Project 2

Database Planning and Requirement Analysis
Event Management System: OccasionOrganizer

By

Group ID: 15

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To

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A Report Submitted in Partial Fulfillment of
the Requirements for

ITCS413 Database Design

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Project 1

Things To Do

- Database Application: Entertainment and Concert Domain
  - Event Management System for Entertainment and Concerts
    - The office of OccasionOrganizer was established in 2010 in Bangkok, Thailand. OccasionOrganizer is skilled at handling all aspects of concert planning, from the coordination of artists to the sale of tickets. In our creative approach to event planning, we often use cutting-edge technology and unique ideas to make the concert experience better for both the audience and the artists.

- Select one or two core business functions of the company describe the responsibilities and activities.
    - Occasion Organizer specializes in providing services for entertainment and concert events, managing various aspects ranging from registration and booking systems to budget management and sponsorship coordination.

Motivation:

In the current changing event management industry, our firm realizes the critical need for a powerful and comprehensive database application designed for concert ticket sales. Several significant problems now limit our operational efficiency, preventing seamless connections with consumers, artists, and sponsors. Identifying these difficulties highlights the necessity and relevance of deploying a specialized database solution.

As-Is Analysis:

- **Key Characteristics of Current Situation and Detailed Description of the Problems**
  a. **Manual processes and lack of integration:** The reliance on manual ticket sales processes, along with the lack of a centralized database application, leads to inefficiencies. With data spreading over numerous spreadsheets, synchronization difficulties occur, potentially leading to inaccuracies and delays in transaction processing. This lack of connection impedes the organization's capacity to simplify procedures and deliver accurate, real-time information.
  b. **Inadequate Communication with Artists and Sponsors:** The lack of a specific database tool for artist-sponsor contacts makes it difficult to maintain thorough records. The lack of organized data concerning artist needs, sponsorship agreements, and performance records has an influence on event planning efficiency. The existing system restricts effective communication, perhaps resulting in missed opportunities and inefficient partnerships.
  c. **Customer Experience and Engagement:** The existing ticket-buying experience lacks customization and engagement since the lack of a comprehensive database. Website navigation and customization issues reduce customer satisfaction, reducing the organization's ability to deliver an enjoyable and personalized user experience. Without the capacity to track client preferences, targeted marketing and customized recommendations are difficult to implement.
  d. **Limited Reputation in Thailand:** The firm confronts difficulties in building a solid reputation in the local market. This constraint may have an influence on the

capacity to arrange high-profile events and partnerships, since artists and sponsors may favor rivals with established reputations. Creating a favorable brand image is critical for attracting top people and developing successful collaborations.

e. **Database Size and Scalability Issues:** The present database is struggling to keep up with the growing number of people that connect onto the website to purchase tickets. Insufficient database capacity and scalability constraints lead to performance concerns, inefficient response times, and potential interruptions during high ticket sales periods. This has a direct influence on the user experience, potentially leading to consumer unhappiness and limiting the organization's capacity to satisfy the increased demand for ticket sales.

Strength:

- **Diverse Service Offerings:** Our organization uniquely combines artist management services and ticket selling through a single platform. This integrated approach distinguishes us from competitors who specialize exclusively in either artist coordination or ticket sales. This dual service model positions us as a one-stop-shop for concert events, potentially attracting a broader range of clients**.** For example, LiveNation, by utilizing ThaiTicket Major, leverages the strengths of both services, offering a comprehensive solution to both artists and customers.

Weaknesses:

- **Limited Reputation in Thailand:** Our organization has limited reputation in Thailand, which is a major issue. Establishing trust and reputation in the industry is critical for recruiting top-tier artists, sponsors, and clients. Our present position may affect our capacity to acquire high-profile events and collaborations. For example, competitors with established reputations may have an advantage in getting exclusive artist contracts and garnering greater audiences.

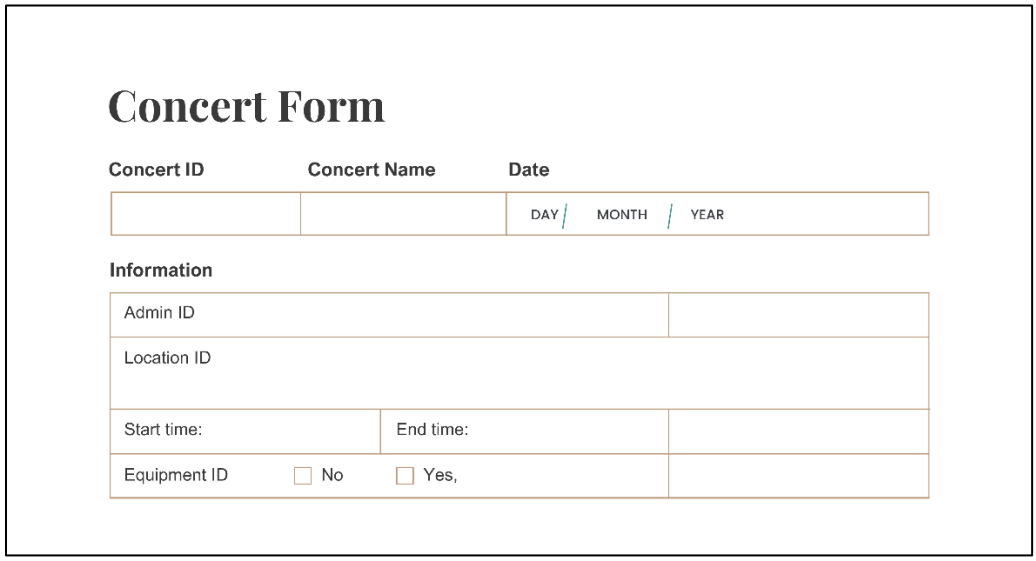
- **Database size and scalability:** Our website's database struggles to handle increasing user traffic for ticket purchases. This limitation might cause performance difficulties, sluggish response times, and significant interruptions during busy ticket selling periods. Thaiticket Major, a prominent ticket-selling platform, sees an increase in website traffic when tickets for highly anticipated events go on sale. A database with insufficient capacity and scalability may provide an unsatisfactory user experience.

Potential Improvements:

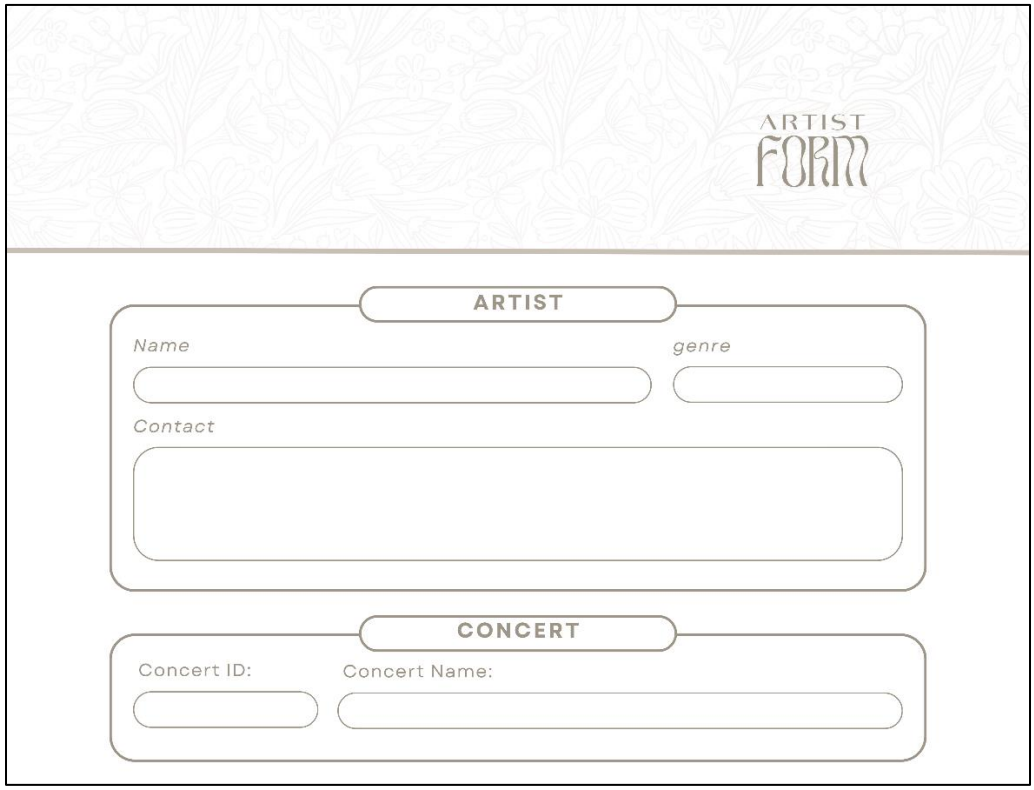
- **Brand Building and Marketing:** Investing in smart brand creation and marketing strategies is critical for addressing the vulnerability of a restricted reputation. Building collaborations, sponsoring popular events, and utilizing social media may all help us increase our exposure and reputation in the market. For example, targeted marketing initiatives that highlight successful partnerships with artists and sponsors can help to develop a good brand image.
- **Database Optimization and Scalability:** Upgrading the database infrastructure to meet the growing user base is critical. This involves investing in scalable cloud solutions, improving query performance, and introducing caching methods to maintain a consistent and responsive user experience, especially at peak times. For example, Thaiticket big might benefit from a database update to meet the enormous demand during big concert ticket releases, providing a speedier transaction procedure for consumers.
- **User Engagement and Experience Enhancement:** Improving the overall user experience on the ticket-selling website can help to reduce the impact of our limited reputation. User-friendly interfaces, tailored recommendations, and speedy ticket buying processes may all improve consumer happiness and loyalty. For example, taking inspiration from popular ticket-selling systems such as Livenation and implementing features that allow for easy navigation, rapid transactions, and personalized experiences may all help to increase user engagement.

Forms for Data Input:

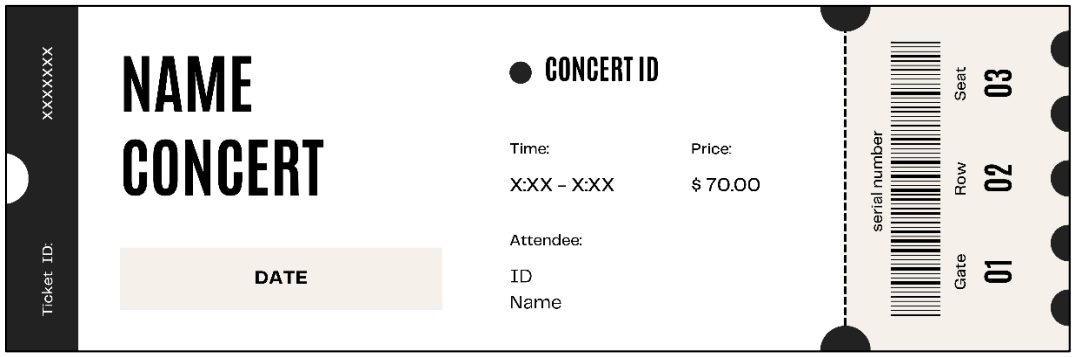
- **Concert Details Form:** Allows administrators and concert organizers to input information about upcoming concerts, including date, time, location, and lineup.



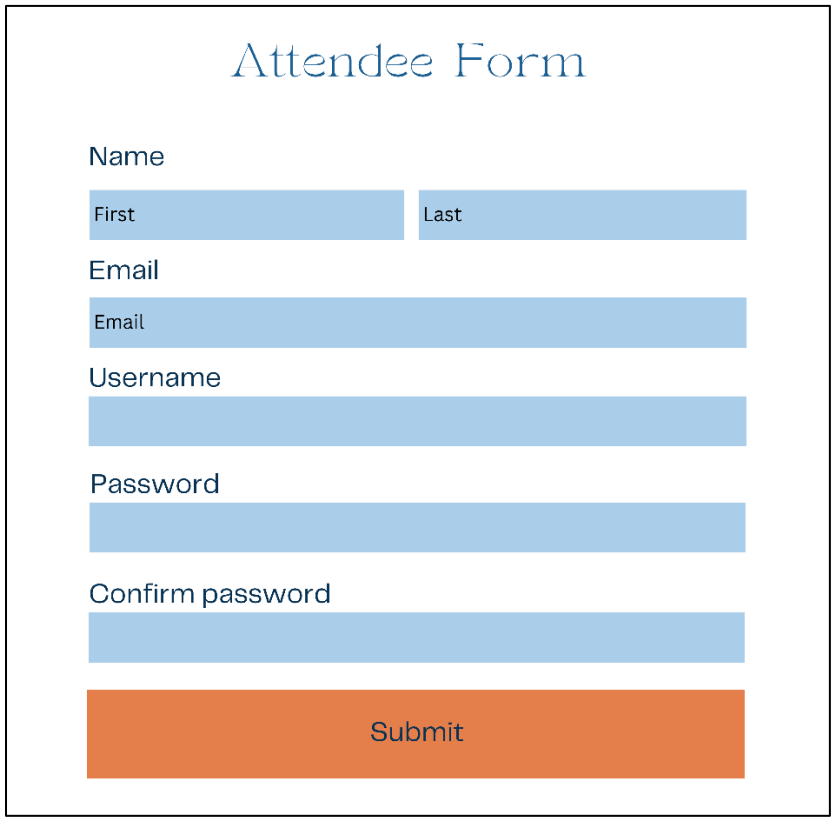
- **Artist Profile Form:** Enables administrators and concert organizers to add, edit, or remove artist profiles, including biographical information and discography.



- **Ticket Sales Form:** Facilitates the processing of ticket sales transactions, allowing concert organizers to input details such as ticket type, price, and quantity sold.

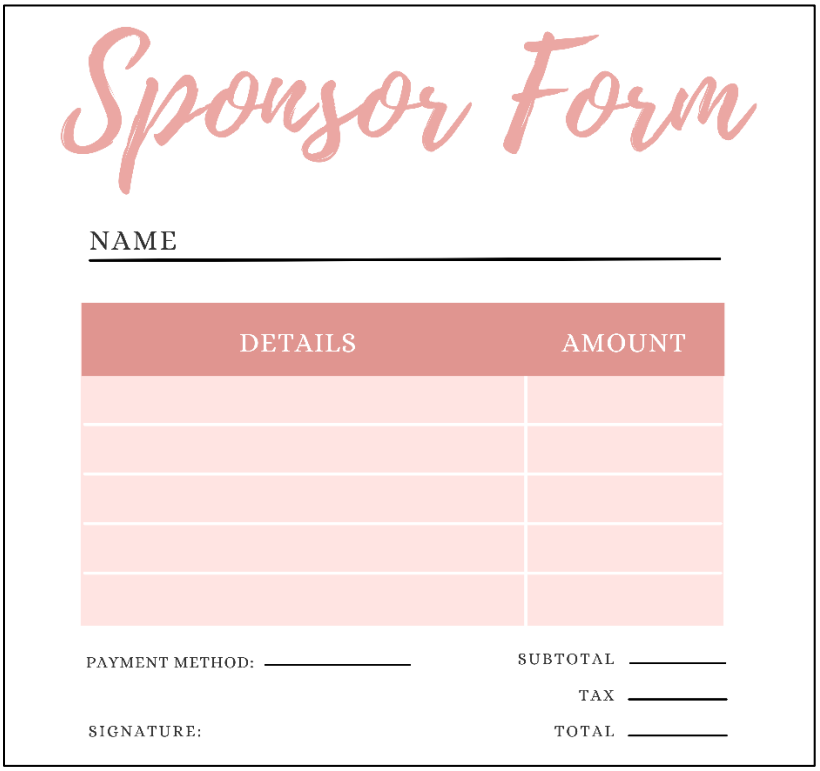


- **Attendee Registration Form:** Allows attendees to register for concerts by providing personal details such as name, contact information, and ticket preferences.

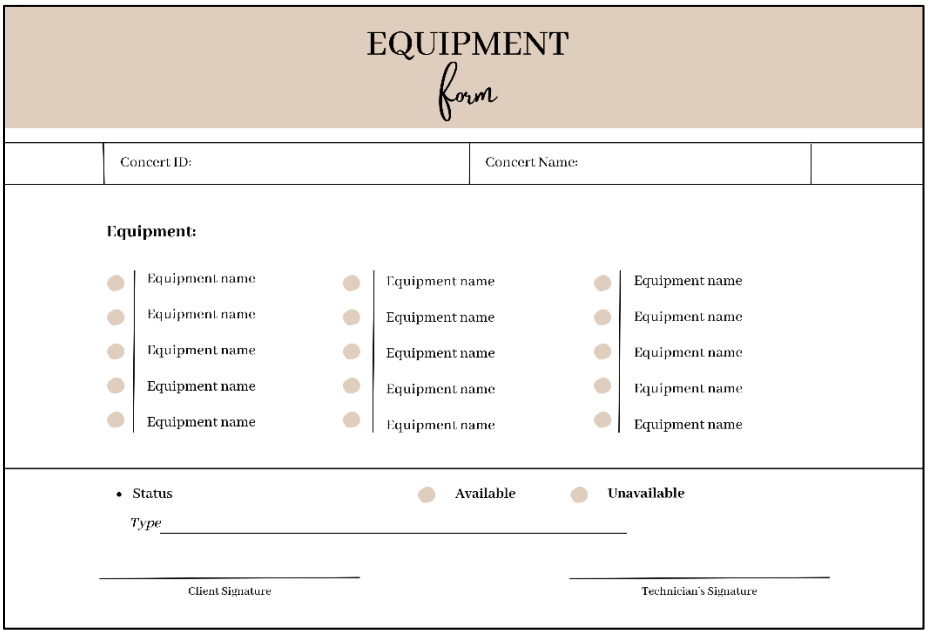


- ~~**Venue Booking Form:** Enables concert organizers to book venues for upcoming events by specifying date, time, capacity, and rental fees.~~

- **Sponsorship Agreement Form:** Allows administrators and concert organizers to record details of sponsorship agreements, including sponsor names, contribution amounts, and contractual terms.



- **Equipment form:** It allows concert hosts to reserve equipment for upcoming events by specifying an id, name, type, and status.



Reports for Data Retrieval:

1. **Concert Schedule Report:** Provides a comprehensive overview of upcoming concerts, including date, time, venue, and artist lineup.
2. **Ticket Sales Summary Report:** Summarizes ticket sales for each concert event, including total revenue, ticket types sold, and sales trends over time
3. **Attendee List Report:** Generates a list of attendees for a specific concert event, including their names, contact information, and ticket purchase details.
4. **Artist Performance History Report:** Displays the performance history of artists, including past concerts they've participated in, audience attendance, and ticket sales.
5. **Venue Availability Report:** Indicates the availability of venues for future concert events, including booked dates, capacities, and rental costs.
6. **Sponsorship Contribution Report:** Summarizes sponsorship contributions from various sponsors, including total amounts pledged, payment status, and benefits received.
7. **Upcoming Artist Performance Report:** Specifically focuses on upcoming performances by artists, listing their names, performance dates, and concert details.

Target User Groups:

- Attendees: Individuals purchasing tickets for concerts.
- Sponsor: Organizations and brands seeking to provide financial support for entertainment events; seeking a platform that provides transparency regarding the utilization of their sponsorship and its influence on the success of the event.
- Artists: Performers engaging in contractual agreements with the organization for concert appearances.

Relationships between Current Situations:

The concert ticketing system's current situation is defined by security flaws, and communication difficulties. Through awareness of these aspects, the organization may more effectively design a plan for executing the required forms and reports, using the utilizing manual document generation or modifications to current database programs, to improve the problems and optimize concert event organization.

Mission statement:

The goal of Occasion Organizers Event Management System is to provide a complete, adaptable, and easy-to-use system that meets all the different needs of the concert and entertainment business. This system aims to change the way events are organized by solving essential problems like coordinating logistics, communicating in real-time, venue booking, sponsorship handling, and efficiently managing a lot of data about attendees. It's meant to be a central hub that makes all parts of planning an event more accessible, from coming up with ideas to analyzing what happened after the event, including ticket sales, artist coordination, and venue administration. The system works for many people, like event planners, artists, sellers, and attendees, by combining cutting-edge technology with easy-to-use interfaces. This makes sure that everyone has a smooth and memorable event experience. This goal comes from wanting to be innovative, making customers happy, and knowing a lot about how the entertainment industry is changing. This makes Occasion Organizer a leader in event management options.

Mission objectives:

- **a.** Improved Communication: Implementing features to prevent communication breakdowns between different stakeholders, such as artists, sponsors, and teams within the organization.
- **b.** User Capacity Management: Upgrading the system to support a higher volume of users is crucial for large-scale concert events.

c. Efficient Artist and Sponsor Coordination: Streamlining the process of coordinating with artists and sponsors, from contract signing to event execution.

d. Robust Financial Management: Enhancing the system's ability to manage budgets and financial transactions efficiently.

e. Advanced Ticketing System: Upgrading the registration and ticketing systems for a smoother, more secure ticket purchasing experience.

f. Comprehensive Analytics and Reporting: Providing detailed analytics and reporting tools for better decision-making and event planning.

g. Versatile Venue Booking: Incorporate a flexible venue booking system to accommodate a variety of event sizes and types.

h. Seamless Ticket Distribution and Delivery: Implement a robust system for the distribution and delivery of tickets, including electronic and physical methods.

i. End-to-End Event Management: Ensure the platform provides a full range of services, from artist booking and event marketing to attendee management and post-event analysis.

Scope and boundary:

- Scope:
  - Management of Show and Entertainment Data: The system will store and manage data about shows and entertainment, like information about artists, shows, and other related data.
  - Ticket Management: The system will allow users to buy tickets online and keep track of the different types of tickets they buy, including checking on their state and delivering them.
  - Analysis and Report: The system will generate reports and perform analysis related to shows, allowing event organizers to analyze and plan shows efficiently.
  - Financial Transactions: The system will help with show budget management and take care of financial transactions to make sure that planning an event is safe and organized.

- Improved Communication: The system will feature tools to enhance communication and collaboration among artists, sponsors, and various team members to prevent communication breakdowns.
- Tickets Distribution and Delivery: The system will handle the distribution of tickets and ensure that they are delivered safely in both electronic and physical formats.
- Managing Artists and Sponsors: The system will help with managing information about artists and sponsors for the events.

➢ Boundary (Exclusions):

- The management of attendee experience and security is typically handled by the security and safety department than being directly related to show and entertainment management. Marketing and advertising, for shows are not directly involved in the management of show and entertainment. Fall under the responsibility of the marketing and advertising team. The booking system, for venues is typically managed by event planning or other relevant teams. It is not taken into consideration within show and entertainment management.

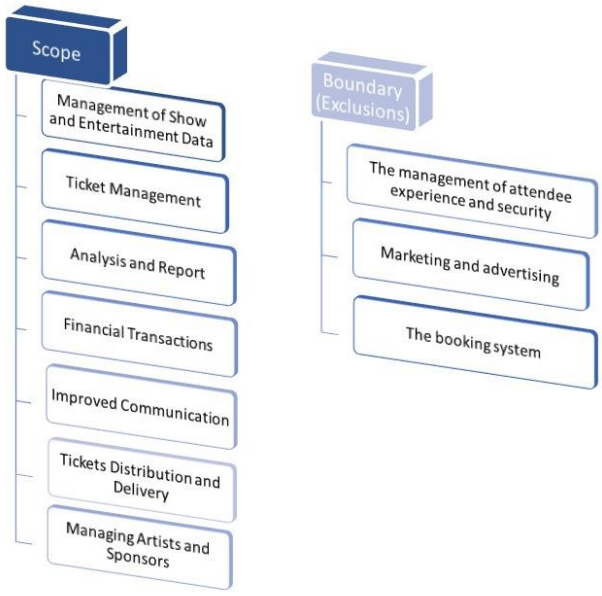


Figure: Scope and boundary

Mappings of major user views and operations which can be shown as tables describing relationships among different groups of target users, different groups of data items, and different groups of operations.

User Groups:

Group	**Description**
Administrators	Manage overall system functionality and settings.
Concert Organizers	Plan and coordinate concert events.
Artists	Performers participating in concerts.
Attendees	Individuals purchasing tickets and attending concerts.
Sponsors	Entities providing financial support for concerts.

Data Items:

Data Item	**Description**
Concert Details	Information about upcoming concerts, including date, time, location, and lineup.
Artist Profiles	Biographical information and discography of performing artists.
Ticket Sales	Records of tickets sold, including ticket type, price, and quantity.
Attendee Records	Personal details of attendees, including name, contact information, and ticket purchases.
Sponsorship Details	Information about sponsors, including name, contribution amount, and sponsor details.

Operations:

Operation	**Description**
Create Concert	Administrators and concert organizers can add new concert events.
Update Concert Details	Modify details of existing concerts, such as date, time, or venue.
Manage Artist Profiles	Add, edit, or remove artist profiles.
Sell Tickets	Process ticket sales transactions for attendees.
View Attendee Details	Access attendee information and ticket purchase history.
Record Sponsorship	Allow administrators to record sponsorship details for concerts.

Relationships:

User Group	**Data Item**	**Operation**
Administrators	Concert Details	Create Concert
Concert Organizers	Artist Profiles	Update Concert Details
Artists	Ticket Sales	Manage Artist Profiles
Attendees	Attendee Records	Sell Tickets
	Ticket Sales	View Attendee Details
Sponsors	Sponsorship Details	Record Sponsorship

Users' Requirements Specification consists of

- Data Requirements which describe the characteristics of each group of data items used in your database application:

1. Administrators:
    - Username: Unique identifier for login purposes.
    - Password: Secure access credentials.
    - Name: Name of the administrator.
    - Contact Information: Phone number or email address.
    - Role: Designation within the organization (e.g., system administrator, event manager).
2. Concert Organizers:
    - Name: Name of the organizer or organizing team.
    - Contact Information: Phone number or email address.
    - Assigned Events: List of concerts or events they are responsible for organizing.
    - Responsibilities: Details about their role and responsibilities in organizing concerts.
3. Artists:
    - Name: Name of the artist or band.
    - Genre: Musical genre(s) they perform.
    - Contact Information: Phone number or email address.
    - Biography: Information about the artist's background and career.
    - Discography (Text or Memo): List of albums or songs released by the artist.
4. Attendees:
    - Name: Name of the attendee.
    - Contact Information: Phone number or email address.
    - Ticket Information: Details about the tickets purchased (e.g., ticket type, seat number).

- Preferences: Any specific preferences or requirements (e.g., dietary restrictions, accessibility needs).

5. Sponsors:
   - Name: Name of the sponsoring company or individual.
   - Contact Information: Phone number or email address.
   - Contribution Amount: Amount pledged or contributed by the sponsor.
   - Sponsorship Level: Tier or level of sponsorship (e.g., platinum, gold, silver).
   - Benefits Received: Details about the benefits or perks offered to sponsors based on their contribution level.

- Transaction Requirements which describe how the data is used in your database application.

Transaction requirements in the concert system involve ticket sales, which includes processes like ticket booking, payment processing, and order confirmation. Other transactions may include artist contracts, venue agreements, and financial transactions for expenses and revenue sharing. Efficient handling is a crucial role for smooth concert transactions.

Systems Requirements Specification describes at least the following items:

a. initial database size: The initial database size requirement is estimated to be 500 GB to accommodate data on upcoming concerts, artist profiles, venue details, ticket sales records, and attendee information.
b. database growth: The database is projected to grow at a rate of 20% per year to accommodate new concert events, additional artist profiles, and increasing ticket sales transactions.
c. the types and average number of record searches: Users are expected to perform approximately 5,000 concert searches and 2,000 artist searches per day, with variations based on peak concert seasons or promotional campaigns.

d. networking and shared access requirements: The concert database should support remote access via HTTPS protocol with a minimum bandwidth of 100 Mbps. It should accommodate up to 1000 concurrent users with role-based access control for administrators, staff, and customers.
e. Performance: The system should maintain an average response time of less than 1 second for concert searches and ticket purchases, with the ability to handle up to 10,000 concurrent transactions during peak hours.
f. Security: The concert database must encrypt sensitive information (e.g., payment details, attendee profiles) using AES-256 encryption. Access to the database should be restricted to authenticated users with role-based permissions, and all access attempts must be logged for auditing purposes.
g. backup and recovery: Daily backups should be performed automatically, with backup files stored securely offsite for a minimum of 30 days. A documented recovery process should be in place to restore the database to a consistent state within 4 hours of a failure.
h. legal issues: The concert database must obtain user consent for data processing and adhere to regulations regarding the handling of personal information. It should maintain audit trails for regulatory reporting and provide mechanisms for users to access, update, or delete their data as required by law.

Project 2

User requirement specifications

Attendee

- Within the concert management system, an entity labeled "Attendee" captures all necessary data for individuals who are partaking in concert events. This entity includes attributes such as attendee_id, name, email, username, password, and is linked to tickets via ticket_id. Attendees are required to register with their personal details and have a unique identifier. Once registered, they can log in to the system, browse upcoming concerts, select seats, and complete the ticket purchase process. They also have the ability to provide feedback on events through ratings and reviews.

Ticket

- The "Ticket" entity represents the tickets issued to attendees for concert events. It contains a ticket_id, serial_number, and attributes detailing the location within the venue such as gate, zone, and seat. Pricing information is also stored here, along with the date, start_time, and end_time of the concert. Relationships to the attendee and the specific concert are maintained through foreign keys.

Sponsor

- "Sponsor" is an entity that holds information about the financial backers of concerts. It includes a unique id, sponsor_name, sponsor_detail, and the amount contributed. The relationship to the concert is maintained through concert_id and concert_name, allowing for the tracking of which concert each sponsor has supported. This enables organizers to manage sponsor agreements and contributions effectively.

Concert

- The central entity of the system is "Concert," which consolidates all details about the concert event. It includes the concert_name, the timings (date, start_time, and

end_time), and is associated with a specific location through location_id. It's linked to the necessary equipment via equipment_id and the administrative details are connected through admin_id. This entity serves as a hub, connecting various parts of the system such as attendees, tickets, sponsors, and artists.

Admin

- The "Admin" entity represents the system administrators who have overarching control and access to the system. It contains attributes such as id, first_name, last_name, username, and password. Administrators are tasked with setting up and managing events, which includes activating and deactivating ticket sales, and overseeing the financial transactions related to these sales.

Artist

- For each concert, artists are an integral part, and the "Artist" entity captures their details. Attributes include id, full_name, genre, and contact_details. The artist entity is associated with the concerts through concert_id and concert_name, providing a way to link artists with their performances and manage the scheduling of their acts.

Equipment

- Finally, the "Equipment" entity keeps track of all equipment required for the concert. It includes details such as id, equipment_name, equipment_type, and status, along with financial attributes like quantity, cost_planned, and cost_actual. This entity is directly connected to the concert, ensuring that each event has the necessary resources allocated and allowing for budget tracking.

ERD

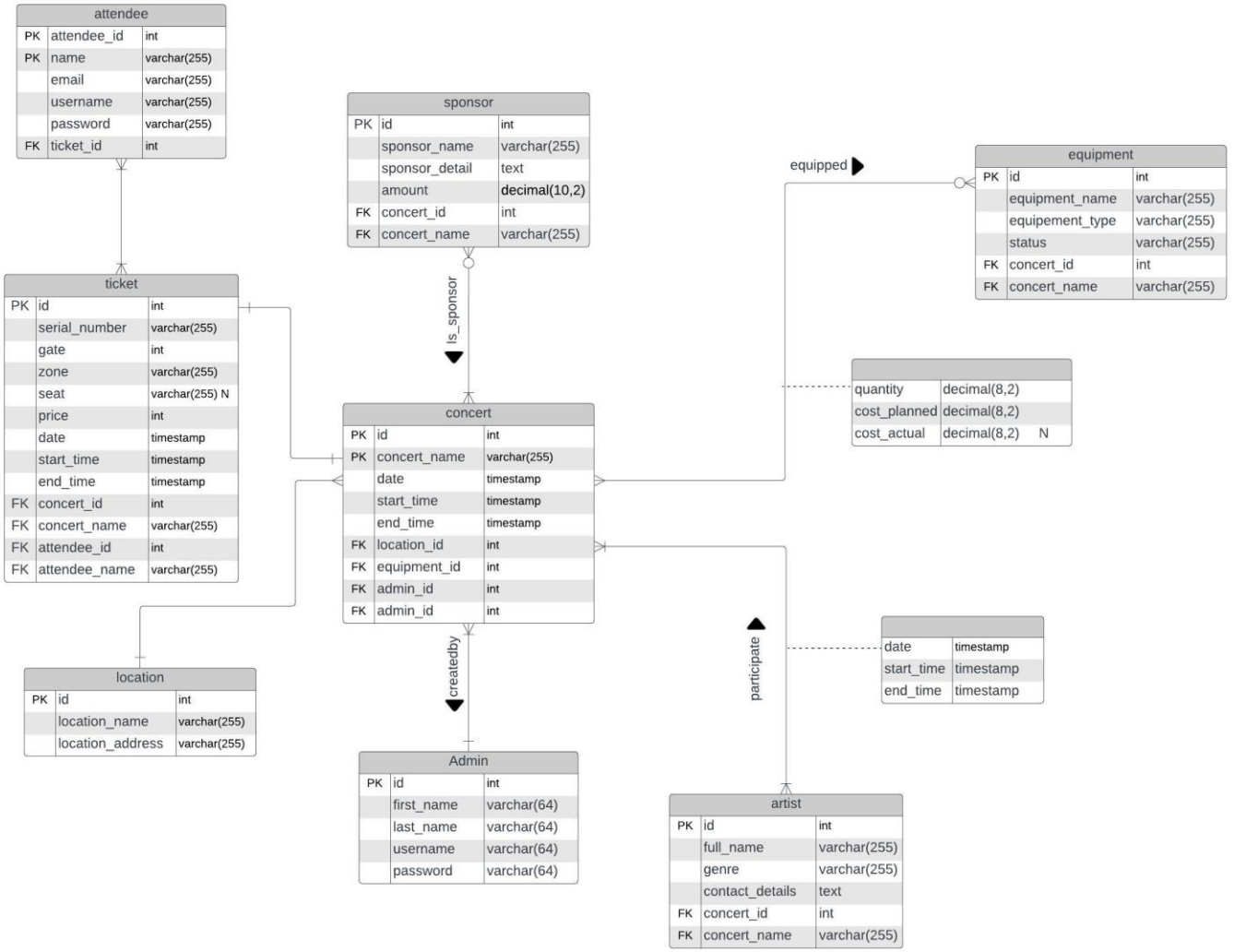


Figure: ERD

Pathway

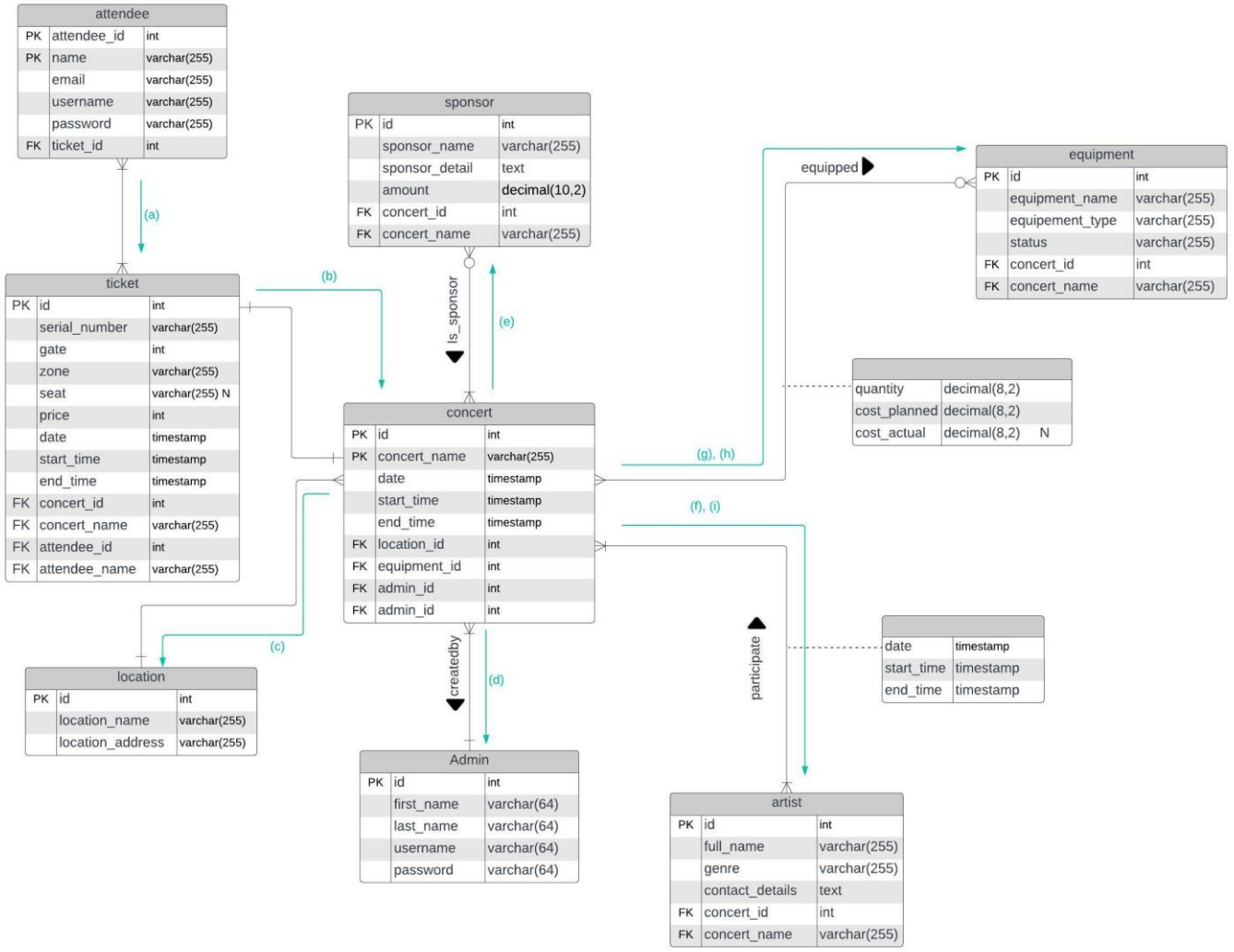


Figure: Pathway

Transaction requirements

- **Data Entry**
    - Enter the details for a new attendee and the account's attendee data (such as details of email contacts, username, and password).
    - Enter the details of the concert (such as location, concert name, date, start time, and end time)
    - Enter the details of sponsor (such as sponsor name, sponsor detail, amount, concert name, id)
    - Enter the details of the equipped equipment (such as the equipment name, equipment type, status, quantity, cost planned, cost actual, concert ID, and concert name)
    - Enter the details of the artist that performs the concert (such as full name, genre, date, start time, end time, and contact details)
    - Enter the details of administrative data (such as first_name, last_name, username, and password)
- **Data update/deletion**
    - Update/delete the details for a new attendee.
    - Update/delete the details of the concert.
    - Update/delete the details of the sponsor.
    - Update/delete the details of the equipped equipment.
    - Update/delete the details of the artist.
    - Update/delete the details of administrative data.
- **Data queries**
    (a) List the details of the ticket by the attendee who owned the ticket.
    (b) List the details of the concert ascending by ticket ID.
    (c) List the details of the location where that concert was performed.
    (d) List the details of the admin who created the concert in the system.
    (e) List the details of the sponsor who supported the concert.
    (f) List the details of the name, genre, and contact details that the artist performed.

(g) List the details of the equipment that will be used in the concert.

(h) Identify the quantity, cost planned, and actual cost of equipment used in the concert.

(i) Identify the timestamp of the date, start time, and end time of the artist who participated in the concert.

Revision list

- Improve the form input section: add the example of the form input
- Delete the venue booking instead of the equipment form