## **Project: Slot Booking App** **Overview:**

The **Slot Booking App** is a simple web-based scheduling system designed for a software house, allowing employees to reserve daily time slots for playing Tekken 8. The app provides an easy to use interface where users can view available slots, book them under their department, and see which slots are already taken. To ensure fairness and fresh availability, bookings automatically reset at the end of each day. This helps different teams manage playtime efficiently while keeping the schedule transparent and conflict-free.  
  
**Functional Requirements**

1. **User Authentication** 
   1. Users can log in (email/username).
   2. Or just pick department name without strict auth
2. **Slot Management**
   1. Define available time slots e.g 2pm–3pm
   2. Each slot can only be booked once.
3. **Booking System**
   1. Users can book an available slot.
   2. Prevent double-booking of the same slot.
   3. Users can cancel their booking.
4. **Booking Details**
   1. Show which slots are:
      1. Free
      2. Already booked with department name and player
5. **Admin Panel** 
   1. Add/modify available slots.
   2. Reset bookings (daily/weekly).

**Technical-Requirements**

* **Backend:**FastAPI
* **DB**:PostgresSQL
* **Frontend**: Simple HTML/JS or React
* **ScheduledTask**:Celery or APScheduler

## **Non-Functional Requirements**

* **Simplicity** – Should be easy to use
* **Responsiveness** – Work on mobile and desktop.
* **Concurrency Handling** – Prevent two users from booking the same slot at the same time.
* **Persistence** – Store bookings in a database so they’re not lost on refresh.

**Suggested Features for the App**

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| **Feature** | **Description** |
| **Slot overview dashboard** | Display a grid of time slots with clear visual status. |
| **Booking modal/dialog** | Clicking opens a dialog to confirm booking; shows which department is booking. |
| **Tooltip or detail pane** | Hover or tap on booked slots to see who booked and department info. |
| **Filter by department/user** | Show slots booked by a specific department or allow filtering. |
| **Creation & editing** | Admins can create, edit, or delete time slots directly from interface. |
| **Booking conflict handling** | Prevent double-booking by disabling simultaneous clicks during bookings. |
| **Visual feedback** | Show loading indicator when booking actions are in progress. |
| **Optional calendar integration** | Sync with department calendars or export bookings. |

