

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

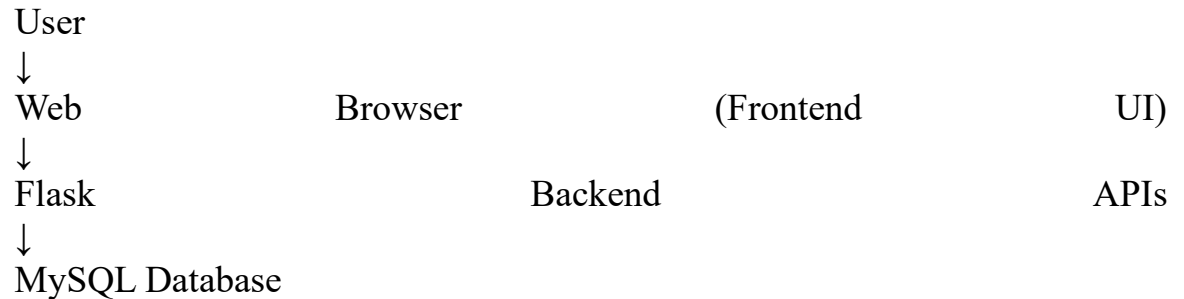
Main tables:

- 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