SVKM's NMIMS
School of Technology Management & Engineering, Chandigarh
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Course: Database Management Systems

Project Report

Program	BTech Computer Engineering	
Semester	IV	
Name of the Project:	Event Management System	
Details of Project Members		
Batch	Roll No.	Name
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Date of Submission: 2nd April 2024		

Contribution of each project Members:

Roll No.	Name:	Contribution
A068	Malhar Rane	
A063	Charles D'Souza	

Github Link:

https://github.com/MalharRane/Event-Management-System/blob/main/README.md

Project Report

Event Management System

by

Malhar Rane, A068

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Course: DBMS

AY: 2023-24

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I. Storyline

This section should describe the requirements for the chosen database topic. Form a storyline and describe in detail.

An event management system is a powerful tool that streamlines the planning, organization, and execution of events. It offers several benefits, making it an efficient choice for event organizers and attendees alike.

Imagine a scenario where a company is planning a large conference with multiple sessions, speakers, and attendees. Without an event management system, organizing such an event would be chaotic and time-consuming. However, with an event management system in place, the process becomes much smoother and more efficient.

One of the key advantages of an event management system is its ability to centralize all event-related information. Organizers can easily track event details such as venue, date, time, and schedule in one place, reducing the chances of miscommunication or errors.

Additionally, an event management system allows for easy registration and management of attendees. Attendees can register online, select their sessions, and receive updates and reminders, simplifying the registration process for both attendees and organizers.

Moreover, the system enables organizers to manage speakers, sponsors, and volunteers efficiently. They can easily communicate with these stakeholders, assign tasks, and track progress, ensuring everything runs smoothly on the day of the event.

To implement an event management system, several requirements need to be met. These include:

- Database Management: A robust database is essential to store all event-related information, including attendee details, schedules, and feedback.
- User Interface: An intuitive user interface is crucial to allow organizers, attendees, speakers, sponsors, and volunteers to easily access and interact with the system.
- Integration: The system should be able to integrate with other tools and platforms, such as payment gateways for ticket sales and email marketing platforms for communication.
- Security: Since the system will store sensitive information, such as attendee and payment details, security measures must be in place to protect this data from unauthorized access.
- Scalability: The system should be able to scale according to the size and complexity of the event, accommodating changes and additions as needed.

In conclusion, an event management system offers numerous benefits and is a valuable tool for organizing successful events. By centralizing information, streamlining processes, and enhancing communication, it contributes to the efficiency and success of any event.

II. Components of Database Design

Describe all entities along with their attributes here. Also, mention the primary keys for each entity.

Describe all relationships among various entities. Also, specify the cardinality and participation for all relationships.

Event:
Event ID (Primary Key)
Event Name
Event Description
Start Date
End Date
Location
Organizer (Foreign Key to Organizer entity)
Category/Type
Registration Deadline
Maximum Capacity
Current Attendance
Status (e.g., Upcoming, Ongoing, Completed)

Organizer:
Organizer ID (Primary Key)
Organizer Name
Contact Person
Contact Email
Contact Phone
Organization Name (if applicable)

Attendee:
Attendee ID (Primary Key)
First Name
Last Name
Email
Phone Number
Address
Payment Information
Registration Date
Event(s) Registered For (Reference to Event entity)

Speaker:
Speaker ID (Primary Key)
Speaker Name
Biography
Contact Information
Specialization/Expertise

Previous Speaking Engagements

Venue:
Venue ID (Primary Key)
Venue Name
Address
Capacity
Facilities Available (e.g., WiFi, Parking, Catering)
Contact Information
Rental Cost

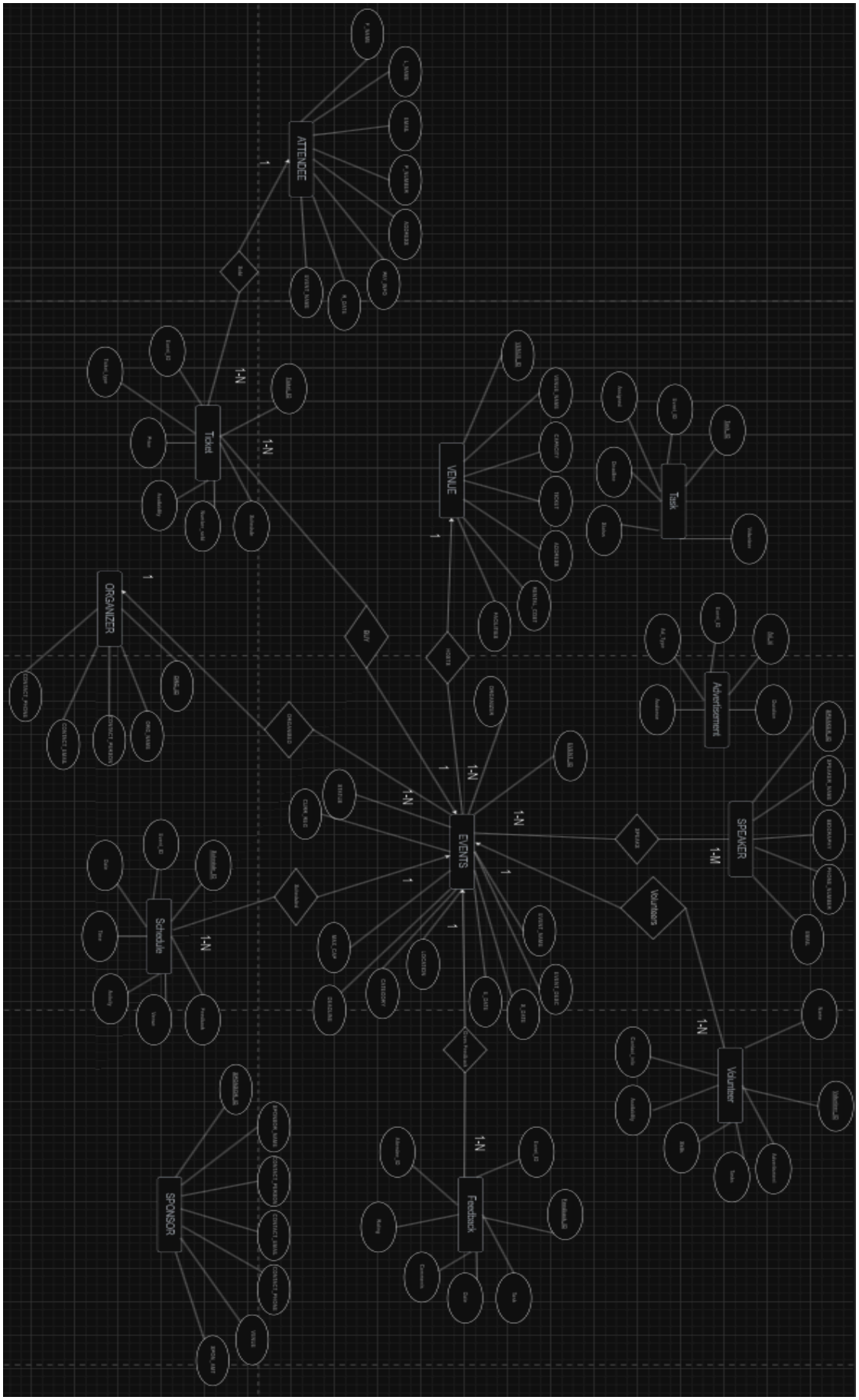
Ticket:
Ticket ID (Primary Key)
Event ID (Foreign Key to Event entity)
Ticket Type (e.g., General Admission, VIP, Student)
Price
Availability
Number Sold

Schedule:
Schedule ID (Primary Key)
Event ID (Foreign Key to Event entity)
Date
Time
Activity/Session Name
Speaker(s) (Reference to Speaker entity)
Venue (Reference to Venue entity)

Feedback:
Feedback ID (Primary Key)
Event ID (Foreign Key to Event entity)
Attendee ID (Foreign Key to Attendee entity)
Rating
Comments
Date

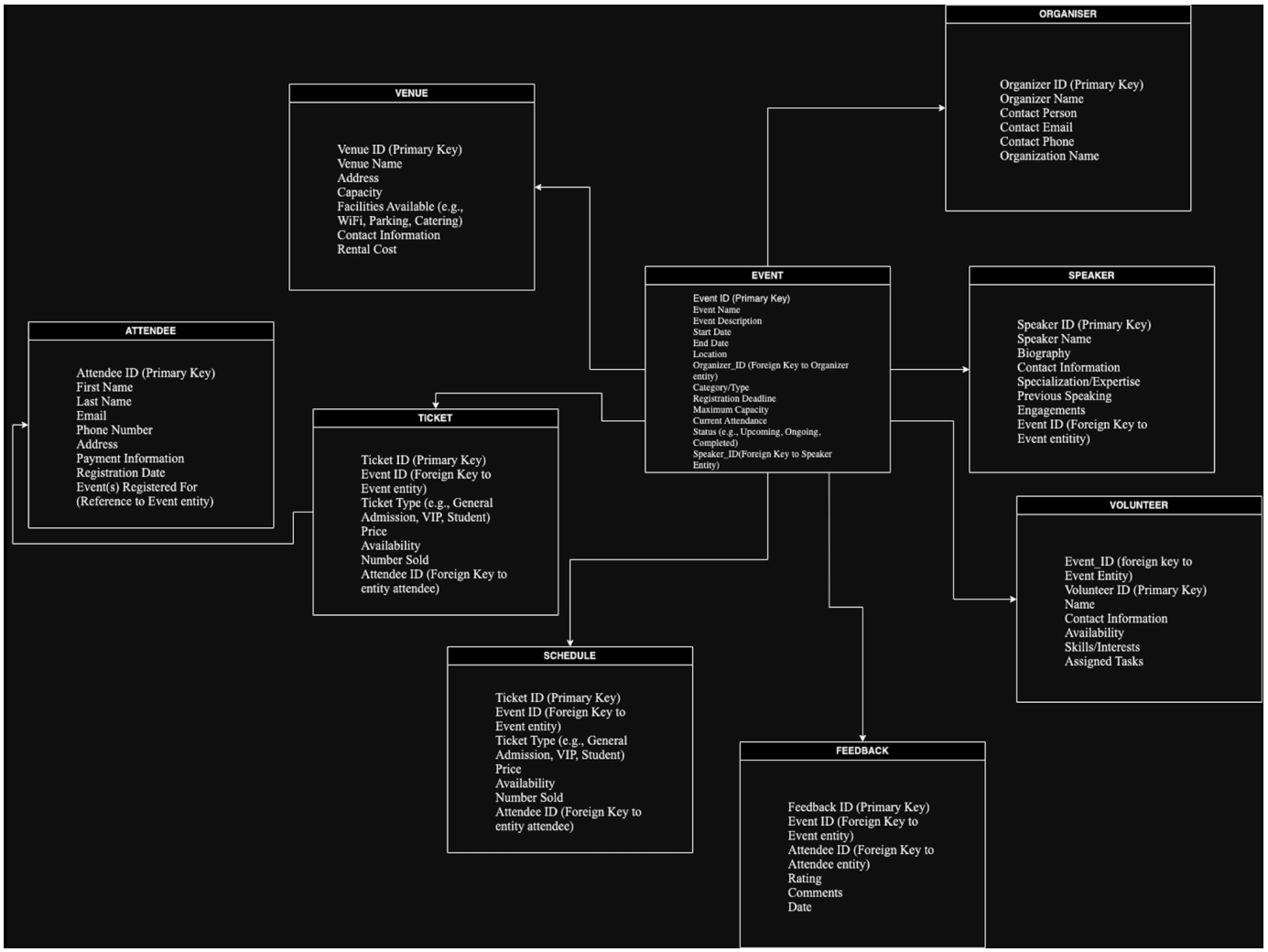
Volunteer:
Volunteer ID (Primary Key)
Name
Contact Information
Availability
Skills/Interests
Assigned Tasks

III. Entity Relationship Diagram



IV. Relational Model

Convert the ER diagram to the relational model using the concepts learned in the class.
List the various tables obtained.



V. Normalization

Perform normalization (1NF, 2NF, 3NF, BCNF) as applicable for the entire database.

Checking for 1NF: In the given entities in Venue we see that the attribute Facilities available is a multivalued attribute as one Venue can have multiple facilities. Therefore the relation does not satisfy the 1NF so we decompose it to make it into 1NF

We create a new table with VenueFacilites and VenueID where VenueID is the foreign key from table Venue.

similarly for skills and tasksAssigned in volunteers we create a new tables as a volunteer can have multiple skills and can take multiple tasks

Checking for 2NF: Since the table is in 1NF and Does not have any partial dependencies the above table is in 2NF.

Checking for 3NF: Since the table is 2NF and does not have any transitivities therefore the relation is in 3NF.

Checking for BCNF: Since the LHS is not super key in every case therefore the relation is not in BCNF.

VI. SQL Queries

Using a DBMS software (SQLite3 or MySQL or any other of your choice):

- Create the tables
- Populate the tables (insert some meaningful data, at least 10 tuples for each relation)
- Run SQL queries (minimum 20) covering **all concepts** learned in the class

This section should contain the question, SQL code, and the output snapshot for each query.

QUERIES FOR CREATION OF THE TABLES:

```
create database Events;
use Events;

CREATE TABLE Event (
    EventID INT PRIMARY KEY,
    EventName VARCHAR(255),
    EventDescription VARCHAR(255),
    StartDate DATE,
    EndDate DATE,
    Location VARCHAR(255),
    Organizer_ID INT,
    Category VARCHAR(255),
    RegistrationDeadline DATE,
    MaximumCapacity INT,
    CurrentAttendance INT,
    Status VARCHAR(50),
    Speaker_ID INT
);

CREATE TABLE Organizer (
    OrganizerID INT PRIMARY KEY,
    OrganizerName VARCHAR(255),
    ContactPerson VARCHAR(255),
    ContactEmail VARCHAR(255),
    ContactPhone VARCHAR(20),
    OrganizationName VARCHAR(255)
);
CREATE TABLE Attendee (
    AttendeeID INT PRIMARY KEY,
    FirstName VARCHAR(255),
    LastName VARCHAR(255),
    Email VARCHAR(255),
    PhoneNumber VARCHAR(20),
    Address VARCHAR(255),
    PaymentInformation VARCHAR(255),
```

```
    RegistrationDate DATE,
    EventID INT,
    FOREIGN KEY (EventID) REFERENCES Event(EventID)
);
CREATE TABLE Speaker (
    SpeakerID INT PRIMARY KEY,
    SpeakerName VARCHAR(255),
    Biography VARCHAR(255),
    ContactInformation VARCHAR(255),
    Specialization VARCHAR(255),
    PreviousSpeakingEngagements VARCHAR(255),
    EventID INT,
    FOREIGN KEY (EventID) REFERENCES Event(EventID)
);
CREATE TABLE Venue (
    VenueID INT PRIMARY KEY,
    VenueName VARCHAR(255),
    Address VARCHAR(255),
    Capacity INT,
    ContactInformation VARCHAR(255),
    RentalCost DECIMAL(10, 2)
);

CREATE TABLE VenueFacilities (
    VenueID INT,
    FacilityName VARCHAR(255),
    FOREIGN KEY (VenueID) REFERENCES Venue(VenueID)
);

CREATE TABLE Ticket (
    TicketID INT PRIMARY KEY,
    EventID INT,
    TicketType VARCHAR(255),
    Price DECIMAL(10, 2),
    Availability INT,
    NumberSold INT,
    AttendeeID INT,
    FOREIGN KEY (EventID) REFERENCES Event(EventID),
    FOREIGN KEY (AttendeeID) REFERENCES Attendee(AttendeeID)
);
CREATE TABLE Schedule (
    ScheduleID INT PRIMARY KEY,
    EventID INT,
    Date DATE,
    Time TIME,
    ActivitySessionName VARCHAR(255),
```

```
    SpeakerID INT,
    VenueID INT,
    FOREIGN KEY (EventID) REFERENCES Event(EventID),
    FOREIGN KEY (SpeakerID) REFERENCES Speaker(SpeakerID),
    FOREIGN KEY (VenueID) REFERENCES Venue(VenueID)
);
CREATE TABLE Feedback (
    FeedbackID INT PRIMARY KEY,
    EventID INT,
    AttendeeID INT,
    Rating INT,
    Comments VARCHAR(250),
    Date DATE,
    FOREIGN KEY (EventID) REFERENCES Event(EventID),
    FOREIGN KEY (AttendeeID) REFERENCES Attendee(AttendeeID)
);
CREATE TABLE Volunteer (
    VolunteerID INT PRIMARY KEY,
    Event_ID INT,
    Name VARCHAR(255),
    ContactInformation VARCHAR(255),
    Availability VARCHAR(255),
    FOREIGN KEY (Event_ID) REFERENCES Event(EventID)
);

CREATE TABLE VolunteerSkills (
    VolunteerID INT,
    SkillInterest VARCHAR(255),
    FOREIGN KEY (VolunteerID) REFERENCES Volunteer(VolunteerID)
);

CREATE TABLE VolunteerTasks (
    VolunteerID INT,
    AssignedTask VARCHAR(255),
    FOREIGN KEY (VolunteerID) REFERENCES Volunteer(VolunteerID)
);

ALTER table Event add column (FOREIGN KEY (Organizer_ID) REFERENCES
Organizer(OrganizerID));

INSERT INTO Event VALUES
(1, 'Conference on Artificial Intelligence', 'Annual conference discussing advancements in AI',
'2024-09-15', '2024-09-17', 'Convention Center', 1, 'Technology', '2024-09-01', 500, 250, 'Active', 1),
(2, 'Music Festival', 'Three-day music festival featuring various artists', '2024-07-20', '2024-07-22', 'City
Park', 2, 'Music', '2024-07-01', 1000, 700, 'Active', 2),
```

(3, 'Business Networking Event', 'Networking event for professionals from various industries', '2024-11-10', '2024-11-10', 'Business Center', 3, 'Business', '2024-11-01', 150, 100, 'Active', 3),
(4, 'Health and Wellness Expo', 'Exhibition promoting health and wellness products and services', '2024-05-05', '2024-05-06', 'Exhibition Center', 4, 'Health', '2024-04-15', 300, 200, 'Active', 4),
(5, 'Tech Startup Pitch Competition', 'Competition for tech startups to pitch their ideas to investors', '2024-08-30', '2024-08-30', 'Innovation Hub', 5, 'Technology', '2024-08-15', 50, 30, 'Active', 5),
(6, 'Art Exhibition', 'Exhibition showcasing works of contemporary artists', '2024-10-25', '2024-10-27', 'Art Gallery', 6, 'Art', '2024-10-01', 200, 150, 'Active', 6),
(7, 'Educational Workshop on Finance', 'Workshop providing financial literacy education', '2024-06-12', '2024-06-12', 'Community Center', 7, 'Education', '2024-06-01', 80, 50, 'Active', 7),
(8, 'Food Truck Festival', 'Festival featuring a variety of food trucks', '2024-04-08', '2024-04-09', 'Fairgrounds', 8, 'Food', '2024-03-20', 400, 300, 'Active', 8),
(9, 'Fashion Show', 'Fashion event showcasing latest trends in clothing and accessories', '2024-09-01', '2024-09-01', 'Fashion Mall', 9, 'Fashion', '2024-08-15', 150, 100, 'Active', 9),
(10, 'Charity Gala Dinner', 'Fundraising dinner to support a charitable cause', '2024-11-28', '2024-11-28', 'Luxury Hotel', 10, 'Charity', '2024-11-15', 120, 80, 'Active', 10);

INSERT INTO Organizer VALUES
(1, 'TechCon Events', 'John Smith', 'john@example.com', '123-456-7890', 'TechCon Events Inc.'),
(2, 'MusicFest Productions', 'Alice Johnson', 'alice@example.com', '987-654-3210', 'MusicFest Productions Ltd.'),
(3, 'Business Networking Group', 'David Brown', 'david@example.com', '456-789-0123', 'Business Network LLC'),
(4, 'Health Expo Organization', 'Emily Davis', 'emily@example.com', '321-654-9870', 'Health Expo Organization'),
(5, 'Tech Startup Association', 'Michael White', 'michael@example.com', '789-012-3456', 'Tech Startup Association'),
(6, 'Art Gallery Management', 'Sophia Miller', 'sophia@example.com', '012-345-6789', 'Art Gallery Management LLC'),
(7, 'Finance Education Society', 'William Wilson', 'william@example.com', '654-321-0987', 'Finance Education Society'),
(8, 'Food Truck Association', 'Emma Brown', 'emma@example.com', '567-890-1234', 'Food Truck Association'),
(9, 'Fashion Event Organizers', 'Oliver Taylor', 'oliver@example.com', '890-123-4567', 'Fashion Event Organizers'),
(10, 'Charity Gala Committee', 'Sophie Anderson', 'sophie@example.com', '234-567-8901', 'Charity Gala Committee');

INSERT INTO Attendee VALUES
(1, 'Alice', 'Smith', 'alice@example.com', '123-456-7890', '123 Main St', 'Credit Card', '2024-09-01', 1),
(2, 'Bob', 'Johnson', 'bob@example.com', '987-654-3210', '456 Elm St', 'PayPal', '2024-07-01', 2),
(3, 'Charlie', 'Brown', 'charlie@example.com', '456-789-0123', '789 Oak St', 'Cash', '2024-11-01', 3),
(4, 'David', 'Davis', 'david@example.com', '321-654-9870', '101 Pine St', 'Credit Card', '2024-05-01', 4),
(5, 'Emma', 'Wilson', 'emma@example.com', '789-012-3456', '202 Maple St', 'PayPal', '2024-08-15', 5),
(6, 'Frank', 'Taylor', 'frank@example.com', '012-345-6789', '303 Cedar St', 'Cash', '2024-10-01', 6),
(7, 'Grace', 'Miller', 'grace@example.com', '654-321-0987', '404 Walnut St', 'Credit Card', '2024-06-01', 7),

(8, 'Hannah', 'Anderson', 'hannah@example.com', '567-890-1234', '505 Oak St', 'PayPal', '2024-04-15', 8),
(9, 'Isaac', 'Thomas', 'isaac@example.com', '890-123-4567', '606 Pine St', 'Cash', '2024-09-01', 9),
(10, 'Jack', 'Brown', 'jack@example.com', '234-567-8901', '707 Elm St', 'Credit Card', '2024-11-15', 10);

INSERT INTO Speaker VALUES
(1, 'John Doe', 'Renowned AI expert with 20+ years of experience', 'john.doe@example.com', 'Artificial Intelligence', 'Speaker at various AI conferences', 1),
(2, 'Emily White', 'Acclaimed musician and performer', 'emily.white@example.com', 'Music', 'Performer at major music festivals', 2),
(3, 'David Green', 'Experienced business leader and entrepreneur', 'david.green@example.com', 'Business Networking', 'Keynote speaker at business events', 3),
(4, 'Sarah Black', 'Health and wellness expert and author', 'sarah.black@example.com', 'Health and Wellness', 'Speaker at health expos and seminars', 4),
(5, 'Michael Brown', 'Tech startup mentor and advisor', 'michael.brown@example.com', 'Technology', 'Mentor at tech startup accelerators', 5),
(6, 'Sophie Green', 'Notable contemporary artist', 'sophie.green@example.com', 'Art', 'Exhibitor at art galleries and exhibitions', 6),
(7, 'William Wilson', 'Finance educator and consultant', 'william.wilson@example.com', 'Finance', 'Speaker at finance workshops and seminars', 7),
(8, 'Emma Miller', 'Food enthusiast and food truck owner', 'emma.miller@example.com', 'Food', 'Speaker at food truck events and festivals', 8),
(9, 'Oliver Taylor', 'Fashion designer and stylist', 'oliver.taylor@example.com', 'Fashion', 'Speaker at fashion shows and events', 9),
(10, 'Sophie Anderson', 'Charity organizer and philanthropist', 'sophie.anderson@example.com', 'Charity', 'Speaker at charity galas and events', 10);

INSERT INTO Venue VALUES
(1, 'Convention Center', '123 Main St', 1000, 'contact@example.com', 5000.00),
(2, 'City Park', '456 Elm St', 5000, 'contact@example.com', 2000.00),
(3, 'Business Center', '789 Oak St', 200, 'contact@example.com', 1000.00),
(4, 'Exhibition Center', '101 Pine St', 1000, 'contact@example.com', 3000.00),
(5, 'Innovation Hub', '202 Maple St', 50, 'contact@example.com', 1500.00),
(6, 'Art Gallery', '303 Cedar St', 200, 'contact@example.com', 2500.00),
(7, 'Community Center', '404 Walnut St', 300, 'contact@example.com', 800.00),
(8, 'Fairgrounds', '505 Oak St', 10000, 'contact@example.com', 4000.00),
(9, 'Fashion Mall', '606 Pine St', 500, 'contact@example.com', 2000.00),
(10, 'Luxury Hotel', '707 Elm St', 300, 'contact@example.com', 6000.00);

INSERT INTO VenueFacilities VALUES
(1, 'Conference rooms, auditorium'),
(2, 'Open space, stages'),
(3, 'Meeting rooms, offices'),
(4, 'Exhibition halls, booths'),
(5, 'Presentation rooms, coworking space'),
(6, 'Gallery space, studios'),
(7, 'Meeting rooms, event hall'),

(8, 'Outdoor space, pavilions'),
(9, 'Fashion show venues, retail spaces'),
(10, 'Ballrooms, conference rooms');

INSERT INTO Ticket VALUES
(1, 1, 'Regular', 100.00, 500, 250, 1),
(2, 1, 'VIP', 200.00, 200, 150, 2),
(3, 2, 'General Admission', 50.00, 1000, 700, 3),
(4, 2, 'VIP Pass', 100.00, 300, 200, 4),
(5, 3, 'Standard', 20.00, 150, 100, 5),
(6, 3, 'Premium', 50.00, 150, 100, 6),
(7, 4, 'General Entry', 10.00, 300, 200, 7),
(8, 4, 'Expo Plus', 25.00, 100, 50, 8),
(9, 5, 'Pitch Participant', 200.00, 50, 30, 9),
(10, 5, 'Observer Pass', 50.00, 100, 70, 10);

INSERT INTO Schedule VALUES
(1, 1, '2024-09-15', '09:00:00', 'Opening Keynote', 1, 1),
(2, 1, '2024-09-16', '13:00:00', 'Panel Discussion on AI Ethics', 2, 1),
(3, 1, '2024-09-17', '10:00:00', 'AI Applications Showcase', 3, 1),
(4, 2, '2024-07-20', '18:00:00', 'Headliner Concert', 4, 2),
(5, 2, '2024-07-21', '14:00:00', 'Battle of the Bands', 5, 2),
(6, 2, '2024-07-22', '11:00:00', 'Acoustic Sessions', 6, 2),
(7, 3, '2024-11-10', '09:30:00', 'Networking Breakfast', 7, 3),
(8, 3, '2024-11-10', '14:00:00', 'Business Roundtable Discussions', 8, 3),
(9, 4, '2024-05-05', '10:00:00', 'Health Expo Opening Ceremony', 9, 4),
(10, 4, '2024-05-06', '12:00:00', 'Fitness Demonstrations', 10, 4);

INSERT INTO Feedback VALUES
(1, 1, 1, 5, 'Great conference overall', '2024-09-17'),
(2, 1, 2, 4, 'Informative sessions', '2024-09-17'),
(3, 2, 3, 5, 'Amazing music performances', '2024-07-22'),
(4, 2, 4, 4, 'Good variety of food options', '2024-07-22'),
(5, 3, 5, 4, 'Good networking opportunities', '2024-11-10'),
(6, 3, 6, 5, 'Useful business insights', '2024-11-10'),
(7, 4, 7, 5, 'Lots of health-related products', '2024-05-06'),
(8, 4, 8, 4, 'Interesting fitness demonstrations', '2024-05-06'),
(9, 5, 9, 4, 'Innovative tech startup ideas', '2024-08-30'),
(10, 5, 10, 5, 'Well-organized event', '2024-08-30');

INSERT INTO Volunteer VALUES
(1, 1, 'Sarah Johnson', 'sarah@example.com', 'Weekends'),
(2, 1, 'Tom Smith', 'tom@example.com', 'Evenings'),
(3, 2, 'Emma Davis', 'emma@example.com', 'Weekends'),
(4, 2, 'Jack Wilson', 'jack@example.com', 'Evenings'),
(5, 3, 'Sophia Brown', 'sophia@example.com', 'Weekends'),

(6, 3, 'Daniel Taylor', 'daniel@example.com', 'Evenings'),
(7, 4, 'Olivia Miller', 'olivia@example.com', 'Weekends'),
(8, 4, 'James Johnson', 'james@example.com', 'Evenings'),
(9, 5, 'Ella Brown', 'ella@example.com', 'Weekends'),
(10, 5, 'Noah Wilson', 'noah@example.com', 'Evenings');

INSERT INTO VolunteerSkills VALUES
(1, 'AI'),
(2, 'Music'),
(3, 'Artist Support'),
(4, 'Networking'),
(5, 'Customer Service'),
(6, 'Communication'),
(7, 'Machine Learning'),
(8, 'Coding'),
(9, 'Event Management'),
(10, 'Tech Presentations');

INSERT INTO VolunteerTasks VALUES
(1, 'Event setup'),
(2, 'Usher'),
(3, 'Stage setup'),
(4, 'Security'),
(5, 'Greeting attendees'),
(6, 'Assisting with networking activities'),
(7, 'Event Assistance'),
(8, 'Distributing health-related information'),
(9, 'Assisting startups with presentations'),
(10, 'Managing event logistics');

Performed 20 SQL Queries:

1. Select events with their organizers:
   SELECT Event.EventName, Organizer.OrganizerName
   FROM Event
   JOIN Organizer ON Event.Organizer_ID = Organizer.OrganizerID;

EventName	OrganizerName
Conference on Artificial Intelligence	TechCon Events
Music Festival	MusicFest Productions
Business Networking Event	Business Networking Group
Health and Wellness Expo	Health Expo Organization
Tech Startup Pitch Competition	Tech Startup Association
Art Exhibition	Art Gallery Management
Educational Workshop on Finance	Finance Education Society
Food Truck Festival	Food Truck Association
Fashion Show	Fashion Event Organizers
Charity Gala Dinner	Charity Gala Committee

2. Select attendees with their events:
   SELECT Attendee.FirstName, Attendee.LastName, Event.EventName
   FROM Attendee
   JOIN Event ON Attendee.EventID = Event.EventID;

FirstName	LastName	EventName
Alice	Smith	Conference on Artificial Intelligence
Bob	Johnson	Music Festival
Charlie	Brown	Business Networking Event
David	Davis	Health and Wellness Expo
Emma	Wilson	Tech Startup Pitch Competition
Frank	Taylor	Art Exhibition
Grace	Miller	Educational Workshop on Finance
Hannah	Anderson	Food Truck Festival
Isaac	Thomas	Fashion Show
Jack	Brown	Charity Gala Dinner

3. Select speakers with their events:
   SELECT Speaker.SpeakerName, Event.EventName
   FROM Speaker
   JOIN Event ON Speaker.EventID = Event.EventID;

SpeakerName	EventName
John Doe	Conference on Artificial Intelligence
Emily White	Music Festival
David Green	Business Networking Event
Sarah Black	Health and Wellness Expo
Michael Brown	Tech Startup Pitch Competition
Sophie Green	Art Exhibition
William Wilson	Educational Workshop on Finance
Emma Miller	Food Truck Festival
Oliver Taylor	Fashion Show
Sophie Anderson	Charity Gala Dinner

4. Select venues with their events:
   SELECT Venue.VenueName, Event.EventName
   FROM Venue
   JOIN Event ON Venue.VenueID = Event.EventID;

VenueName	EventName
Convention Center	Conference on Artificial Intelligence
City Park	Music Festival
Business Center	Business Networking Event
Exhibition Center	Health and Wellness Expo
Innovation Hub	Tech Startup Pitch Competition
Art Gallery	Art Exhibition
Community Center	Educational Workshop on Finance
Fairgrounds	Food Truck Festival
Fashion Mall	Fashion Show
Luxury Hotel	Charity Gala Dinner

5. Select tickets with attendee information:
   SELECT Ticket.TicketType, Ticket.Price, Attendee.FirstName, Attendee.LastName
   FROM Ticket
   JOIN Attendee ON Ticket.AttendeeID = Attendee.AttendeeID;

TicketType	Price	FirstName	LastName
Regular	100.00	Alice	Smith
VIP	200.00	Bob	Johnson
General Admission	50.00	Charlie	Brown
VIP Pass	100.00	David	Davis
Standard	20.00	Emma	Wilson
Premium	50.00	Frank	Taylor
General Entry	10.00	Grace	Miller
Expo Plus	25.00	Hannah	Anderson
Pitch Participant	200.00	Isaac	Thomas
Observer Pass	50.00	Jack	Brown

6. Select schedules with event and venue information:
   SELECT Schedule.Date, Schedule.Time, Schedule.ActivitySessionName, Event.EventName, Venue.VenueName
   FROM Schedule
   JOIN Event ON Schedule.EventID = Event.EventID
   JOIN Venue ON Schedule.VenueID = Venue.VenueID;

Date	Time	ActivitySessionName	EventName	VenueName
2024-09-15	09:00:00	Opening Keynote	Conference on Artificial Intelligence	Convention Center
2024-09-16	13:00:00	Panel Discussion on AI Ethics	Conference on Artificial Intelligence	Convention Center
2024-09-17	10:00:00	AI Applications Showcase	Conference on Artificial Intelligence	Convention Center
2024-07-20	18:00:00	Headliner Concert	Music Festival	City Park
2024-07-21	14:00:00	Battle of the Bands	Music Festival	City Park
2024-07-22	11:00:00	Acoustic Sessions	Music Festival	City Park
2024-11-10	09:30:00	Networking Breakfast	Business Networking Event	Business Center
2024-11-10	14:00:00	Business Roundtable Discussions	Business Networking Event	Business Center
2024-05-05	10:00:00	Health Expo Opening Ceremony	Health and Wellness Expo	Exhibition Center
2024-05-06	12:00:00	Fitness Demonstrations	Health and Wellness Expo	Exhibition Center

7. Select feedback with event and attendee information:
   SELECT Feedback.Rating, Feedback.Comments, Event.EventName, Attendee.FirstName, Attendee.LastName
   FROM Feedback
   JOIN Event ON Feedback.EventID = Event.EventID
   JOIN Attendee ON Feedback.AttendeeID = Attendee.AttendeeID;

Rating	Comments	EventName	FirstName	LastName
5	Great conference overall	Conference on Artificial Intelligence	Alice	Smith
4	Informative sessions	Conference on Artificial Intelligence	Bob	Johnson
5	Amazing music performances	Music Festival	Charlie	Brown
4	Good variety of food options	Music Festival	David	Davis
4	Good networking opportunities	Business Networking Event	Emma	Wilson
5	Useful business insights	Business Networking Event	Frank	Taylor
5	Lots of health-related products	Health and Wellness Expo	Grace	Miller
4	Interesting fitness demonstrations	Health and Wellness Expo	Hannah	Anderson
4	Innovative tech startup ideas	Tech Startup Pitch Competition	Isaac	Thomas
5	Well-organized event	Tech Startup Pitch Competition	Jack	Brown

8. Insert a new event:
   INSERT INTO Event (EventID, EventName, EventDescription, StartDate, EndDate, Location, Organizer_ID, Category, RegistrationDeadline, MaximumCapacity, CurrentAttendance, Status, Speaker_ID)
   VALUES (11, 'Technology Conference', 'Annual conference on technology', '2024-10-20', '2024-10-22', 'Convention Center', 5, 'Technology', '2024-10-01', 400, 200, 'Active', 5);

EventID	EventName	EventDescription	StartDate	EndDate	Location	Organizer_ID	Category	RegistrationDeadline	MaximumCapacity	CurrentAttendance	Status	Speaker_ID
1	Conference on Artificial Intelligence	Annual conference discussing advancements in AI	2024-09-15	2024-09-17	Convention Center	1	Technology	2024-09-01	500	250	Active	1
2	Music Festival	Three-day music festival featuring various artists	2024-07-20	2024-07-22	City Park	2	Music	2024-07-01	1000	700	Active	2
3	Business Networking Event	Networking event for professionals from variou...	2024-11-10	2024-11-10	Business Center	3	Business	2024-11-01	150	100	Active	3
4	Health and Wellness Expo	Exhibition promoting health and wellness produc...	2024-05-05	2024-05-06	Exhibition Center	4	Health	2024-04-15	300	200	Active	4
5	Tech Startup Pitch Competition	Competition for tech startups to pitch their idea...	2024-08-30	2024-08-30	Innovation Hub	5	Technology	2024-08-15	50	30	Active	5
6	Art Exhibition	Exhibition showcasing works of contemporary a...	2024-10-25	2024-10-27	Art Gallery	6	Art	2024-10-01	200	150	Active	6
7	Educational Workshop on Finance	Workshop providing financial literacy education	2024-06-12	2024-06-12	Community Center	7	Education	2024-06-01	80	50	Active	7
8	Food Truck Festival	Festival featuring a variety of food trucks	2024-04-08	2024-04-09	Fairgrounds	8	Food	2024-03-20	400	300	Active	8
9	Fashion Show	Fashion event showcasing latest trends in clothi...	2024-09-01	2024-09-01	Fashion Mall	9	Fashion	2024-08-15	150	100	Active	9
10	Charity Gala Dinner	Fundraising dinner to support a charitable cause	2024-11-28	2024-11-28	Luxury Hotel	10	Charity	2024-11-15	120	80	Active	10
11	Technology Conference	Annual conference on technology	2024-10-20	2024-10-22	Convention Center	5	Technology	2024-10-01	400	200	Active	5
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

9. Update the status of an event:
   UPDATE Event
   SET Status = 'Cancelled'
   WHERE EventID = 11;

EventID	EventName	EventDescription	StartDate	EndDate	Location	Organizer_ID	Category	RegistrationDeadline	MaximumCapacity	CurrentAttendance	Status	Speaker_ID
1	Conference on Artificial Intelligence	Annual conference discussing advancements in AI	2024-09-15	2024-09-17	Convention Center	1	Technology	2024-09-01	500	250	Active	1
2	Music Festival	Three-day music festival featuring various artists	2024-07-20	2024-07-22	City Park	2	Music	2024-07-01	1000	700	Active	2
3	Business Networking Event	Networking event for professionals from variou...	2024-11-10	2024-11-10	Business Center	3	Business	2024-11-01	150	100	Active	3
4	Health and Wellness Expo	Exhibition promoting health and wellness produc...	2024-05-05	2024-05-06	Exhibition Center	4	Health	2024-04-15	300	200	Active	4
5	Tech Startup Pitch Competition	Competition for tech startups to pitch their idea...	2024-08-30	2024-08-30	Innovation Hub	5	Technology	2024-08-15	50	30	Active	5
6	Art Exhibition	Exhibition showcasing works of contemporary a...	2024-10-25	2024-10-27	Art Gallery	6	Art	2024-10-01	200	150	Active	6
7	Educational Workshop on Finance	Workshop providing financial literacy education	2024-06-12	2024-06-12	Community Center	7	Education	2024-06-01	80	50	Active	7
8	Food Truck Festival	Festival featuring a variety of food trucks	2024-04-08	2024-04-09	Fairgrounds	8	Food	2024-03-20	400	300	Active	8
9	Fashion Show	Fashion event showcasing latest trends in clothi...	2024-09-01	2024-09-01	Fashion Mall	9	Fashion	2024-08-15	150	100	Active	9
10	Charity Gala Dinner	Fundraising dinner to support a charitable cause	2024-11-28	2024-11-28	Luxury Hotel	10	Charity	2024-11-15	120	80	Active	10
11	Technology Conference	Annual conference on technology	2024-10-20	2024-10-22	Convention Center	5	Technology	2024-10-01	400	200	Canc...	5
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

10. Select volunteers with their assigned tasks:
```
SELECT Volunteer.Name, VolunteerTasks.AssignedTask
FROM Volunteer
JOIN VolunteerTasks ON Volunteer.VolunteerID = VolunteerTasks.VolunteerID;
```

Name	AssignedTask
Sarah Johnson	Event setup
Tom Smith	Usher
Emma Davis	Stage setup
Jack Wilson	Security
Sophia Brown	Greeting attendees
Daniel Taylor	Assisting with networking activities
Olivia Miller	Event Assistance
James Johnson	Distributing health-related information
Ella Brown	Assisting startups with presentations
Noah Wilson	Managing event logistics

11.Retrieve all events along with their respective organizers.
```
SELECT Event.EventName, Organizer.OrganizerName
FROM Event
JOIN Organizer ON Event.Organizer_ID = Organizer.OrganizerID;
```

EventName	OrganizerName
Conference on Artificial Intelligence	TechCon Events
Music Festival	MusicFest Productions
Business Networking Event	Business Networking Group
Health and Wellness Expo	Health Expo Organization
Tech Startup Pitch Competition	Tech Startup Association
Art Exhibition	Art Gallery Management
Educational Workshop on Finance	Finance Education Society
Food Truck Festival	Food Truck Association
Fashion Show	Fashion Event Organizers
Charity Gala Dinner	Charity Gala Committee

12.Retrieve the top 3 events with the highest number of attendees.
```
SELECT Event.EventName, COUNT(Attendee.AttendeeID) AS AttendeeCount
FROM Event
LEFT JOIN Attendee ON Event.EventID = Attendee.EventID
GROUP BY Event.EventName
ORDER BY AttendeeCount DESC
LIMIT 3;
```

Conference on Artificial Intelligence	1
Music Festival	1
Business Networking Event	1

13.Retrieve the events along with their organizers where the organizer's name contains the word "Event" and order them by event start date.

```
SELECT Event.EventName, Organizer.OrganizerName
FROM Event
JOIN Organizer ON Event.Organizer_ID = Organizer.OrganizerID
WHERE Organizer.OrganizerName LIKE '%Event%'
ORDER BY Event.StartDate;
```

EventName	OrganizerName
Fashion Show	Fashion Event Organizers
Conference on Artificial Intelligence	TechCon Events

14.Calculate the total number of tickets sold for each event.

```
SELECT Event.EventName, SUM(Ticket.NumberSold) AS TotalTicketsSold
FROM Event
LEFT JOIN Ticket ON Event.EventID = Ticket.EventID
GROUP BY Event.EventName;
```

EventName	TotalTicketsS...
Conference on Artificial Intelligence	400
Music Festival	900
Business Networking Event	200
Health and Wellness Expo	250
Tech Startup Pitch Competition	100

15. Retrieve the events along with the number of volunteers assigned to each event.

```
SELECT Event.EventName, (
    SELECT COUNT(*)
    FROM Volunteer
    WHERE Volunteer.Event_ID = Event.EventID
) AS VolunteerCount
FROM Event;
```

EventName	VolunteerCou...
Conference on Artificial Intelligence	2
Music Festival	2
Business Networking Event	2
Health and Wellness Expo	2
Tech Startup Pitch Competition	2
Art Exhibition	0
Educational Workshop on Finance	0
Food Truck Festival	0
Fashion Show	0
Charity Gala Dinner	0

16.Calculate the total revenue generated from ticket sales for each event.

```
SELECT Event.EventName, SUM(Ticket.Price * Ticket.NumberSold) AS TotalRevenue
FROM Event
JOIN Ticket ON Event.EventID = Ticket.EventID
GROUP BY Event.EventName;
```

EventName	TotalRevenue
Conference on Artificial Intelligence	55000.00
Music Festival	55000.00
Business Networking Event	7000.00
Health and Wellness Expo	3250.00
Tech Startup Pitch Competition	9500.00

17. Retrieve the event with the highest number of attendees.

```
SELECT EventName, CurrentAttendance
FROM Event
WHERE CurrentAttendance = (
   SELECT MAX(CurrentAttendance)
   FROM Event
);
```

EventName	CurrentAttendan...
Music Festival	700

18.Retrieve the distinct categories of events along with the count of events in each category.

```
SELECT Event.Category, COUNT(DISTINCT Event.EventID) AS EventCount
FROM Event
GROUP BY Event.Category;
```

Category	EventCount
Art	1
Business	1
Charity	1
Education	1
Fashion	1
Food	1
Health	1
Music	1
Technology	2

19.Retrieve the events along with the average rating received by each event.

```
SELECT Event.EventName, AVG(Feedback.Rating) AS AverageRating
FROM Event
LEFT JOIN Feedback ON Event.EventID = Feedback.EventID
GROUP BY Event.EventName;
```

Conference on Artificial Intelligence	4.5000
Music Festival	4.5000
Business Networking Event	4.5000
Health and Wellness Expo	4.5000
Tech Startup Pitch Competition	4.5000
Art Exhibition	NULL
Educational Workshop on Finance	NULL
Food Truck Festival	NULL
Fashion Show	NULL
Charity Gala Dinner	NULL

20.Retrieve the events along with their respective organizers, but only for events organized by organizations with "LLC" in their name.

```
SELECT Event.EventName, Organizer.OrganizerName
FROM Event
JOIN Organizer ON Event.Organizer_ID = Organizer.OrganizerID
WHERE Organizer.OrganizationName LIKE '%LLC%';
```

EventName	OrganizerName
Business Networking Event	Business Networking Group
Art Exhibition	Art Gallery Management

VI. Project demonstration

Tools used:

ER Diagram: Draw.io

Software used:

Database creation:MySQL

Reference Websites:

https://www.geeksforgeeks.org/normal-forms-in-dbms/

https://www.javatpoint.com/dbms-relational-model-concept

https://www.javatpoint.com/dbms-er-model-concept

VII. Self -Learning beyond classroom

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Developing complex relational models: Till now we were working with small relational models with few entities and attributes but while working on the project we got an idea about at what scale relational models can be made and how complex they can be.

Normalization: As we were working with a larger number of entities and attributes it was necessary for us to take performance into consideration. As we know as the Database scales it causes hindrance in the speed and performance of the program thus ruining the user experience thus with normalization we tend to remove the redundancies in the relational model in order to improve performance.

VIII. Learning from the Project

- Hands-On Experience: It has provided practical, hands-on experience in designing, developing, and implementing a complex software system, which has been valuable for us studying computer science or software engineering.

- Problem-Solving Skills: We encountered various challenges throughout the project, such as designing the database schema, implementing business logic, and ensuring scalability and performance. This helped improve our problem-solving skills.

- Understanding of Database Management: We gained a better understanding of database management concepts, such as normalization, relationships, and data manipulation, by designing the database schema for the event management system.

- Domain Knowledge: We have gained domain knowledge in event management, including understanding the requirements and challenges involved in organizing and managing events, which can be applied to other domains as well.

Overall, developing an event management system project can be a rewarding and enriching experience for students, offering valuable skills and knowledge that can help them succeed in their academic and professional endeavors.

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IX. Challenges Faced

The challenges that we faced in creating the event management system, specifically in designing its ER diagram, creating its relational model, and writing the SQL queries are

- Complexity of Relationships: Managing the relationships between entities can be challenging, especially in a system with many interrelated entities like an event management system. Ensuring that the relationships are properly defined and maintained is crucial.

- Normalization: Normalizing the database to reduce redundancy and improve data integrity can be challenging, especially when dealing with complex relationships between entities.

- Data Integrity: Ensuring data integrity, such as enforcing constraints and ensuring that data is accurate and consistent, can be challenging, especially in a system with many interrelated entities.

- Query Complexity: Writing complex SQL queries to retrieve data from multiple tables can be challenging, especially when dealing with complex relationships and business logic.

- Data Migration: Migrating data from an existing system to a new event management system can be challenging, especially when dealing with data that is stored in different formats or structures.

  Overall, designing and implementing the event management system was challenging due to the complexity of the requirements and the need to balance performance, scalability, security, and data integrity.

X. Conclusion

The key takeaways from our topic of event management system are:

- Efficiency: Event management systems streamline the planning, organization, and execution of events, making the process more efficient for organizers and attendees.

- Centralization: These systems centralize all event-related information, including schedules, attendee details, and speaker information, in one place, reducing the chances of miscommunication or errors.

- Automation: They automate various tasks, such as registration, payment processing, and communication, saving time and effort for organizers and attendees.

- Improved Communication: Event management systems facilitate communication between organizers, attendees, speakers, sponsors, and volunteers, ensuring everyone is informed and updated.

- Data Management: These systems help manage and analyze data related to events, such as attendee feedback and performance metrics, providing valuable insights for future events.

- Scalability: A well-designed event management system can scale to accommodate events of varying sizes and complexities, adapting to changing requirements and demands.

In conclusion, event management systems play a crucial role in organizing successful events by improving efficiency, centralizing information, automating tasks, and enhancing communication. Despite the challenges involved, a well-designed and implemented system can greatly simplify the event planning process and enhance the overall experience for organizers and attendees.