SOFTWARE REQUIREMENTS SPECIFICATION

for

Maze - Hotel Management Website

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1 Introduction

Welcome to Maze, your ultimate destination for seamless hotel management. Dedicated to simplifying your stay, our comprehensive services cater to your needs, whether for business or leisure. From booking accommodation to accessing amenities, Maze ensures comfort and convenience.

1.1 Purpose

The purpose of Maze is to revolutionize the hotel management experience by providing a user-friendly and comprehensive website that caters to the diverse needs of our guests. Our primary goal is to make staying at hotels easier and more enjoyable by offering a range of services and features accessible through our platform. Whether it's booking accommodations, ordering room service, accessing hotel amenities, or providing feedback, Maze aims to streamline every aspect of the guest experience

1.2 User's Perspective

1.2.1 Customer Perspective:

User-Friendly Interface:

- **Ensure** a simple and intuitive design for easy navigation.
- **Clearly display** information on available facilities, services, and amenities.

Efficient Booking System:

- **Implement** a streamlined booking process with real-time availability updates.
- **Provide** a confirmation system with booking details.

Service Request Management:

- **Develop** a platform for customers to request various services, such as room service and housekeeping.
- **Notifications** for status updates on service requests.

Feedback Mechanism:

- **Create** a user-friendly feedback form.
- **Encourage** users to provide reviews and suggestions.

1.2.2 Staff Perspective:

Real-Time Task Management:

- **Implement** a dashboard for staff to view and manage service requests in real-time.
- **Prioritize** tasks based on customer needs.

Guest Information Access:

- **Provide** staff with access to updated guest information, including room occupancy and preferences.
- **Facilitate** efficient communication between staff members.

1.2.3 Administrator Perspective:

Comprehensive Management Dashboard:

- **Develop** a centralized dashboard for administrators to monitor and oversee all hotel activities.
- **Include** key metrics, such as room occupancy, service completion rates, and guest satisfaction.

Performance Monitoring:

- **Implement** tools for monitoring staff performance.
- **Generate** reports on task completion and customer satisfaction.

Analytics and Decision-Making:

- **Include** analytics tools to derive insights from customer data.
- **Enable** data-driven decision-making for improvements and optimizations.

Administrative Tasks Automation:

- **Develop** features for staff scheduling and inventory management.
- **Automation** of routine administrative tasks to improve efficiency.

1.2.4 General Considerations:

Security:

- **Implement** robust security measures to protect user data and financial transactions.

Scalability:

- **Design** the system to handle potential growth in the number of users and data.

Mobile Responsiveness:

- **Ensure** that the website is accessible and user-friendly on various devices, including mobile phones.

1.3 Project Scope

The scope of your Maze project seems broad and comprehensive, covering various aspects of hotel management to enhance the guest experience. Here are some key components that you might consider within the scope of your project:

1. **Accommodation Booking:**

• - User registration and authentication.
•- Search and filter functionality for hotel accommodations based on criteria like location, price, amenities, etc.
•- Booking and reservation management.

2. **Room Service Integration:**

•- Online menu for room service.
•- Ordering and payment functionalities.
•- Integration with hotel staff for efficient service delivery.

3. **Amenity Access:**

•- Providing information about hotel amenities.
•- Booking or accessing amenities such as spa, gym, pool, etc.

4. **Feedback and Review System:**

• - Allowing guests to provide feedback and reviews.
• - Implementing a rating system for both hotels and specific services.

5. **Administrative Dashboard:**

•- Back-end system for hotel administrators to manage bookings, services, and user feedback.

6. **Responsive Design:**
• - Ensuring the website is accessible and user-friendly across various devices (desktops, tablets, and mobile devices).

7. **Security Measures:**
• - Implementing secure user authentication and payment processing.

8. **Data Analytics:**
• - Collecting and analyzing user data to improve services and user experience.

9. **Scalability and Future Enhancements:**
•- Designing the system with scalability in mind for potential future features or expansion.

2 Overall Description

2.1 Product Perspective

The Maze Hotel Management Website stands as a revolutionary solution in the hospitality industry, bridging the gap between traditional hotel management methods and modern guest expectations. It serves as an intuitive platform that seamlessly integrates every aspect of the guest experience, from booking accommodations to accessing amenities and providing feedback. By prioritizing user convenience and operational efficiency, Maze elevates the standard of hospitality services. With its mobile accessibility and user-friendly interface, it caters to the evolving needs of travelers, promising a hassle-free and delightful stay experience.

2.2 User Classes and Characteristics

"Maze" has basically 3 types of users.

- Customer
- Employees
  - Manager
  - Staff
- Administrator

Employee has 2 types - Manager in a hotel system includes strategic planning, staff management, guest relations, financial management, and ensure smooth operations, high service standards, guest satisfaction, and profitability. Othe staff functions to fulfil all the requirements of the guests and to provide timely servies.
Customers/ Guests make use of all the facilities available and provide feedback based on services offered.

2.3 Principal Actors

The four principal actors in **"MAZE"** are **customers, manager, staff,** and **administration.**

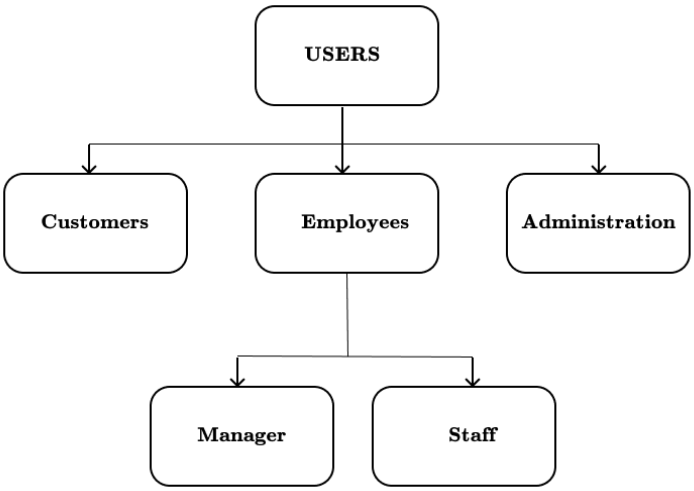

Figure 2.1: type of users

2.4 Product Functions

"Maze" stores data for both staff and customers, offering a comprehensive database. It provides customers with a list of available services and indicates which staff members are currently accessible. Additionally, it furnishes staff with service details to ensure efficient operations.

USE CASE:

Administration:

- Update and manage database: Admin updates the details in database and has its complete access
- Add or modify employee: Updates or add details of new employee
- Add or update room charge: Keeps changing the room charge as per the current existing prices
- Management of resources: Administration manages all the resources and make efficient use of these to provide best services
- Maintains salary records: Admin keeps the salary records of all employees, including the manager and keeps updating the data.
- Maintenance of hotel: This helps to perform maintenance tasks on hotel to keep its infrastructure up to date.

Manager:

- Update and delete from database: Manager updates the details of new customers
- Checking availability of staff: Ensures the availability of staff for a particular demanded service
- Assignment of staff: Assigns staff for a particular service
- Attendance of staff: keeps the leave record of the employees
- maintaining the bill: keeps record of all the services availed by a customer and accordingly makes the bill

Staff:

- Carry luggage: Staff helps guests with their luggage
- Attending to a group of customers: Ensures to provide required services to multiple customers
- Room service: provides various services.

Customer:

- Login and logout: Allows user to login to the site
- Registration: Allows user to register on site and further verify their details. Help new user to create account.
- Online booking: Book room online and pay
- Cancel Booking: Get the money refund in case of cancellation
- Check in and check out: Allows customer to check in to their room and check out while leaving.
- Booking of services: Allows customer to avail multiple services and make a booking for the same. These include spa, and gym services.
- Providing feedback: Allows customer to provide feedback so as to improve customer experience.

Before accessing the maine website, users have to be registered.
All users have - login_parameter, first_name, last_name, phone_number and other necessary details.
New customers have the option to register an account and utilize the website's features.
Booking of various services and on-click availability of room service are some best features making this website better than traditional ones.

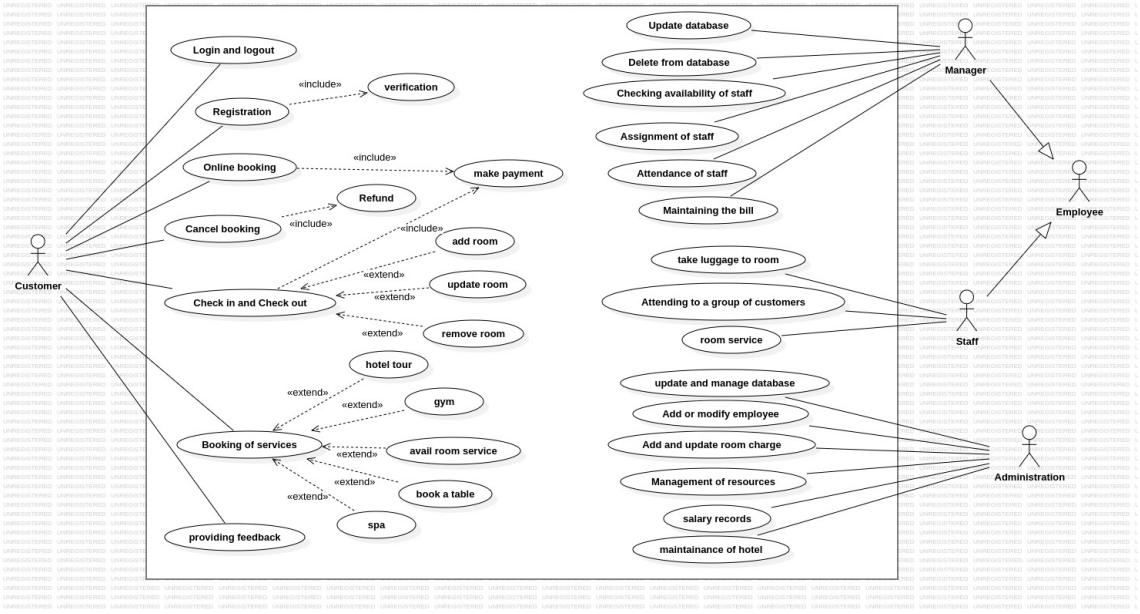

Figure 2.2: Data Flow Diagram

2.5 Operating Environment

The website will be operate in any Operating Environment - Mac, Windows, Linux etc.

2.6 Design

Guests activities have 3 steps -

- Create account
- Login
- Book services

New users first create account, get the registration and verification done. After the process is complete, they can now avail multiple services just on click of button.
They can book various services like gym, and spa.
Additionally, customers can provide feedback to indicate their satisfaction with the services received.

Employee activities have 2 steps -

- Login
- Provide services demanded

The manager oversees all staff members and facilitates task coordination, while other employees deliver diverse services aimed at ensuring customer satisfaction.
Teacher creates results, view students and create notice.

Administration has the ultimate access to everything. It keeps the entire database up to date.

3 System Features

3.1 Project Description:

The project, named **"Maze,"** aims to revolutionize the hotel management experience by providing a user-friendly and comprehensive website. The primary goal is to make staying at hotels easier and more enjoyable for guests. The platform will offer a range of services and features accessible through the website, including accommodation booking, room service ordering, access to hotel amenities, and a feedback system.

3.2 Project Priorities:

3.2.1 High Priority:

Accommodation Booking:

Description: Core functionality allowing users to search, filter, and book hotel accommodations in real-time.

Room Service Integration:

Description: Seamless integration for users to order room service with real-time updates.

Administrative Dashboard:

Description: Back-end system for hotel administrators to efficiently manage bookings, services, and staff.

Security Measures:

Description: Robust security to protect user data and financial transactions.

Responsive Design:

Description: Ensuring the website is accessible and user-friendly across various devices.

3.2.2 Medium Priority:

Amenity Access:

Description: Providing information about hotel amenities and enabling users to book or access facilities.

User Profiles and Preferences:

Description: Personalized user profiles and storing preferences for future bookings.

Feedback and Review System:

Description: User-friendly feedback system for guests to provide reviews and suggestions.

Data Analytics:

Description: Collecting and analyzing user data to improve services and user experience.

Scalability and Future Enhancements:

Description: Designing the system to handle potential growth and future feature additions.

3.2.3 High Priority for Specific Perspectives:

Staff Perspective:

Real-Time Task Management: Ensuring staff can efficiently manage service requests in real-time.

Administrator Perspective:

Comprehensive Management Dashboard: Developing a centralized dashboard for administrators.

3.3 General Considerations:

Mobile Responsiveness:

Ensuring the website is accessible and user-friendly on various devices, including mobile phones.

3.4 Functional Requirements

3.4.1 Frontend (React.js):

- **Description:** Develop a responsive and interactive user interface using React.js for the Maze website.

3.4.2 Design (Figma):

- **Description:** Create visually appealing and intuitive design elements using Figma for a seamless user experience.

3.4.3 Backend (Node.js and Express.js):

- **Description:** Implement a robust and scalable backend infrastructure using Node.js and Express.js to handle server-side logic.

3.4.4 Database (MongoDB):

- **Description:** Utilize MongoDB as the database to efficiently store and manage data for the Maze website.

3.4.5 User-Friendly Experience:

- **Description:** Ensure a user-friendly experience by implementing features such as accommodation booking, room service ordering, amenity access, and a feedback system.

3.4.6 Comprehensive Hotel Management:

- **Description:** Build functionalities that cover the entire hotel management process, including backend systems for efficient task management and data analytics.

3.4.7 MERN Stack Integration:

- **Description:** Integrate the MERN stack components seamlessly to create a cohesive and efficient web application for the Maze project.

4 Other Nonfunctional Requirements

4.1 Performance Requirements

- Maze utilizes **Node.js**, **Express.js**, **React.js**, and **MongoDB** for efficient performance.
- **Node.js** and **Express.js** facilitate robust backend development, ensuring seamless communication with the database.
- **React.js** enhances user experience through dynamic and interactive frontend design.
- **MongoDB**, a NoSQL database, offers scalability and flexibility for managing hotel-related data effectively.
- This technology stack enables real-time communication, intuitive interfaces, and dynamic data management, addressing the complexities of hotel operations with precision.

4.2 Security Requirements

- **Secure Authentication:** Implement robust authentication mechanisms to ensure only authorized users access the system.
- **Data Encryption:** Encrypt sensitive data, such as customer information and payment details, to prevent unauthorized access.
- **Role-Based Access Control:** Implement role-based access control to restrict users' access to specific functionalities based on their roles.
- **Regular Security Audits:** Conduct regular security audits to identify and address potential vulnerabilities and threats.