

Hotel Management System

1. Architecture Overview

The Hotel Management System follows a **three-tier architecture** consisting of

- Presentation Layer (Frontend)
- Application Layer (Backend)
- Data Layer (Database)

This architecture ensures scalability, security, and easy maintenance.

2. Presentation Layer (Frontend)

- Developed using **HTML, CSS, and JavaScript**
 - Provides user interface for Customer, Manager, and Admin
 - Sends HTTP requests to backend APIs
 - Displays data received from backend
- Frontend responsibilities:
- User input handling
 - Form validation
 - Page navigation
 - Displaying data (rooms, bookings, reports)

3. Application Layer (Backend)

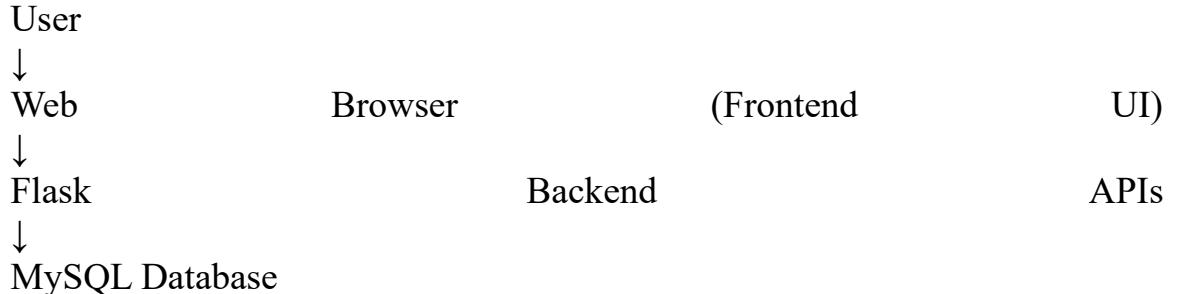
- Developed using **Python Flask**
 - Works as a REST API server
 - Handles all business logic
- Backend responsibilities:
- User authentication and authorization
 - Role-based access control
 - Room availability management
 - Booking creation and cancellation
 - Data validation
 - Communication with database
- Backend modules:
- Authentication Service
 - Room Service
 - Booking Service
 - Admin Service

4. Data Layer (Database)

- Uses **MySQL database**
 - Stores all permanent data
- Main tables:
- Users
 - Rooms
 - Bookings
 - Payments (optional)
- Database responsibilities:

- Store user details and roles
- Store room information and pricing
- Store booking records
- Maintain data consistency

5. System Architecture Flow



6. Architecture Benefits

- Clear separation of frontend, backend, and database
- Multiple users can work in parallel
- Easy to modify or extend features
- Secure role-based system