EVENT MANAGEMENT SYSTEM

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1. Abstract:

The Online Event Management System changes how events are planned and enjoyed in today's fast-moving world. In a time where technology and innovation are key, this system offers a new way to organize events, making it easier and more efficient. It's like a digital toolbox for event organizers, helping them with everything from creating event pages to selling tickets and managing attendees. This system is designed to be user-friendly, so both organizers and attendees can use it without any hassle. With easy-to-use menus, smooth connections, and strong security features, it aims to make event planning and attending a breeze for everyone involved. In a world where being connected and having things easy is important, the Online Event Management System gives event organizers the tools they need to create great events and make sure attendees have a fantastic time.

2. Objective and Scope

The objective of the Online Event Management System is to simplify the process of planning, organizing, and managing various types of events. It aims to provide event organizers with a user-friendly platform where they can create, customize, and promote their events efficiently. Additionally, the system seeks to enhance the experience for attendees by offering easy registration and ticketing options, along with timely updates and communication.

By centralizing event-related tasks and information, the system aims to streamline event logistics, increase engagement, and ultimately, contribute to the success of both small-scale gatherings and large-scale conferences.

It provides ways for event organizers and attendees to connect and interact, both before and during events. Through features like chat rooms the system encourages everyone to share ideas and communicate with each other. This helps make events more engaging and enjoyable for everyone involved.

The scope of the product includes the following basic features:

- The system will work for various types of events, from big conferences to small gatherings, making it useful for different kinds of occasions.
- It will have different roles for different users, like event organizers who create events and attendees who sign up for them.
- It will have features like event creation, attendee registration, ticket purchasing, and communication tools built into it.

- The system will be easy to use for both event organizers and attendees, even for people who aren't very tech-savvy.
- It's mainly focused on helping people manage events smoothly, so it won't include features unrelated to event planning and organization.
- It will be an online platform, accessible through the internet, making it convenient for users to access from anywhere with an internet connection.

3. Project End Users

The project end users are the individuals or groups who will interact with and benefit from the event management system.

3.1 Event Organizers:

Event organizers are individuals or organizations responsible for planning, coordinating, and executing events. They use the system to create event listings, manage event details (such as date, time, location, and description), set up ticketing options, track attendee registrations, communicate with attendees, and oversee event logistics

3.2 Attendees:

Attendees are individuals who participate in events organized through the system. They use the system to browse upcoming events, register for events, purchase event tickets, receive event-related notifications and updates, communicate with event organizers, and provide feedback after attending events

4. Modules:

4.1 Login to the system

Each and every user should be authenticated with a User Name and Password to login into the system.

Validations for User Name and Password.

User Name: It accepts only Alphabets, Numbers, Dot (.) symbol and Underscore (_) symbol.

Password: It can be anything of the users' choice.

4.2 Event Creation and Management

• This allows the organizers to create and customize event listings with details such as date, time, location, description, and images and makes easy access for the attendees to event details, including schedule, agenda, speakers, and venue information.

• This feature helps organizers get their events started smoothly, making it easier for them to organize successful events that people will want to attend.

4.3 Registration and Ticketing

• The Registration and Ticketing feature in an Online Event Management System helps people sign up and get tickets for events easily. It helps organizers to manage attendee registrations, including setting up ticket types, pricing, and capacity limits.

• Attendees can use the system to register for events and choose the type of tickets they want, like regular or VIP. They can pay for their tickets securely online using different payment methods. They can buy ticket without any hassle making it more convenient for everyone involved.

4.4Event Analytics:

This feature gives them important information about things like how many tickets have been sold, who's coming to the event, and where they're coming from. This data helps organizers see which parts of their event are popular and which ones might need a little more attention.

They can use this insight to make smart decisions that improve the event and make it even better for everyone involved. With Event Analytics, organizers can track their event's success and make adjustments to ensure it's a hit with attendees.

4.5 Event Reminders and Notifications:

The Event Reminders and Notifications feature is like having a friendly assistant who helps you remember important things about an event. It sends you messages or alerts to remind you about upcoming events, changes to the schedule, or any other important information you need to know. These reminders can come through email, text messages, or notifications on your phone or computer.

They help make sure you don't forget about an event and keep you informed about what's happening. With Event Reminders and Notifications, you can stay on top of everything and make sure you don't miss out on any exciting events.

4.6 Feedback and Surveys:

After the event, organizers can send out surveys or feedback forms to attendees to hear about their experiences. It's a way to find out what attendees liked, what they didn't like, and what could be improved for next time. This feedback helps organizers understand what worked well and what could be better, so they can make future events even more enjoyable for everyone. It's like getting advice from friends to throw an even better party next time.

5. Functional and Non-Functional Requirements:

5.1 Functional Requirements:

User Registration: The system should allow users to register as organizers or attendees. Organizers should provide basic information such as name, email, and organization. Attendees should provide necessary details for event registration, including name, email, and contact information.

Event Creation: Organizers should be able to create new event listings within the system. They should input event details such as title, description, date, time, location, and event type. Organizers may upload images or multimedia content to enhance event listings.

Ticket Management: Organizers can set different ticket types, prices, and availability. They should specify ticket quantities, sale start and end dates, and any limitations

Attendee Registration: Attendees should be able to register for events and purchase tickets online through the system. They should select desired ticket types, enter attendee information, and proceed with payment.

Event Scheduling: Organizers should have access to event management tools to monitor registrations, ticket sales, and attendee lists. They should be able to make changes to event details, update ticket availability, and manage attendee inquiries..

Payment Processing: The system securely processes online payments for ticket purchases. Attendees can pay using credit or debit cards, UPI , or other methods..

Event Analytics: Provide insights into event performance with analytics on ticket sales, attendance rates, etc.

5.2 NON-Functional Requirements:

User Interface: The system should have a simple and intuitive interface for easy navigation. It should be visually appealing and user-friendly for both organizers and attendees.

Security: The system should ensure the security and privacy of user data. It should use encryption to protect sensitive information like payment details.

Reliability: The system should be available and reliable, with minimal downtime for maintenance. It should have backup systems in place to prevent data loss in case of failures.

Scalability: The system should be scalable to accommodate growth in the number of users and events. It should handle increased traffic without significant performance degradation.

Accessibility: The system should be accessible to users with disabilities, following accessibility standards. It should support screen readers and provide alternative text for images.

Compatibility: The system should be compatible with various devices and web browsers. It should work seamlessly on desktops, laptops, tablets, and smartphones.

Documentation: The system should have comprehensive documentation for users and administrators. It should include user guides, FAQs, and troubleshooting tips.

Support: The system should provide customer support to assist users with issues or questions. Support channels could include email, live chat, or phone support.

Regulatory Compliance: The system should comply with relevant regulations and standards for online transactions and data protection. It should adhere to laws like GDPR (General Data Protection Regulation) for handling personal data.

6. lower-Level Design:

In the lower-level design of the Online Event Management System, we focus on detailed architectural and implementation considerations for both the frontend and backend components. On the frontend, we adopt a component-based architecture to facilitate modularity and reusability. This allows for the creation of reusable components for different parts of the system, such as event listings, registration forms, and ticket purchasing interfaces. Asynchronous data retrieval from the backend is implemented to ensure smooth and responsive user experiences. For the backend architecture, we follow a modular approach with separate modules for key functionalities such as event management, attendee management, and ticket management. Middleware functions are implemented to handle request processing, including authentication, authorization, and error handling. The database schema is designed to represent entities such as events, attendees, and tickets, with normalized tables and appropriate relationships between them. This ensures efficient data storage and retrieval and supports complex queries required for reporting and analytics. Authentication and authorization mechanisms are implemented using session cookies for user authentication. Role-based access control (RBAC) is employed to provide fine-grained control over user permissions, allowing organizers to manage event details and attendees to purchase tickets securely. Modules like event management and ticket management include controllers, routes, and service functions to handle CRUD operations, business logic, and validation. These modules encapsulate the core functionalities of the system and promote code maintainability and scalability. Real-time communication features, such as event updates and attendee notifications, are enabled through WebSocket connections.

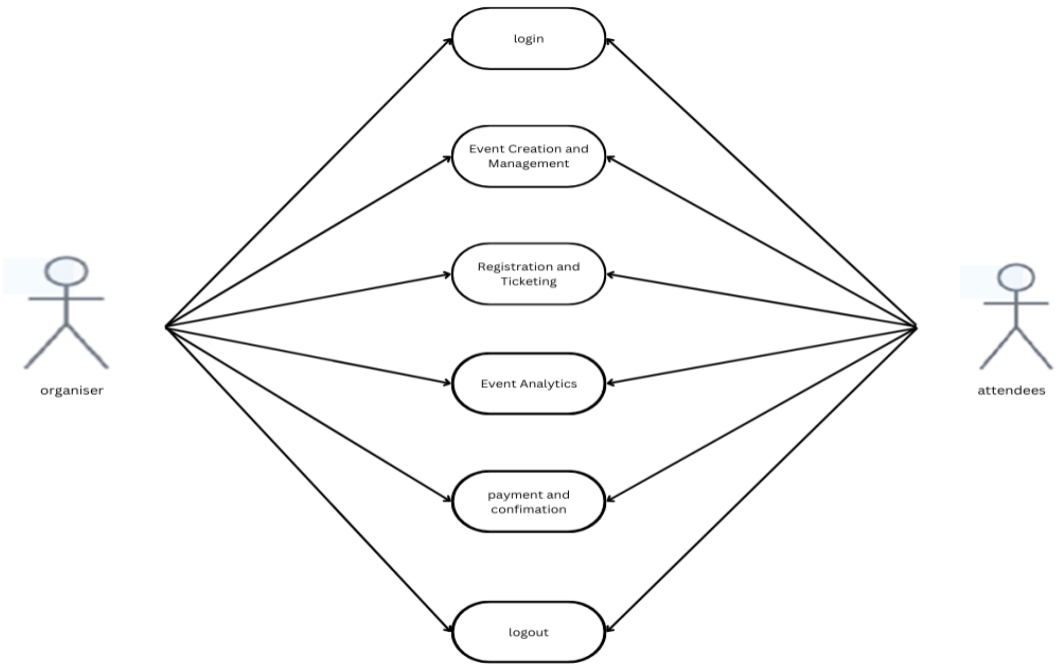
7. Higher-Level Design:

The high-level design of the Online Event Management System provides an overview of its architecture and key components, emphasizing functionality and interaction between various layers. At the forefront is the User Interface (UI), which serves as the primary interaction point for both event organizers and attendees. The UI encompasses features such as event listings, registration forms, ticket purchasing interfaces, and account management sections, all designed with responsiveness and accessibility in mind to ensure a smooth user experience across different devices and screen sizes. Beneath the UI lies the Backend Services layer, which acts as the engine of the system, handling data processing, business logic, and communication with external resources. Here, modules for event management, attendee registration, ticketing, authentication, and authorization are implemented using server-side frameworks like Node.js, Python (Django/Flask), or Java (Spring Boot), providing

robust support for building RESTful APIs. The Database Management component stores and organizes data related to events, attendees, tickets, and user profiles within a relational database management system (RDBMS) such as MySQL, PostgreSQL, or MongoDB. Data normalization ensures efficient storage and retrieval, while relationships between tables maintain data integrity. Security features, including authentication and authorization mechanisms, safeguard the system by verifying user identities and controlling access to resources. Authentication methods like JSON Web Tokens (JWT) or OAuth2 provide secure user verification, while role-based access control (RBAC) assigns permissions based on user roles. External Integrations with payment gateways, email service providers, and social media platforms enhance system functionality by enabling seamless communication and data exchange. Load balancing techniques, caching mechanisms, and monitoring/logging tools further optimize system performance, ensuring scalability, reliability, and efficient management of events.

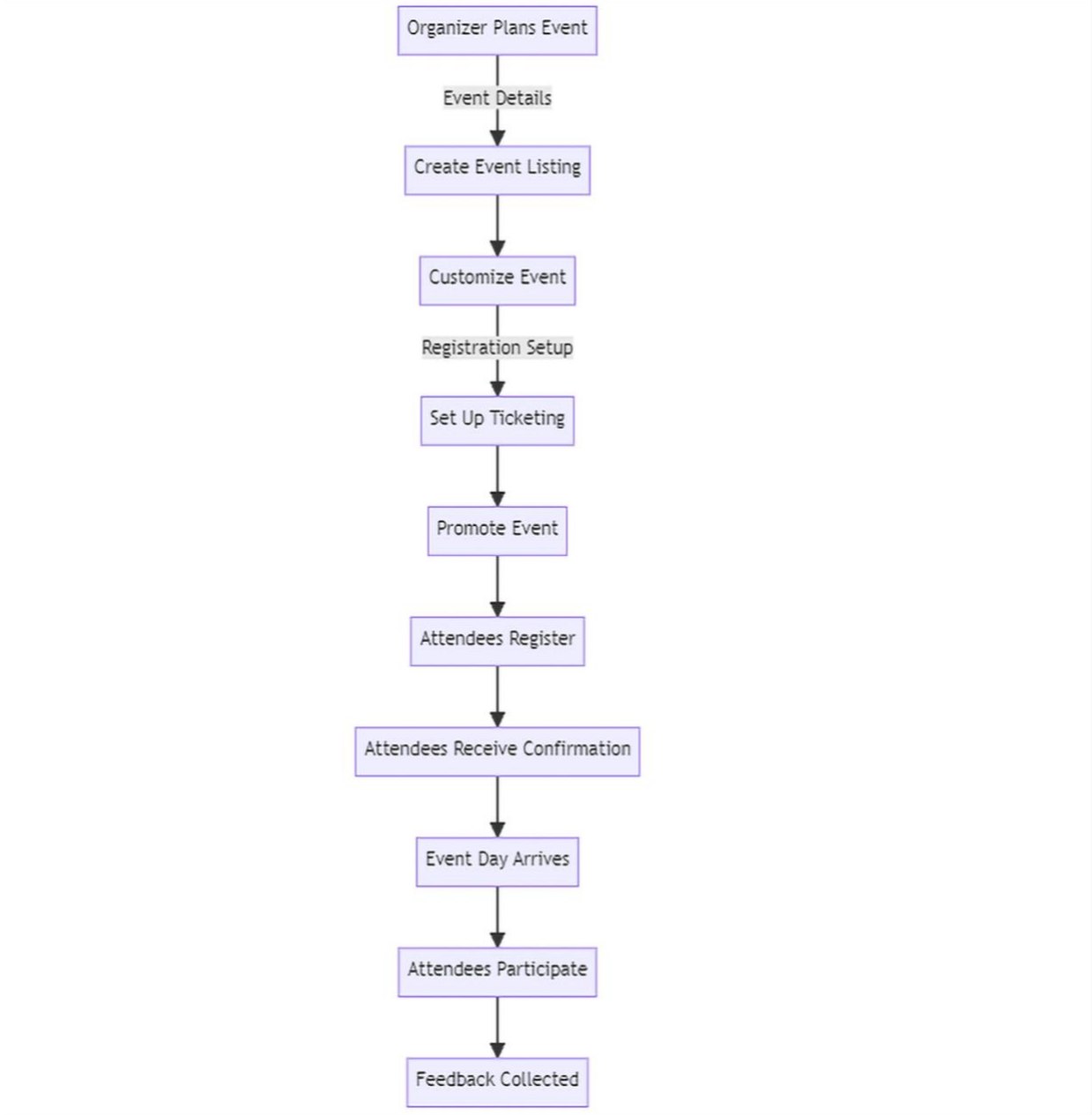
8. Diagrams:

8.1 Use Case Diagram:

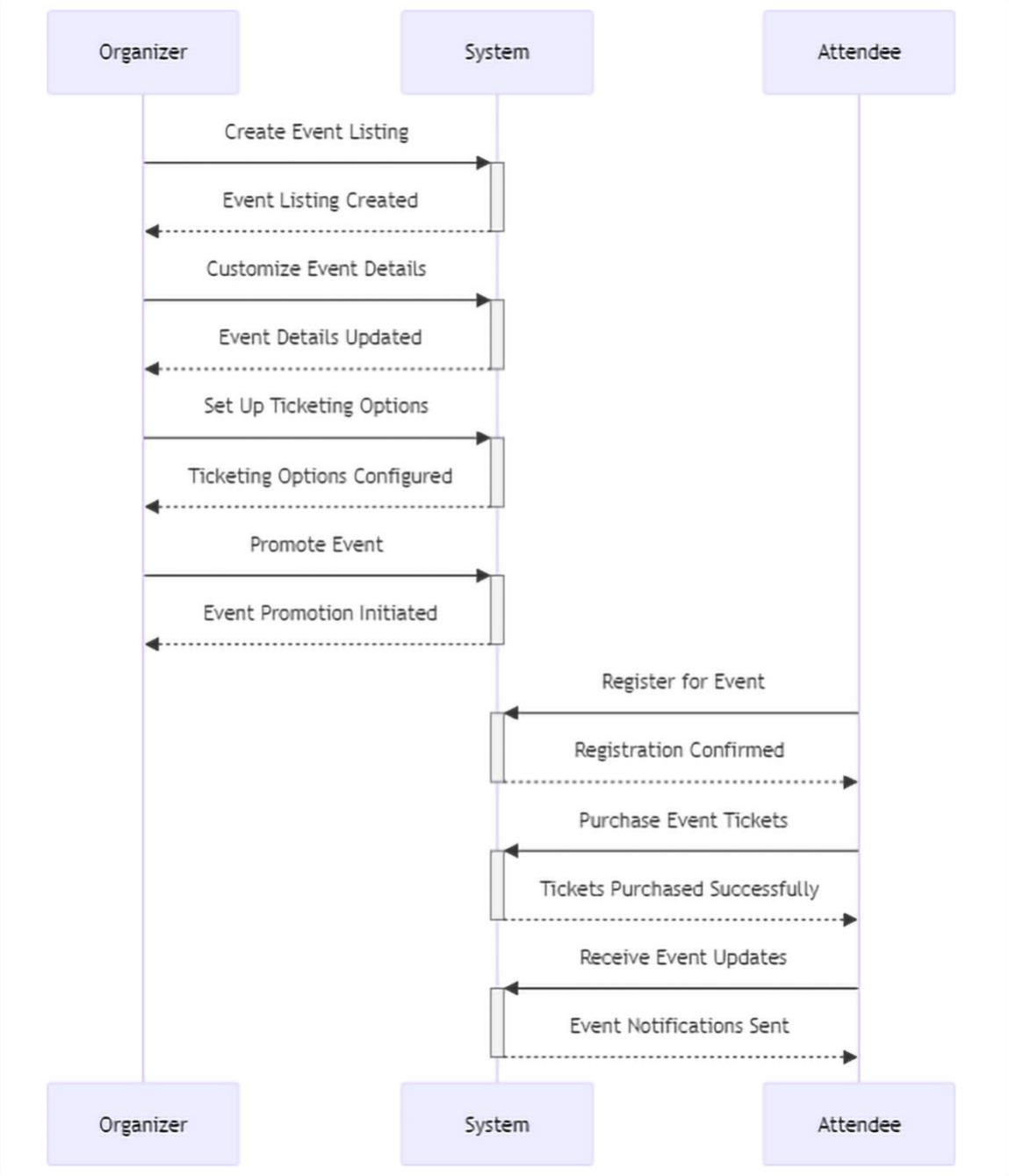


Use case diagram for event management system

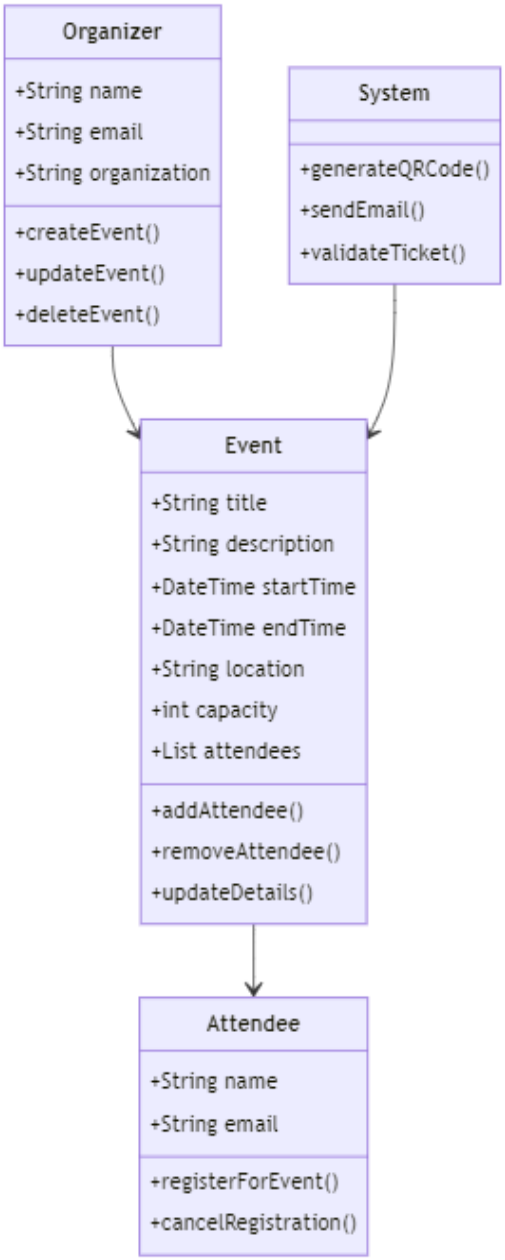
8.2 Flow Diagram:



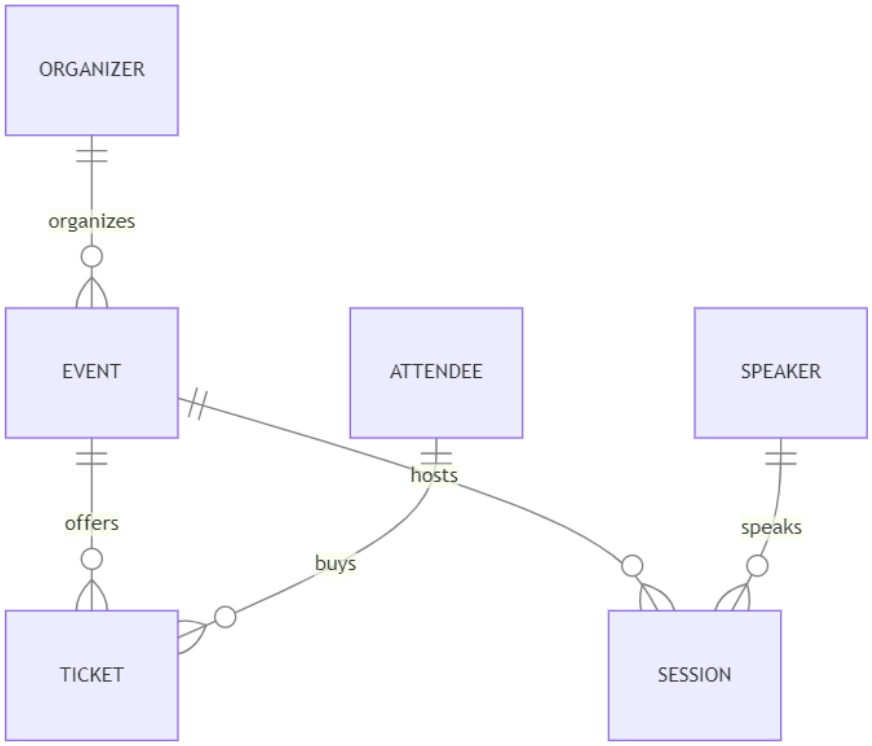
8.3 Sequence Diagram:



8.4 Class Diagram:



9. ER Diagrams:



10. Test Cases:

The Test cases is derived from the Requirements, Functional Specifications and Detailed Design Specification.

Test Case	Test Purpose	Test Condition	Expected Outcome	Actual Result
Creating event	Verify that event organizers can create a new event successfully.	User is logged into the Online Event Management System. User has access rights to create events.	After submitting the event creation form, a new event should be created and added to the system.	The event creation form submitted successfully, and a new event was added to the system.

Attendee Registration	Ensure that attendees can register for an event.	User is logged into the Online Event Management System. The event for which the attendee wants to register is active and has available spots.	After submitting the registration form, the attendee should be successfully registered for the event.	The attendee registration form submitted successfully, and the attendee was registered for the event.
Ticket Purchasing	Verify that ticket purchasing process works as expected.	User is logged into the Online Event Management System. The event for which the user wants to purchase tickets is active and has available tickets.	After completing the ticket purchasing process, the user should receive a confirmation of the ticket purchase.	The ticket purchasing process completed successfully, and the user received a confirmation of the ticket purchase.
Event Editing	Ensure that event details can be edited by organizers.	User is logged into the Online Event Management System as an organizer. The event for which details need to be edited is already created.	After editing the event details and saving changes, the updated information should reflect correctly in the system.	The event details were successfully edited, and the changes were reflected accurately in the system.
Event Reminders	Verify that attendees receive event reminders.	User is logged into the Online Event Management System. The event for which the attendee is registered is upcoming.	The attendee should receive timely event reminders via email or notification.	The attendee received event reminders as expected, either via email or notification.
Event Deletion	To ensure that event organizers can delete events when necessary.	User is logged into the Online Event Management System as an organizer. The	After confirming the deletion, the event should be	The event deletion process completed successfully, and the

		event to be deleted exists in the system.	permanently removed from the system.	event was removed from the system.
Ticket Availability Check	To verify that the system accurately displays ticket availability for events.	User is browsing the event listing on the Online Event Management System. The event being viewed has available tickets for purchase.	The system should display the correct number of available tickets for the event, updating in real-time as tickets are purchased.	The system accurately displayed the available tickets for the event, and the count updated in real-time during ticket purchases.
User Authentication	To ensure that only authenticated users can access protected resources.	User attempts to access restricted features of the Online Event Management System. The user is not logged into the system or provides incorrect credentials.	Access to the restricted features should be denied until the user successfully logs in or provides valid credentials.	The system correctly prompted the user for authentication, denying access to restricted features until valid credentials were provided.
Event Search Functionality	To verify that users can search for events based on specific criteria.	User is on the event listing page of the Online Event Management System. The system provides a search bar or filters for event search.	The system should return accurate search results matching the user's criteria, displaying relevant events.	The system successfully returned search results matching the user's criteria, displaying relevant events based on the search query.
Event Feedback Submission	To ensure that attendees can submit feedback for events they have attended.	User is logged into the Online Event Management System as an attendee. The event for which feedback is to be submitted has concluded.	After submitting the feedback form, the attendee's feedback should be recorded and stored for event evaluation purposes.	The attendee successfully submitted feedback for the event, and the feedback was recorded and stored in the system for evaluation.