**Hotel Management System - Software Requirements Specification (SRS)**

**1. Introduction**

**1.1 Purpose**

This document outlines the software requirements for a comprehensive Hotel Management System built using Laravel and MySQL. The system aims to provide hotel businesses with a complete solution for managing operations, reservations, pricing, events, and more, with emphasis on customization, multi-property support, security, and enhanced guest experiences.

**1.2 Scope**

The Hotel Management System will encompass:

- User and role management with granular permissions

- Multi-property management capabilities

- Room and rate management with dynamic pricing

- Booking and reservation management with multiple sources

- Guest management with profiles and preferences

- Payment processing with multiple gateways

- Loyalty programs and points system

- Housekeeping and maintenance task management

- Point of Sale (POS) for restaurants, bars, and other outlets

- Inventory management for hotel supplies

- Event and conference management

- SPA and wellness service management

- Financial reporting and analytics

- Channel management for OTAs

- Multi-language and multi-currency support

- Asset management with depreciation

- Communication and notification system

**1.3 Definitions, Acronyms, and Abbreviations**

- SRS: Software Requirements Specification

- PMS: Property Management System

- POS: Point of Sale

- OTA: Online Travel Agency

- API: Application Programming Interface

- UI: User Interface

- RBAC: Role-Based Access Control

- JSON: JavaScript Object Notation

**2. Overall Description**

**2.1 Product Perspective**

This system will be a web-based application built on the Laravel framework with a MySQL database, designed as a comprehensive solution for hotel management that can serve both single properties and multi-property hotel chains.

**2.2 Product Functions**

The system will provide the following core functions:

1. User and role management with granular permissions

2. Multi-property dashboard with unified calendar view

3. Room and rate management with dynamic pricing

4. Booking and reservation management with multiple sources

5. Guest management with profiles and preferences

6. Payment processing with multiple gateways

7. Loyalty programs and points system

8. Housekeeping and maintenance task management

9. POS system for restaurants, bars, and other outlets

10. Inventory management for hotel supplies

11. Event and conference management

12. SPA and wellness service management

13. Financial reporting and analytics

14. Channel management for OTAs

15. Multi-language and multi-currency support

16. Asset management with depreciation

17. Communication and notification system

**2.3 User Characteristics**

- Super Admin: Manages the entire system, all properties, and users.

- Property Manager: Manages a specific property, its staff, and operations.

- Receptionist: Handles check-ins, check-outs, and reservations.

- Housekeeping Staff: Manages cleaning tasks and room status.

- POS Staff: Manages orders and payments in restaurants, bars, etc.

- Maintenance Staff: Reports and resolves maintenance issues.

- Guest: Accesses services and provides feedback.

**3. Specific Requirements**

**3.1 Functional Requirements**

**3.1.1 User and Role Management**

- FR1.1: The system shall support role-based access control (RBAC) with roles: Super Admin, Property Manager, Receptionist, Housekeeping Staff, POS Staff, Maintenance Staff.

- FR1.2: The system shall allow creating, updating, and deleting users with appropriate permissions.

- FR1.3: The system shall allow assigning users to multiple properties with different roles.

- FR1.4: The system shall track user login activities and last login times.

- FR1.5: The system shall allow users to update their profiles and change passwords.

- FR1.6: The system shall provide API authentication for mobile app integration.

**3.1.2 Multi-Property Management**

- FR2.1: The system shall allow managing multiple properties from a single dashboard.

- FR2.2: The system shall provide property-specific settings (timezone, currency, check-in/out times).

- FR2.3: The system shall allow assigning users to specific properties with appropriate roles.

- FR2.4: The system shall support property-level amenities and services.

3.1.3 Room and Rate Management

- FR3.1: The system shall allow defining room types with details (name, description, base price, max occupancy, amenities).

- FR3.2: The system shall allow managing individual rooms with status (available, occupied, maintenance, etc.).

- FR3.3: The system shall support dynamic pricing by date and room type.

- FR3.4: The system shall allow setting seasonal pricing adjustments.

- FR3.5: The system shall allow creating special packages and promotional codes.

- FR3.6: The system shall manage room images and amenities.

**3.1.4 Booking and Reservation Management**

- FR4.1: The system shall allow creating bookings with guest details, room type, dates, and number of guests.

- FR4.2: The system shall support multiple booking sources (website, walk-in, phone, OTA, travel agent, corporate).

- FR4.3: The system shall track booking status (pending, confirmed, checked\_in, checked\_out, cancelled, no\_show).

- FR4.4: The system shall allow modifying and cancelling bookings with history tracking.

- FR4.5: The system shall generate unique booking references.

- FR4.6: The system shall support waiting list management when rooms are unavailable.

- FR4.7: The system shall allow adding special requests and booking add-ons.

- FR4.8: The system shall calculate total nights and pricing automatically.

**3.1.5 Guest Management**

- FR5.1: The system shall maintain guest profiles with personal details and identification.

- FR5.2: The system shall allow linking guests to user accounts (if they register).

- FR5.3: The system shall store guest preferences (e.g., room type, floor, smoking preference).

- FR5.4: The system shall track guest stay history and loyalty status.

- FR5.5: The system shall store guest identification documents and images.

- FR5.6: The system shall support VIP status for special guests.

**3.1.6 Payment and Invoicing**

- FR6.1: The system shall support multiple payment methods (credit card, debit card, cash, mobile banking, bank transfer, voucher).

- FR6.2: The system shall allow partial, advance, and full payments.

- FR6.3: The system shall integrate with multiple payment gateways.

- FR6.4: The system shall generate invoices with tax calculations.

- FR6.5: The system shall track payment status and transaction IDs.

- FR6.6: The system shall support different payment types (advance, partial, full, refund, deposit).

- FR6.7: The system shall record payment timestamps and remarks.

**3.1.7 Loyalty Programs**

- FR7.1: The system shall allow creating loyalty programs with points per currency spent.

- FR7.2: The system shall track guest points and tier status.

- FR7.3: The system shall allow redeeming points for discounts or services.

- FR7.4: The system shall record points transactions with activity details.

- FR7.5: The system shall support multiple loyalty programs per property.

**3.1.8 Housekeeping and Maintenance**

- FR8.1: The system shall allow assigning housekeeping tasks to staff with due dates.

- FR8.2: The system shall track task status and completion times.

- FR8.3: The system shall log room status changes (available, occupied, cleaning, etc.).

- FR8.4: The system shall allow reporting maintenance issues with priority levels.

- FR8.5: The system shall track maintenance issue resolution.

- FR8.6: The system shall support different task types (cleaning, maintenance, inspection, turndown).

- FR8.7: The system shall allow task prioritization and assignment.

**3.1.9 Point of Sale (POS)**

- FR9.1: The system shall support multiple POS outlets (restaurant, bar, coffee shop, spa, gift shop).

- FR9.2: The system shall allow managing menus and products with categories.

- FR9.3: The system shall support order types (dine-in, takeaway, room service, delivery).

- FR9.4: The system shall track order status and payments.

- FR9.5: The system shall manage inventory for POS products.

- FR9.6: The system shall support room charging for guest orders.

- FR9.7: The system shall manage opening hours and outlet availability.

**3.1.10 Inventory Management**

- FR10.1: The system shall allow defining inventory items with categories and units.

- FR10.2: The system shall track stock levels by property and location.

- FR10.3: The system shall record inventory transactions (in, out, adjustment, transfer).

- FR10.4: The system shall generate purchase orders and track receipts.

- FR10.5: The system shall alert when stock levels fall below reorder points.

- FR10.6: The system shall manage supplier information and contacts.

**3.1.11 Event and Conference Management**

- FR11.1: The system shall allow creating events with details (name, description, capacity, setup/cleanup times).

- FR11.2: The system shall allow booking events with number of attendees and special requests.

- FR11.3: The system shall manage event resources (rooms, equipment) with quantities.

- FR11.4: The system shall track event status (draft, published, ongoing, completed, cancelled).

- FR11.5: The system shall support event booking management and pricing.

**3.1.12 SPA and Wellness Services**

- FR12.1: The system shall allow defining treatments with duration and price.

- FR12.2: The system shall manage therapist schedules and availability.

- FR12.3: The system shall allow booking appointments with guests.

- FR12.4: The system shall track appointment status and notes.

- FR12.5: The system shall manage therapist information and specializations.

**3.1.13 Financial Reporting and Analytics**

- FR13.1: The system shall generate financial reports (revenue, expenses, profit/loss).

- FR13.2: The system shall provide occupancy reports and revenue analysis.

- FR13.3: The system shall allow customizing reports with date ranges and parameters.

- FR13.4: The system shall schedule automated reports and email them.

- FR13.5: The system shall track accounts payable and receivable.

- FR13.6: The system shall manage expense categories and approvals.

**3.1.14 Channel Management**

- FR14.1: The system shall integrate with OTAs (Booking.com, Expedia, etc.).

- FR14.2: The system shall synchronize room availability and rates in real-time.

- FR14.3: The system shall import bookings from OTAs and update status.

- FR14.4: The system shall log synchronization activities and errors.

- FR14.5: The system shall manage channel connections and property mappings.

**3.1.15 Multi-Language and Multi-Currency**

- FR15.1: The system shall support multiple languages with translations.

- FR15.2: The system shall allow setting default and active languages.

- FR15.3: The system shall support multiple currencies with exchange rates.

- FR15.4: The system shall allow setting property-specific currencies.

- FR15.5: The system shall automatically convert prices based on exchange rates.

**3.1.16 Asset Management**

- FR16.1: The system shall allow defining asset categories and individual assets.

- FR16.2: The system shall track asset details (purchase date, price, current value, depreciation).

- FR16.3: The system shall schedule and record maintenance activities.

- FR16.4: The system shall calculate and record depreciation.

- FR16.5: The system shall track asset status and location.

**3.1.17 Communication and Notification**

- FR17.1: The system shall support email and SMS templates.

- FR17.2: The system shall send notifications for bookings, payments, etc.

- FR17.3: The system shall provide internal messaging between staff.

- FR17.4: The system shall log notification delivery status.

- FR17.5: The system shall support threaded messaging with reply functionality.

**3.2 Non-Functional Requirements**

**3.2.1 Performance**

- NFR1.1: The system shall respond to user interactions within 2 seconds under normal load.

- NFR1.2: The system shall support at least 500 concurrent users without performance degradation.

- NFR1.3: The system shall process booking requests within 3 seconds.

**3.2.2 Security**

- NFR2.1: The system shall implement role-based access control with granular permissions.

- NFR2.2: The system shall encrypt sensitive data both at rest and in transit.

- NFR2.3: The system shall maintain audit logs of all critical actions.

- NFR2.4: The system shall support secure payment processing with PCI DSS compliance.

- NFR2.5: The system shall implement API key authentication for external integrations.

**3.2.3 Reliability**

- NFR3.1: The system shall maintain 99.9% uptime during peak operating hours.

- NFR3.2: The system shall implement automatic data backup procedures.

- NFR3.3: The system shall have a disaster recovery plan with recovery time objective of 4 hours.

**3.2.4 Usability**

- NFR4.1: The system shall provide an intuitive user interface requiring minimal training.

- NFR4.2: The system shall be accessible according to WCAG 2.1 AA standards.

- NFR4.3: The system shall provide context-sensitive help and documentation.

**3.2.5 Scalability**

- NFR5.1: The system shall support scaling from single properties to hundreds of properties.

- NFR5.2: The system shall handle seasonal traffic spikes of up to 10 times normal load.

- NFR5.3: The system shall be architected to allow for modular addition of new features.

**3.3 External Interface Requirements**

**3.3.1 User Interfaces**

- The system shall provide a web-based interface compatible with modern browsers (Chrome, Firefox, Safari, Edge).

- The system shall have a responsive design that works on desktop, tablet, and mobile devices.

- The system shall offer role-specific dashboards tailored to different user types.

**3.3.2 Software Interfaces**

- The system shall provide RESTful APIs for integration with third-party systems.

- The system shall integrate with major payment gateways (Stripe, PayPal, etc.).

- The system shall connect to major OTAs through the channel manager.

**3.3.3 Hardware Interfaces**

- The system shall support integration with key card systems for room access.

- The system shall be compatible with standard POS systems for restaurants and spas.

- The system shall support integration with IoT devices for smart room management.

**4. Data Requirements**

**4.1 Data Storage**

- The system shall use a MySQL database for data storage.

- The system shall store data in a normalized structure to ensure data integrity.

- The system shall implement proper indexing for performance optimization.

**4.2 Data Backup and Recovery**

- The system shall perform automated daily backups of the database.

- The system shall retain backups for at least 30 days.

- The system shall support point-in-time recovery.

**4.3 Data Security**

- The system shall encrypt sensitive data (passwords, payment information) using industry-standard encryption.

- The system shall implement secure access controls to prevent unauthorized data access.

- The system shall log all data access and modifications for audit purposes.

**5. System Architecture**

**5.1 Technology Stack**

- Backend: Laravel (PHP framework)

- Database: MySQL

- Frontend: Blade templates or Vue.js for dynamic interfaces

- Authentication: Laravel Sanctum for API authentication

**5.2 Deployment**

- The system shall be deployable on cloud platforms (AWS, Azure, Google Cloud) or on-premise servers.

- The system shall support containerization using Docker for easy deployment and scaling.

**6. Future Enhancements**

**6.1 Mobile Applications**

- Future versions may include native mobile applications for guests and staff.

**6.2 Advanced Analytics**

- Future versions may include advanced analytics and business intelligence features.

**6.3 Integration with Third-Party Services**

- Future versions may include integration with additional third-party services (e.g., CRM, marketing automation).

**This SRS provides a comprehensive overview of the hotel management system requirements based on the database schema. It will serve as a guide for the development team and stakeholders throughout the project lifecycle.**