**<https://chatgpt.com/share/68b5cae4-ebd8-800e-8cdd-844a6354804d>**

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**Hotel Management System**

**1. Common Hotel Staff Roles**

Hotels usually have these categories (you can start small and expand later):

**🔹 Management**

* **Admin / Hotel Manager**
  + Full control (add/remove staff, assign roles, manage hotel setup).
* **Front Office Manager**
  + Oversees receptionists, reservations, guest relations.

**🔹 Operations**

* **Receptionist / Front Desk Staff**
  + Check-in/out, handle guest info, reservations.
* **Housekeeping Staff**
  + Manage room cleaning, status (clean/dirty/occupied).
* **Maintenance Staff**
  + Fix issues, manage repair tickets.

**🔹 Food & Beverages**

* **Chef / Kitchen Staff**
  + Manage menu, food orders from guests.
* **Waiters / Room Service Staff**
  + Deliver food, update order status.
* **Bar Staff** (optional in bigger hotels).

**🔹 Finance & Support**

* **Accountant / Billing Staff**
  + Handle invoices, payments, refunds.
* **IT / Support Staff** (optional).

**2. Permissions per Role (example)**

You don’t hard-code them, you **map role → permissions**.

Example permissions:

* **Reservations**: Create, View, Cancel, Update.
* **Rooms**: View status, Update status (clean/dirty), Assign guest.
* **Billing**: Generate invoice, View transactions, Issue refund.
* **Menu & Orders**: View menu, Add order, Update order, Deliver order.
* **Staff Management**: Add role, Assign role, Remove staff.

Then map them:

* **Admin** → All permissions.
* **Receptionist** → Reservations + Check-in/out + Room assignment.
* **Housekeeping** → View rooms, Update room status only.
* **Maintenance** → View & update repair tickets.
* **Chef** → View orders, Update order status (ready).
* **Waiter** → Take order, Update delivery status.
* **Accountant** → View transactions, Generate invoice, Refund.

**🏨 Hotel Management System – Full Backend Plan**

**1. Core Entities (Database Models)**

**🔹 Users & Authentication**

* **User**
  + id (UUID/Auto)
  + name
  + email (used as login)
  + password (hashed)
  + phone
  + is\_active
  + roles (many-to-many → Role)
  + created\_at, updated\_at

**🔹 Roles & Permissions**

* **Role**
  + id
  + name (Admin, Receptionist, Housekeeping, etc.)
  + description
  + permissions (many-to-many → Permission)
* **Permission**
  + id
  + code (e.g., can\_add\_reservation)
  + description (e.g., "Can create new reservations")
* **UserRole** (if multi-role needed)
* **RolePermission** (map role ↔ permissions).

**2. Hotel Operations Entities**

**🔹 Rooms & Reservations**

* **Room**
  + id / room\_number
  + type (Single, Double, Suite, etc.)
  + status (Available, Occupied, Cleaning, Maintenance)
  + price\_per\_night
* **Reservation**
  + id
  + guest (foreign key → Guest)
  + room (foreign key → Room)
  + check\_in\_date
  + check\_out\_date
  + status (Pending, Confirmed, CheckedIn, CheckedOut, Cancelled)
  + created\_by (User)
  + payment\_status (Pending, Paid, Refunded)
* **Guest**
  + id
  + name
  + phone
  + email
  + address
  + id\_proof (passport, Aadhaar, etc.)

**🔹 Housekeeping**

* **RoomStatusLog**
  + room (FK → Room)
  + status (Clean, Dirty, Needs Repair)
  + updated\_by (Housekeeping User)
  + updated\_at

**🔹 Maintenance**

* **MaintenanceTicket**
  + id
  + room (FK → Room)
  + issue\_description
  + status (Open, InProgress, Resolved)
  + assigned\_to (Maintenance User)
  + created\_at, updated\_at

**🔹 Food & Beverages**

* **MenuItem**
  + id
  + name
  + description
  + price
  + available (boolean)
* **Order**
  + id
  + guest (FK → Guest or Reservation)
  + items (many-to-many → MenuItem with qty)
  + ordered\_by (Waiter/Receptionist)
  + status (Pending, Preparing, Ready, Delivered)

**🔹 Billing & Finance**

* **Invoice**
  + id
  + reservation (FK → Reservation)
  + amount
  + status (Paid, Unpaid, Refunded)
  + generated\_by (Accountant/Admin)
  + created\_at
* **Transaction**
  + id
  + invoice (FK → Invoice)
  + payment\_method (Cash, Card, UPI, etc.)
  + amount
  + transaction\_date

**3. Typical Hotel Roles & Permissions**

| **Role** | **Example Permissions** |
| --- | --- |
| **Admin** | All permissions |
| **Receptionist** | Manage reservations, check-in/out, assign rooms |
| **Housekeeping** | View rooms, update room status |
| **Maintenance** | Manage repair tickets |
| **Chef** | Manage menu, mark orders ready |
| **Waiter/Room Service** | Create food orders, deliver status |
| **Accountant** | Billing, invoices, refunds |
| **Guest** (if self-service portal) | View booking, request services |

**4. Backend Architecture (Django or FastAPI)**

**🔹 Authentication**

* JWT Auth with HttpOnly cookies.
* User → roles → permissions loaded on login.
* Middleware checks permissions before accessing API.

**🔹 API Endpoints (Examples)**

**Auth & Users**

* POST /auth/signup
* POST /auth/login
* POST /auth/logout
* GET /users/ (admin only)
* PATCH /users/{id}/role (assign roles)

**Roles & Permissions**

* POST /roles/ (create role)
* PATCH /roles/{id}/permissions (update permissions)
* GET /roles/

**Rooms & Reservations**

* GET /rooms/
* POST /reservations/
* PATCH /reservations/{id}/status
* GET /reservations/guest/{id}

**Housekeeping**

* PATCH /rooms/{id}/status

**Maintenance**

* POST /maintenance/ticket/
* PATCH /maintenance/ticket/{id}/status

**Food & Beverages**

* GET /menu/
* POST /orders/
* PATCH /orders/{id}/status

**Billing**

* POST /invoice/
* GET /invoice/{id}/
* POST /transaction/

**🏨 Roles & Responsibilities in Hotel Management System**

**👑 1. Admin / Hotel Manager**

* Full control over the system.
* Responsibilities:
  + Add/edit/remove staff (users).
  + Assign roles and permissions.
  + Configure hotel details (rooms, prices, services).
  + View overall reports (revenue, occupancy, maintenance status).
  + Handle escalations (e.g., VIP guests, complaints).

**🛎️ 2. Receptionist / Front Desk Staff**

* First point of contact for guests.
* Responsibilities:
  + Create & manage reservations.
  + Check-in / check-out guests.
  + Assign rooms to guests.
  + Update guest records (contact, ID proof, etc.).
  + Handle cancellations and modifications.
  + Generate bills at checkout (with accountant help if needed).
  + Coordinate with housekeeping (room readiness).

**🧹 3. Housekeeping Staff**

* Maintain cleanliness & room readiness.
* Responsibilities:
  + Update room status (Clean, Dirty, Under Maintenance).
  + Notify reception when room is ready for next guest.
  + Track housekeeping tasks (linen change, cleaning schedules).
  + Report issues (broken furniture, leaks) to maintenance.

**🔧 4. Maintenance Staff**

* Keep hotel facilities in working order.
* Responsibilities:
  + Receive repair tickets (from housekeeping/reception).
  + Fix issues (AC, lights, plumbing, etc.).
  + Update ticket status (In-progress, Resolved).
  + Mark rooms as “Available” once issues are fixed.

**🍳 5. Chef / Kitchen Staff**

* Manage the kitchen & food preparation.
* Responsibilities:
  + Create and update menu items.
  + Receive food orders (from waiters/room service).
  + Update order status → Pending → Preparing → Ready.
  + Notify waiters when food is ready for delivery.

**🍽️ 6. Waiter / Room Service Staff**

* Serve food & guest requests.
* Responsibilities:
  + Take food orders from guests (or from reception).
  + Forward orders to kitchen.
  + Deliver food to rooms or dining area.
  + Update order delivery status.
  + Handle special service requests (water, tea, extra towels if allowed).

**💰 7. Accountant / Billing Staff**

* Handle finances.
* Responsibilities:
  + Generate invoices for reservations.
  + Process payments (cash, card, UPI).
  + Handle refunds/cancellations.
  + Maintain daily transaction records.
  + Prepare financial reports for management.

**🙋 8. Guest (if self-service portal is available)**

* Limited access.
* Responsibilities:
  + Browse available rooms.
  + Book/cancel reservations.
  + View invoices and pay online.
  + Request room service or housekeeping.
  + Submit feedback or complaints.

**🔹 Core Apps You’ll Likely Need**

1. **Accounts** ✅ *(already made)*
   * User signup, login, logout
   * Profile management
   * Password reset/change
2. **Admin** ✅ *(already made)*
   * Manage users
   * Create roles (Hotel posts like Manager, Chef, Receptionist, etc.)
   * Assign / remove roles
3. **Rooms** 🏨
   * Manage rooms (room types, room numbers, availability, rates)
   * Room features (AC, Wi-Fi, etc.)
   * Room status (Available, Booked, Under Maintenance)
4. **Booking / Reservations** 📅
   * Room booking system
   * Check-in / check-out
   * Cancel booking
   * Track guest history
5. **Payments / Billing** 💳
   * Room charges
   * Food/extra services charges
   * Generate invoices/receipts
   * Payment gateways (Stripe/Razorpay if needed)
6. **Housekeeping / Services** 🧹
   * Assign housekeeping staff to rooms
   * Request services (laundry, cleaning, maintenance)
7. **Food & Beverages (optional at first)** 🍽️
   * Restaurant/room service orders
   * Menu management
   * Kitchen staff roles
8. **Reports & Analytics** 📊 *(later)*
   * Daily booking reports
   * Revenue reports
   * Staff activity

**🔹 Suggested Structure (after new apps)**

Backend/

│── Accounts/ # Auth system

│── Admin/ # Roles, permissions, user management

│── Rooms/ # Rooms, room types, availability

│── Booking/ # Reservation system

│── Payments/ # Billing & payments

│── Housekeeping/ # Housekeeping requests

│── Food/ # (optional) Menu & orders

│── Reports/ # (later) Analytics

│── db.sqlite3

│── manage.py

**🔹 How to Create**

Example:

python manage.py startapp Rooms

python manage.py startapp Booking

python manage.py startapp Payments

python manage.py startapp Housekeeping

⚡ Recommendation:  
Start **step by step**.

1. Accounts ✅
2. Admin ✅
3. Rooms + Booking (core hotel logic)
4. Payments (after bookings)
5. Housekeeping & Food (optional)