of available stock quantities for each item.
- Real-time updates reflecting the current availability status.
- Ability to track low stock or out-of-stock items.
- Option to manage inventory by adding, removing, or updating items.

User Story 5 :

Front of the card

As a receptionist,
I want to perform on-the-spot registration for customers arriving at the guest house directly.

Back of the card

Acceptance Criteria:

- Access to a registration interface allowing entry of customer details.
- Capture essential customer information: name, contact details, identification (if required), and duration of stay.
- Ability to assign rooms or accommodations promptly.

User Story 6 :

Front of the card

As an Admin,
I want a hierarchical login portal for Admin, Staff, and Customers
So that user privacy and access control can be maintained effectively.

Back of the card

Acceptance Criteria:

- Three distinct login roles: Admin, Staff, and Receptionist with unique access privileges.
- Secure login authentication for each role using encrypted credentials.
- Role-Based Access Control ensuring Admin, Receptionist and Staff access levels.

User Story 7 :

Front of the card

As an Admin,
I want to view the staff schedule and identify current on-duty staff members.

Back of the card

Acceptance Criteria:

- Access to a schedule/calendar displaying the work shifts and schedules of all staff members.
- Clear indication or highlight of the current date and ongoing shifts.
- Display of staff names, assigned shifts, and designated work hours.
- Ability to view past and future schedules for planning purposes.
- Real-time updates showing the staff currently on duty.

User Story 8 :

Front of the card

As an Admin,
I want a user-friendly interface to view the guest house's performance

Back of the card

Acceptance Criteria:

- Access to a dashboard or summary page displaying performance of the guest house.
- Performance includes occupancy rates, revenue, average daily bookings, and other relevant business metrics.
- Graphical representation (charts, graphs) for easy visualization of performance trends.
- Ability to filter data by specific time periods (daily, weekly, monthly, yearly).

- Detailed breakdown of performance metrics for deeper analysis if needed.

User Story 9 :

Front of the card

As a Customer,
I should be able to book my hotel visit online and offline.

Back of the card

Acceptance Criteria:

- Accessible website/app for room selection and secure online payment.
- Option to book rooms directly through the hotel's receptionist.
- Ensure room availability aligns between online and offline bookings.
- Instant confirmation for bookings, online or offline.
- Simple online procedure for modifying or canceling reservations.
- Receptionist capable of handling changes for offline bookings.

User Story 10 :

Front of the card

As a Customer,

I should be able to make payments in both online and offline modes for hotel bookings.

Back of the card

Acceptance Criteria:

- Secure payment gateway for online bookings ensuring safe transactions.
- Clear display of payment methods and use of reputable payment processors.
- Option for customers to settle payments in cash, card, or other accepted methods upon check-in/out through the receptionist.
- Utilization of encrypted and secure transaction portals for online payments.
- Confirmation of successful payment with transaction details sent to the customer.
- Transparent display of payment procedures for both online and offline modes.
- Receipt issuance upon successful payment, either digitally or physically.

User Story 11 :

Front of the card

As a Customer,
I should receive a confirmation prompt for my final booking.

Back of the card

Acceptance Criteria:

- Immediate confirmation prompt displayed upon finalizing the booking process.
- Clear acknowledgment of successful booking with details (dates, room type, etc.).
- Information includes booking reference/ID, check-in/out dates, room type, and any additional services booked.
- Confirmation prompt delivered through the booking platform (website/app) or via email/SMS.

User Story 12 :

Front of the card

As a Customer,
I want to rate and review my stay at the guesthouse.

Back of the card

Acceptance Criteria:

- Ability for customers to provide a rating (e.g., stars) for various aspects of their stay (e.g., service, cleanliness, facilities).
- Option to write and submit a detailed review sharing their experience during the stay.
- Display of ratings and reviews on the guesthouse's website or booking platform for future customers to access.
- Moderation of reviews to ensure they adhere to guidelines and are genuine.
- Encouragement for customers to leave feedback through follow-up emails or messages post-stay.

3. System Features

The final list of features to be implemented :

1. The system should be able to take bookings from various online channels. These online channels should show the booking status of all the rooms accurately.
2. The system should accurately display the rooms which are available and the rooms which are booked/reserved to the authorized personnel of the guest house.
3. The Customers should be able to book rooms from the various booking channels available. He/she should also be able to book the rooms offline.
4. Implementation of a database for all the inventory of the guest house for proper management.
5. The system should have staff scheduling/management features so that the admin/owner can keep track of the staff.
6. The system should generate monthly statistics related to the revenue, peak booking seasons, etc which will help the guest house manage its resources efficiently. It will show the performance of the guest house.
7. The customer should be able to make payments in online mode. The payment method used should be safe and secure.
8. The customer should be able to give reviews to the guesthouse and the guest house should be able to view all the reviews given to them. This will help the guesthouse improve their services and it will also help other customers to get an idea about their services.
9. System on the guest house side should have hierarchical login. The staff cannot access the features exclusive to the

manager/receptionist and the receptionist cannot access the features exclusive to the owner/admin.

4. Domain Analysis Model

In the domain analysis model of our Guesthouse Booking and Management System, we define control, boundary, and entity objects to understand the system's structure and interactions.

Control Objects:

Control objects encapsulate the logic and decision-making processes within the system. In our context, control objects could include components responsible for handling booking validations, managing reservation workflows, and overseeing payment processing. For instance, a BookingController might oversee the validation and processing of guest reservations, ensuring a seamless and error-free booking experience.

Boundary Objects:

Boundary objects represent the interface between the system and its external entities, facilitating information exchange. In our system, boundary objects might include interfaces for Guests, Staff/Receptionists, and Hotel Admin. Each interface would cater to the specific needs of these users, providing a user-friendly experience for tasks such as booking, check-in/check-out, and administrative management.

Entity Objects:

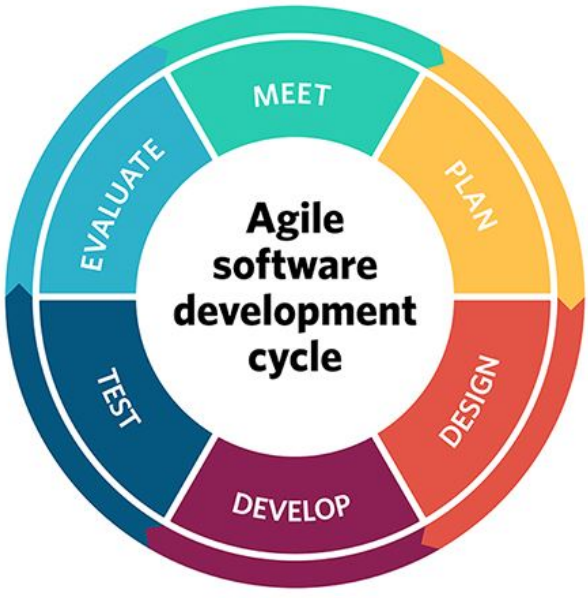
Entity objects encapsulate the data and business rules of the system. In the context of our Guesthouse Booking and Management System, entity objects could include Guest profiles, Reservation details, and Room information. These objects store and manage the persistent data crucial

for the system's functionality, ensuring accurate and efficient information retrieval and storage.

5. Development Model

- The Guesthouse Booking and Management System adopts the Agile development model, a strategic choice driven by its characteristics that align seamlessly with the project's goals.
- Agile methodology is chosen to foster continuous collaboration between the development team and stakeholders, ensuring that the system evolves in harmony with the dynamic needs of guesthouses and users.
- The iterative development approach of Agile allows for the rapid delivery of a minimum viable product, addressing immediate needs while enabling ongoing enhancements based on real-time feedback.
- This aligns with the project's objectives of providing quick and tangible value to end-users while maintaining the flexibility to refine and expand features as requirements evolve.

Overall, the Agile software development model is a good choice for the Guesthouse Booking System because it provides a flexible, collaborative, time and cost efficient, iterative approach to software development that will help to ensure the successful delivery of the system.



6. Assumptions

1. The guest house should have constant access to the internet services because the booking system relies on a stable internet connection to facilitate real-time updates, online reservations, and communication between the system and users.
2. We have used a dummy payment method. We are assuming that the payment method is secure.
3. The staff is proficient in using personal computers as the system requires users to be familiar and competent with computer usage.
4. The guest/user should be familiar with using the internet so that he can use online channels to book rooms.
5. Management system is designed to be used only on desktop devices like laptops and PCs.

7. References

1.StackOverflow-https://stackoverflow.com/

2.GeeksForGeeks-https://www.geeksforgeeks.org/

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