



CONCERTGO



APPLICATION DOMAIN



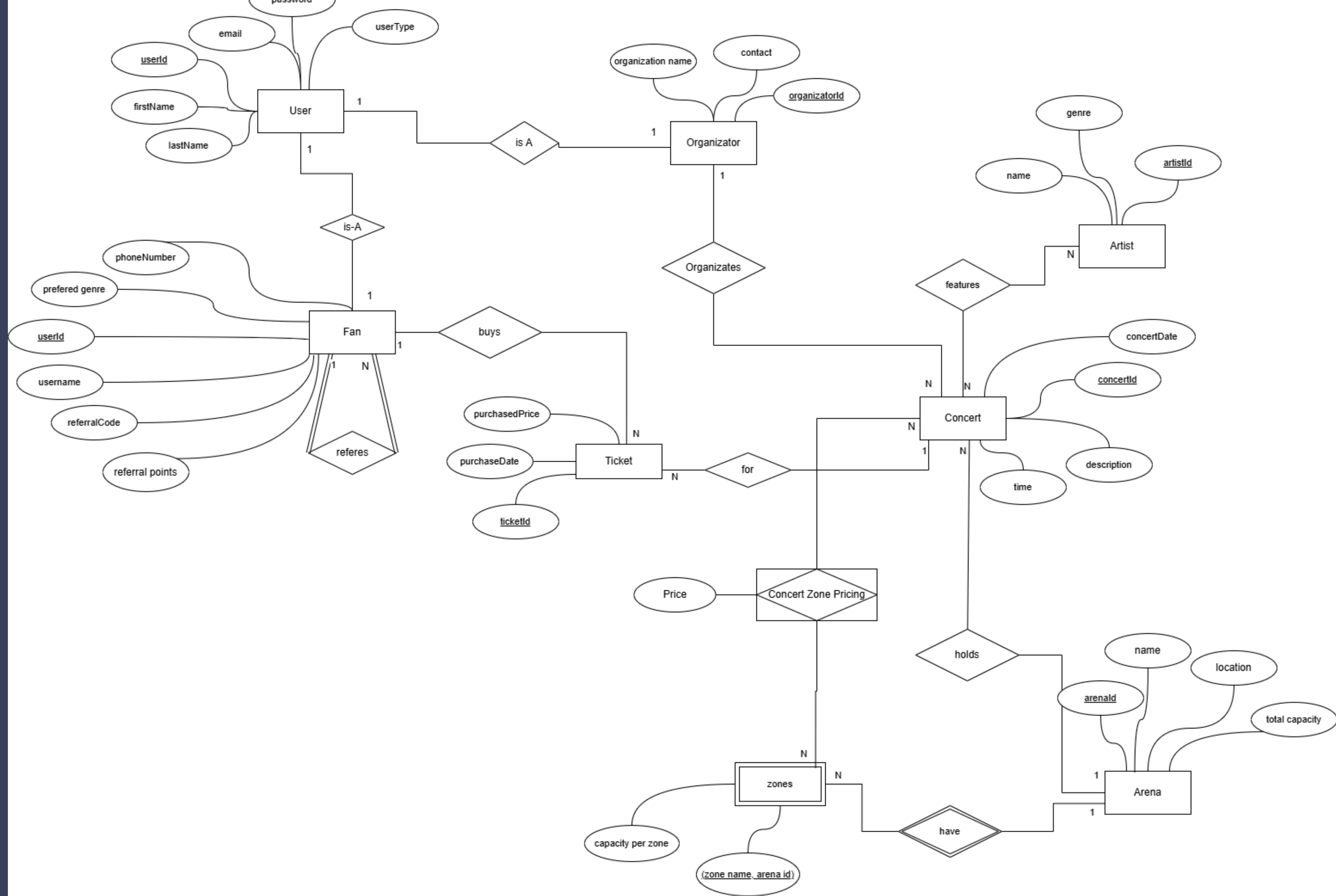
EXPLORE UPCOMING CONCERTS

PURCHASE TICKETS

FANS CAN BENEFIT FROM REFERRAL PROGRAM

ORGANIZERS CREATE EVENTS

THREE TYPE OF USERS





USECASE 1

Fans seamlessly purchase tickets for their preferred concerts through the web system.

Steps Involved:

1. Fan signs up or logs in
2. Browses available concerts
3. Selects a specific concert
4. Chooses a seating zone
5. Optionally redeems loyalty points or referral codes.
6. Completes the ticket purchase
7. Receives email confirmation
8. Accesses an electronic version of the ticket (PDF) via their fan panel

CONCERT	DATE	ARTISTS	ARENA	TICKETS SOLD	TOTAL REVENUE
Ademptio nihil depraedor. Vilicus optio praesentium cribro eos veniam adfero aggredior. Depromo vilis subseco admiratio velum volaticus adiuvo viscus audeo.	2/7/2026	Kate Schinner, Mr. Merle Nitzsche III	Miller Group Arena	6	\$692.46
Speciosus bonus adaugeo decumbo depraedor placeat amaritudo. Calcar clementia pauper alter dolores defleo ullam vulgus blandior. Vivo decet tergum vester celebrer vacuus derelinquo.	2/26/2026	Dr. Julie Lubowitz	Miller Group Arena	6	\$867.71
Praesentium cubitum compono sperno vere distinctio civitas. Ubi eos vacuus cinis damnatio cubo ascit suadeo calco. Conduco agnosco sophismata supellex auxilium voco.	7/28/2025	Lawrence Kertzmann	Miller Group Arena	6	\$1,608.80
Cernuus arbor somnus coma sollers comminor balbus congregatio. Eveniet termes eos vicissitudo repellat comminor coniecto beatus tempus virgo. Bibo temporibus adsuesco theatrum labore.	1/28/2026	Dr. Robin Stark, Kate Schinner, Noah Bergstrom	Miller Group Arena	5	\$1,101.34
Cruciamentum sonitus arcesso delectatio vomica. Commoda repudiandae quisquam hic aro expedita bene paulatim bardus summa. Tot thymbra ventosus.	4/9/2026	Dr. Robin Stark, Lawrence Kertzmann	Reynolds, Nader and Lang Arena	5	\$1,362.76
Anser tyrannus placeat sunt cetera alienus abundans quasi. Tabernus canto deputo arceo congregatio tripudio. Adulatio trans dolor adopto complectus ulciscor quod cognatus cognatus.	4/18/2026	Judy Balistreri, Kate Schinner, Milton Hartmann	Kuvalis - Stark Arena	4	\$974.16

PROVIDE TICKET SALES INSIGHTS INTO UPCOMING CONCERTS.

ANALYTICS REPORT 1



USECASE 2

organizers can schedule and configure new concert events by entering essential information such as the concert description, date, start time, selected arena , zones pricing and participating artists.

Steps Involved:

- Organizer logs into the system
- Organizer clicks the “**Create New Concert**” button
- Enters concert details (description, date, and start time)
- Backend filters and displays only arenas available at the selected time
- Organizer selects an available arena
- The system loads zones for the selected arena
- Organizer enters pricing for every available zone
- Backend filters and displays only available artists
- Organizer selects one or more participating artists
- Organizer reviews all entered data
- Organizer confirms and submits the concert setup
- System saves the concert information
- The organizer is shown summary of the new concert



Organizers Analytics Report

Comprehensive performance analysis by arena

Data Source: MongoDB

← Back to Admin



\$19,099.71

Total Revenue



30

Total Concerts



100

Tickets Sold



96

Unique Fans

Organizer Performance by Arena

Detailed breakdown of organizer performance metrics

All Arenas

Organization	Arena	Location	Concerts	Revenue	Tickets	Unique Fans	Avg Price	Avg Tickets/Concert
Murray and Sons 1-762-305-2770	Lang, Kunze and Huel Arena	9631 Becker Bridge	2	\$2,506.75	9	8	\$278.53	4.5
Jenkins - Kuvalis 1-853-277-6679 x426	Bernhard - Hyatt Arena	2829 Murl Forges	2	\$1,717.12	7	6	\$245.30	3.5
Hagenes - White (328) 237-7757 x529	Greenfelder, Carter and Kessler Arena	99483 Teagan Shores	1	\$1,470.79	6	6	\$245.13	6.0
Wolff Group 371-418-8882 x6212	Lang, Kunze and Huel Arena	9631 Becker Bridge	1	\$1,397.25	5	5	\$279.45	5.0
Sanford, Weber and Kerluke 1-691-314-9662	Bernhard - Hyatt Arena	2829 Murl Forges	2	\$1,244.88	6	6	\$207.48	3.0

TO PROVIDE INSIGHTS INTO ORGANIZER ACTIVITY BY TRACKING THE NUMBER OF CONCERTS HOSTED IN EACH ARENA.

ANALYTICS REPORT 2



IDEAS BEHIND NOSQL DESIGN



Users

Current Decision: Embed Fan/Organizer/Admin Details

- Embedding Benefits: The 1:1 relationship between users and their specific role details (fan_details, organizer_details) ensures that authentication and user profile retrieval are handled without additional lookups, thus reducing query complexity and eliminating the need for joins. User authentication is a critical path operation that benefits significantly from single-document access.
- Alternative (Using References):
 - Benefits: Easier to scale and modify fan/organizer data independently, removing data duplication and allowing for more flexible role-based access control.
 - Drawbacks: More joins are required for every user operation, increasing latency for authentication and profile management.



Arenas

Current Decision: Embed Zone Information

- Embedding Benefits: Zone configurations (zone_name, capacity_per_zone) are rarely updated once an arena is established, making them ideal for embedding. Seat availability calculations and zone-based pricing queries are significantly faster with embedded zone data. There is consistency in this option since there's no risk of zone data being stale between collections.
- Alternative (Using References):
 - Benefits: Zone modifications can be managed independently without locking the entire arena document. Avoids duplication if multiple arenas share similar zone structures.
 - Drawbacks: Requires additional queries for zone details during ticket purchasing and capacity calculations. Multiple joins are needed for concert-arena-zone operations.



Concerts

Current Decision: Embed Artist and Zone Pricing Details

- Embedding Benefits:
 - Artist lineup and zone pricing for a concert rarely change once announced, making embedding suitable. Querying for available concerts with full artist information is faster without requiring joins. Direct access to embedded pricing details improves ticket purchasing use case performance significantly.
- Alternative (Using References):
 - Benefits: Changes to artist information or pricing strategies propagate instantly without modifying concert documents. Better normalization reduces data redundancy.
 - Drawbacks: Overhead from join operations for every concert listing. Concert search by genre requires multiple collection queries instead of a single embedded field search.



Tickets

Current Decision: Embed Denormalized Concert, Arena, and Fan Details

- **Embedding Benefits:**
 - Aggregations for fan behavior analysis, revenue reporting, and genre performance analytics are significantly faster without joins. Ticket details, once purchased, represent a historical snapshot that shouldn't change, making embedding ideal. This approach simplifies complex reporting queries and analytics use cases.
- **Alternative (Using References):**
 - **Benefits:** Changes to concert, arena, or fan details don't require altering existing ticket documents. Better storage efficiency and reduced data duplication.
 - **Drawbacks:** Reporting use cases require multiple joins across collections, increasing latency. Aggregating ticket sales data across referenced collections is substantially slower than querying embedded data.

