## Ticketing System design

Core Requirements for ticket booking

Users should be able to view events Users should be able to search for events Users should be able to book tickets to events Non-Functional Requirements

Core Requirements

The system should prioritize availability for searching & viewing events, but should prioritize consisten for booking events (no double booking)

The system should be scalable and able to handle high throughput in the form of popular events (10 million users, one event)

The system should have low latency search

**Functional Requirements** 

- 1. View upcoming events
- 2. Book tickets to upcoming events
- 3. Search for upcoming events

- Below the line

- View their booked tickets
- Admins flows (adding/editing/etc)

Non-functional Requirements

- 1. Availability for searching & viewing events, Consistency for booking events (no double booking)
- 2. Handle popular events
- 3. low latency search (<500ms)
- 3. Read >> write
  - --- Below the line -
- Backups CI/CD
- Fault tolerance

Here are the shown entities needed for key functional requirements below:

Event: This entity stores essential information about an event, including details like the date, description, type, and the performer or team involved. It acts as the central point of information for each unique event.

User: Represents the individual interacting with the system. Needs no further explanation.

Performer: Represents the individual or group performing or participating in the event. Key attributes for this entity include the performer's name, a brief description, and potentially links to their work or profiles.

Venue: Represents the physical location where an event is held. Each venue entity includes details such as address, capacity, and a specific seat map.

Ticket: Contains information related to individual tickets for events. This includes attributes such as the associated event ID, seat details (like section, row, and seat number), pricing, and status (available or

Booking: Records the details of a user's ticket purchase. It typically includes the user ID, a list of ticket IDs being booked, total price, and booking status (such as in-progress or confirmed). This entity is key in managing the transaction aspect of the ticket purchasing process. Core Entities

- **Events**
- Users
- venues
- Performers
- **Tickets**
- **Bookings**

