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Graduation Project Report

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

In today's digital age, technology plays a key role in connecting people and bringing communities together. Event planning and discovery, which are super important for social interaction, often happen across different platforms, making things tricky for both event organizers and attendees. Local communities, especially, could really benefit from a single place to promote events and boost attendance. This is where the idea of a unified platform comes in—a place that helps people discover and plan events, strengthening social connections and creating a richer cultural experience.

1.1.1 Local Community Event Hub

The Local Community Event Hub, or EventHub, was created to solve this problem. EventHub is a web app that makes event planning and discovery super easy. Users can create, manage, and promote events in one spot. Attendees, on the other hand, can search for events they're into and connect with organizers easily. The platform is all about linking local residents, businesses, and organizations to help build a lively and connected community.

1.2 Objectives

The main goal of EventHub is to make event management simple and fun to use. Here are the specific objectives:

- Build a user-friendly interface for creating and finding events.
- Make it easy for organizers to manage event details.
- Add search and filter options so attendees can quickly find what they're looking for.
- Use geolocation to accurately map event locations.
- Ensure secure user authentication and role-based access control.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter looks at the different methods and technologies used to create a web-based event management platform like EventHub. It also reviews some popular event platforms, like Eventbrite and Meetup, to understand what they do well and where they fall short. This will help explain how EventHub takes inspiration from these platforms but focuses on fixing the issues that affect smaller, local communities. By exploring the strengths and weaknesses of existing solutions, this section shows how EventHub can be improved to better serve local events and community organizers.

2.2 Existing Solutions

Eventbrite and Meetup are two of the most well-known platforms used for managing events. Eventbrite is great for bigger events like conferences, concerts, and festivals, offering tools for things like ticket sales and event promotion. Meetup, on the other hand, focuses more on helping people find and join local groups or meetups based on shared interests. While both platforms work well for their intended purposes, they don't always meet the needs of smaller, local communities, especially when it comes to hosting informal or community-driven events.

EventHub takes ideas from both of these platforms but aims to solve some of their problems. For example, Eventbrite can feel too complicated for smaller events, and Meetup can lack important features like better ticketing options or ways to promote events effectively. EventHub focuses on making event management easier for smaller groups, like local clubs or non-profit organizations, by offering a simpler and more intuitive platform. The goal is to make it easy for people to create and find local events without needing to deal with unnecessary complexity.

2.3 Technologies in Web Application Development

To build a platform like EventHub, it's important to choose the right mix of technologies for both the frontend (the part users interact with) and the backend (the part that handles all the logic and data). Modern web apps rely on both frontend and backend technologies to ensure a smooth, fast, and reliable experience for users.

For the frontend of EventHub, I decided to use React. React is a popular JavaScript library used to build user interfaces that are interactive and responsive. React is great because it makes it easy to create dynamic pages that update without needing to reload, which is perfect for an event platform where you want things like event listings, user registrations, and updates to happen in real-time.

On the backend, Spring Boot was chosen for its ability to create powerful and secure applications. Spring Boot helps with building a server that can handle requests from the frontend, such as event registration or updating event details. It also makes it easier to organize all the backend code, which is important for keeping the system running smoothly. Spring Boot also works well with databases, making it a solid choice for a platform that needs to manage lots of data, like event details, user accounts, and tickets.

For storing all the information, EventHub uses MySQL, a relational database system. MySQL helps keep everything organized and makes it easy to store, retrieve, and manage data like user profiles, event listings, and ticket information. Using a database like MySQL ensures that the platform can handle lots of data without slowing down.

By using React, Spring Boot, and MySQL, EventHub takes advantage of modern technologies that ensure the platform is fast, reliable, and easy to maintain. These technologies also provide the flexibility to grow the platform as more users join and more events are added.

CHAPTER THREE: METHODOLOGY

3.1 Research Method

I used the Agile methodology for EventHub. This meant working in small, manageable phases while constantly getting feedback. Here's how it went:

- **Planning and Research:** Setting goals, studying similar platforms, and defining the project's scope.
- **Technical Design:** Choosing the tech stack and designing database structures.
- **Frontend & Backend Development:** Building key features like user authentication, event management, and search functionality.
- **Testing & Deployment:** Thorough testing followed by deploying the app to a cloud platform.

3.2 Tools and Technologies

- **Frontend:** React, HTML, CSS, JavaScript
- **Backend:** Spring Boot (Java)
- **Database:** SQL
- **APIs:** Google Maps API for geolocation

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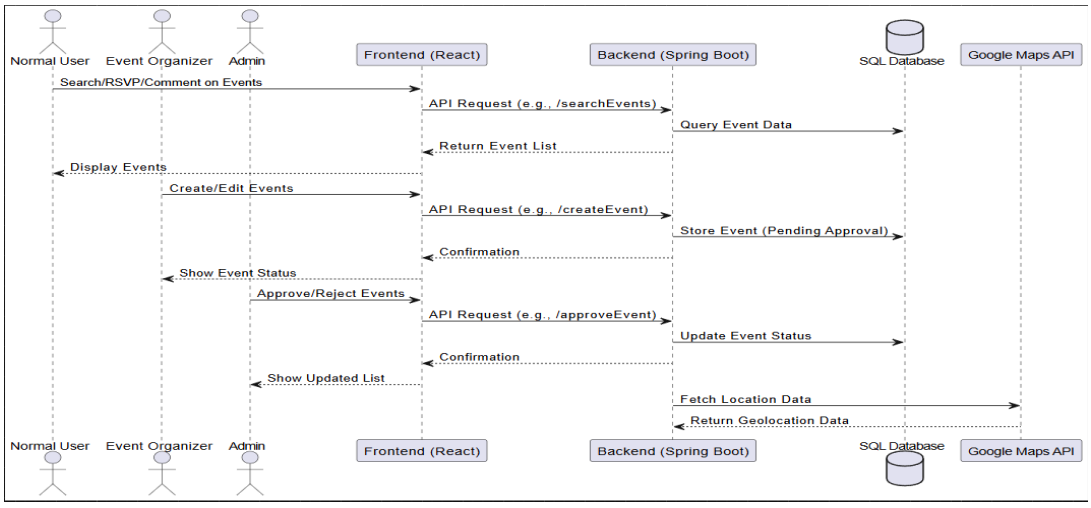
3.3 Data Flow

The data flow in EventHub incorporates three distinct user roles: **Normal Users**, **Event Organizers**, and **Admins**. Each role has specific permissions and interactions that contribute to the overall functionality of the web application.

1. **Normal Users**:
   Normal users, who represent community members, can search for and browse events based on categories, locations, or specific keywords. When they find an event of interest, they can RSVP or leave comments. These actions trigger frontend requests that are sent to the backend through APIs. For instance, when a user RSVPs to an event, the backend records this in the database under the corresponding event and user records.
2. **Event Organizers**:
   Event organizers are users who can create, edit, and manage their own events. When an organizer submits a new event, the frontend sends a request to the backend to validate and store the event data in the database. Once stored, the event remains in a "pending approval" state until reviewed by an admin. The backend also provides event organizers with the ability to view statistics about their events, such as RSVPs and user comments.
3. **Admins**:
   Admins oversee the platform's content by approving or rejecting events created by organizers. When an admin logs in, the backend retrieves a list of pending events from the database and displays it on the frontend. Admins can then approve or reject events, which triggers updates in the database. The system ensures that only approved events are displayed publicly for users to discover.

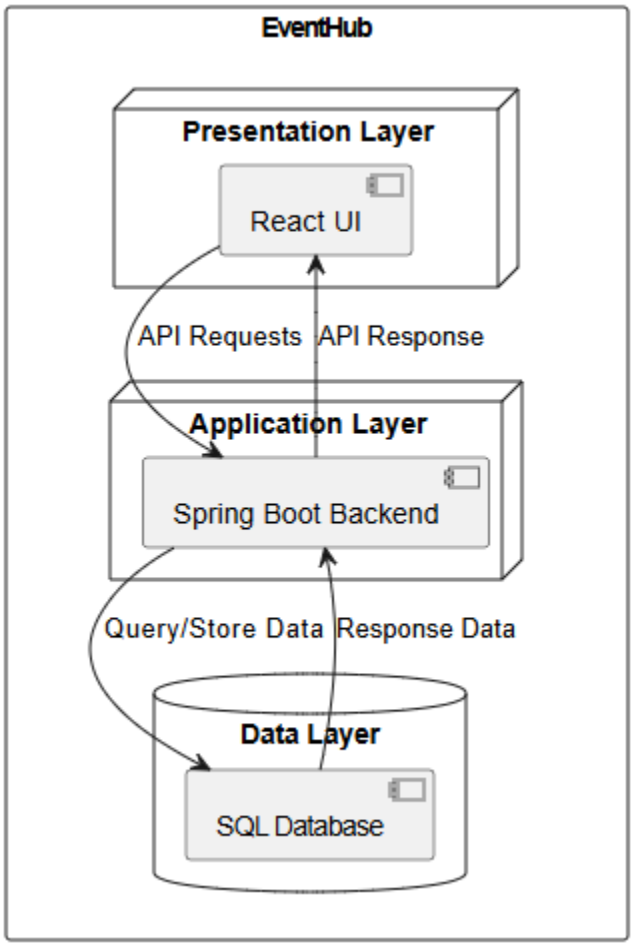


CHAPTER FOUR: SYSTEM DESIGN AND IMPLEMENTATION

4.1 System Architecture

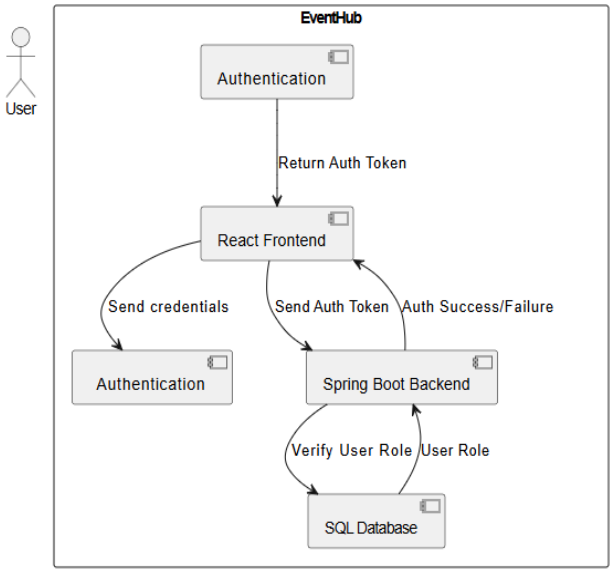
EventHub uses a three-tier architecture:

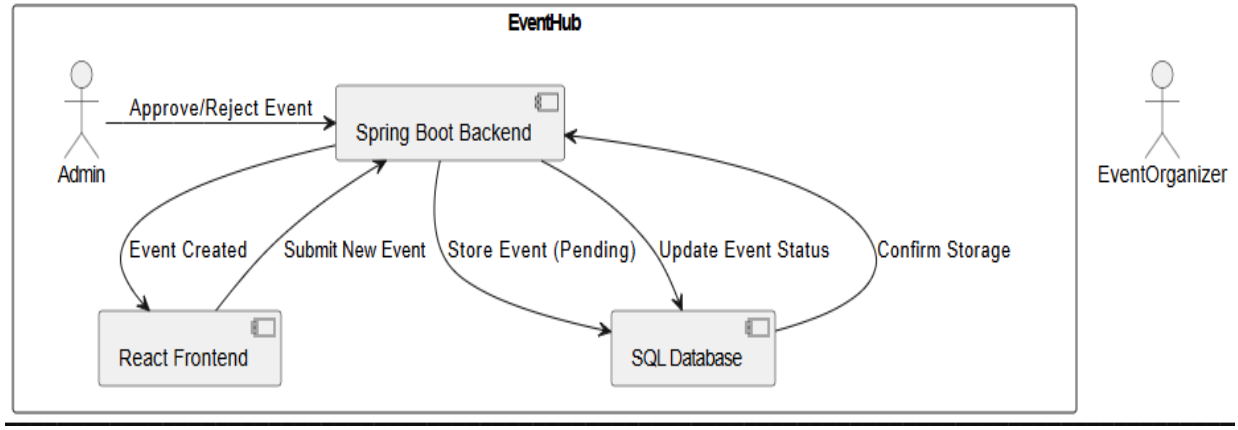
- **Presentation Layer:** The user interface built with React for a dynamic experience.
- **Application Layer:** The backend, using Spring Boot, handles logic and APIs.
- **Data Layer:** The SQL database securely stores event and user data.



4.2 Key Features

- **User Authentication:** Secure sign-in and registration with Firebase.
- **Event Management:** Easy tools for creating, editing, and deleting events.
- **Search & Filters:** Find events by category, date, or location.
- **Geolocation Integration:** See event locations on Google Maps.
- **Responsive Design:** Works well on all devices.





CHAPTER FIVE: TESTING AND RESULTS

5.1 Testing Process

A thorough and comprehensive testing process was carried out to ensure that EventHub functions correctly, performs efficiently, and provides a positive user experience. The testing covered several key areas to validate the platform's effectiveness:

- **Functional Testing:** This phase involved checking whether each feature and function of the platform works as expected. All core features, such as event creation, registration, ticketing, and search functionality, were tested to confirm that users could perform actions without encountering issues or errors. Ensuring the backend APIs functioned as intended, and that data was correctly stored and retrieved from the database, was also part of this process.
- **Usability Testing:** To ensure EventHub is intuitive and easy to navigate, usability testing was conducted with a group of potential users. Feedback was gathered on the overall layout, ease of navigation, and clarity of instructions. The goal was to identify any pain points or areas of confusion within the user interface and make improvements to enhance the overall user experience. This testing helped confirm that the platform is accessible to a wide range of users, including those who may not be familiar with complex event management tools.
- **Performance Testing:** Performance testing was carried out to ensure that the platform performs smoothly even under varying levels of traffic. This included testing the system's ability to handle multiple users interacting with the platform at the same time. Stress tests were conducted to simulate high traffic conditions, and load testing was done to check if the platform could handle large numbers of events and user registrations without significant slowdowns or crashes. The objective was to make sure EventHub remains responsive and reliable under different load conditions.
- **Cross-Browser Testing:** To ensure compatibility across a variety of web browsers, cross-browser testing was performed. This process involved testing EventHub on popular browsers like Google Chrome, Mozilla Firefox, Safari, and Microsoft Edge. The goal was to verify that the platform looks and functions consistently across all major browsers, addressing any browser-specific rendering issues or performance disparities that may arise.

5.2 Results

The results from the testing phase were highly positive, confirming that EventHub met its key objectives and performed effectively in real-world conditions. Key findings from the testing process include:

- **Seamless Functionality:** All tested features of the platform functioned as intended, with users able to easily create and manage events, register for events, and navigate through the platform. The backend system successfully processed requests, and the platform's database was able to store and retrieve event data efficiently. No significant bugs or errors were encountered during the functional testing phase.
- **Positive User Feedback:** The usability testing provided valuable insights, with users praising the platform's intuitive design and ease of use. The search functionality, which allows users to find events based on their preferences, was especially highlighted as a strong feature. Additionally, the geolocation feature, which helps users find nearby events and navigate to venues, received positive feedback for its accuracy and ease of use. Many users commented on how easy it was to create an event, find events in their area, and register with minimal effort.
- **Strong Performance:** During performance testing, EventHub demonstrated excellent scalability. The platform remained fast and responsive even under heavy load, with no noticeable lag or downtime during high traffic simulations. This confirmed that EventHub is capable of handling a growing user base and larger event volumes without compromising on user experience.
- **Cross-Browser Compatibility:** Cross-browser testing revealed that EventHub is fully compatible with all major web browsers. The platform provided a consistent and smooth experience, regardless of whether users were accessing it via Chrome, Firefox, Safari, or Edge. Any minor browser-specific issues that were identified were quickly addressed, ensuring that the platform's performance remained optimal across different environments.

Overall, the testing phase confirmed that EventHub is a functional, reliable, and user-friendly platform, meeting its design and performance goals. The platform is well-suited for both event organizers and attendees, offering a streamlined experience for managing and discovering events. The feedback from usability and performance testing will be used to make further enhancements, ensuring EventHub continues to evolve and meet the needs of its users.

CHAPTER SIX: CONCLUSION

- ### 6.1 Conclusion
  EventHub has successfully addressed the critical challenges that arise in event planning and discovery within local communities. Through the thoughtful integration of cutting-edge web technologies, EventHub has created a dynamic and accessible platform that simplifies the often complex and fragmented process of organizing and attending events. The platform is designed with an intuitive, user-friendly interface that ensures seamless navigation for both event organizers and attendees, eliminating barriers typically faced when engaging with traditional event management tools. By providing an easy-to-use space for event creation, promotion, and ticket management, EventHub empowers organizers to efficiently manage their events while also offering attendees a centralized platform to explore, discover, and engage with local happenings that align with their interests and preferences.

- What sets EventHub apart is its commitment to enhancing community engagement and promoting a culture of participation. By streamlining the event planning process and offering an accessible means of discovering events, the platform contributes significantly to the growth and vibrancy of local communities. It supports diverse types of events—from social gatherings to educational conferences—helping to foster a sense of connection and belonging within these communities. The platform's robust features, such as event categorization, advanced ticketing capabilities, and real-time updates, allow both organizers and attendees to interact effortlessly, ensuring a smooth experience at every stage of the event lifecycle.

- Moreover, EventHubs ability to integrate modern technology with the community-building process demonstrates the power of digital solutions in solving real-world challenges. The platform's success showcases the profound potential of harnessing technology to create meaningful experiences and opportunities for people to connect with one another in the real world. By facilitating easy access to relevant events, it encourages greater participation and promotes a more vibrant, engaged community. Ultimately, EventHub stands as a powerful tool in the ongoing evolution of how communities come together, learn, and celebrate, marking a significant step forward in the future of event planning and discovery.

CHAPTER SEVEN: REFERENCES

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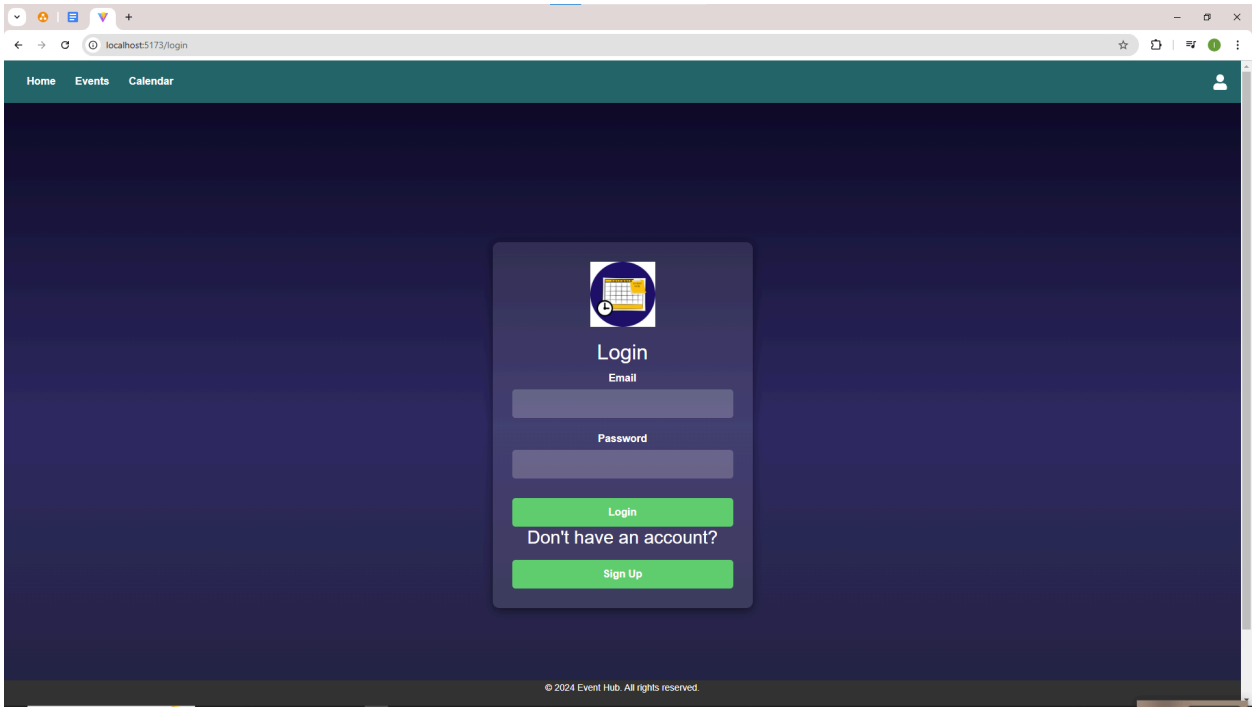
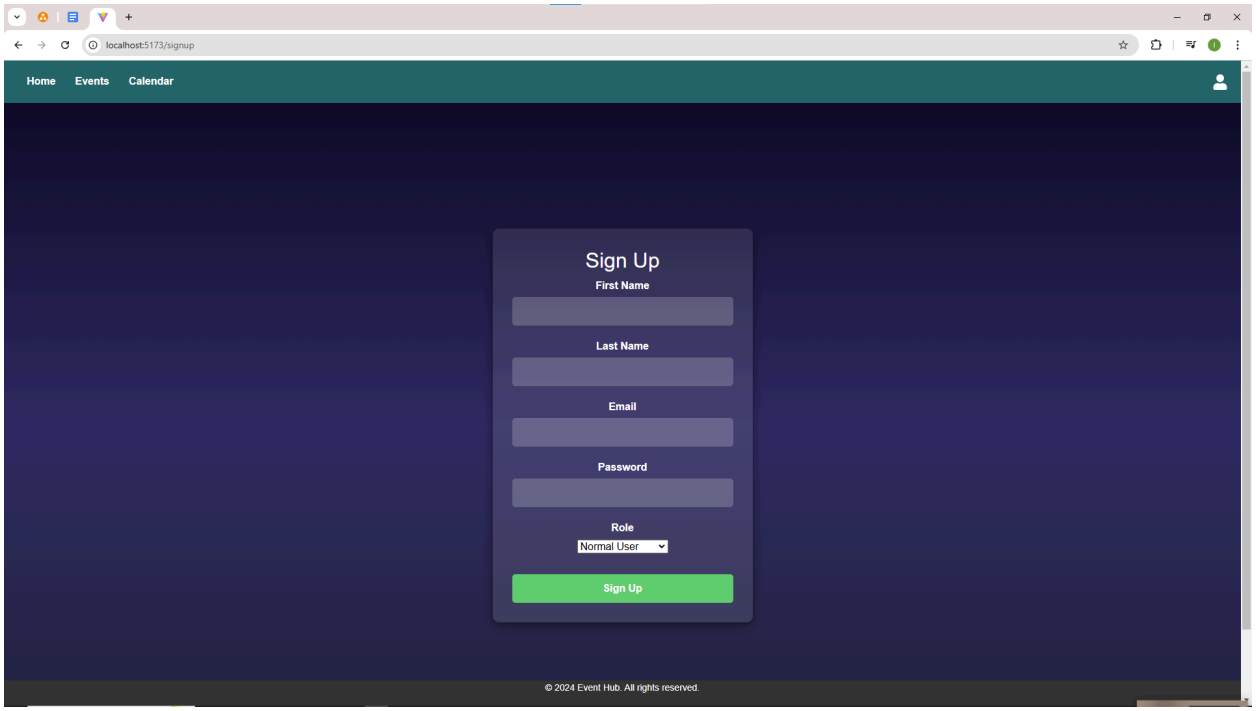
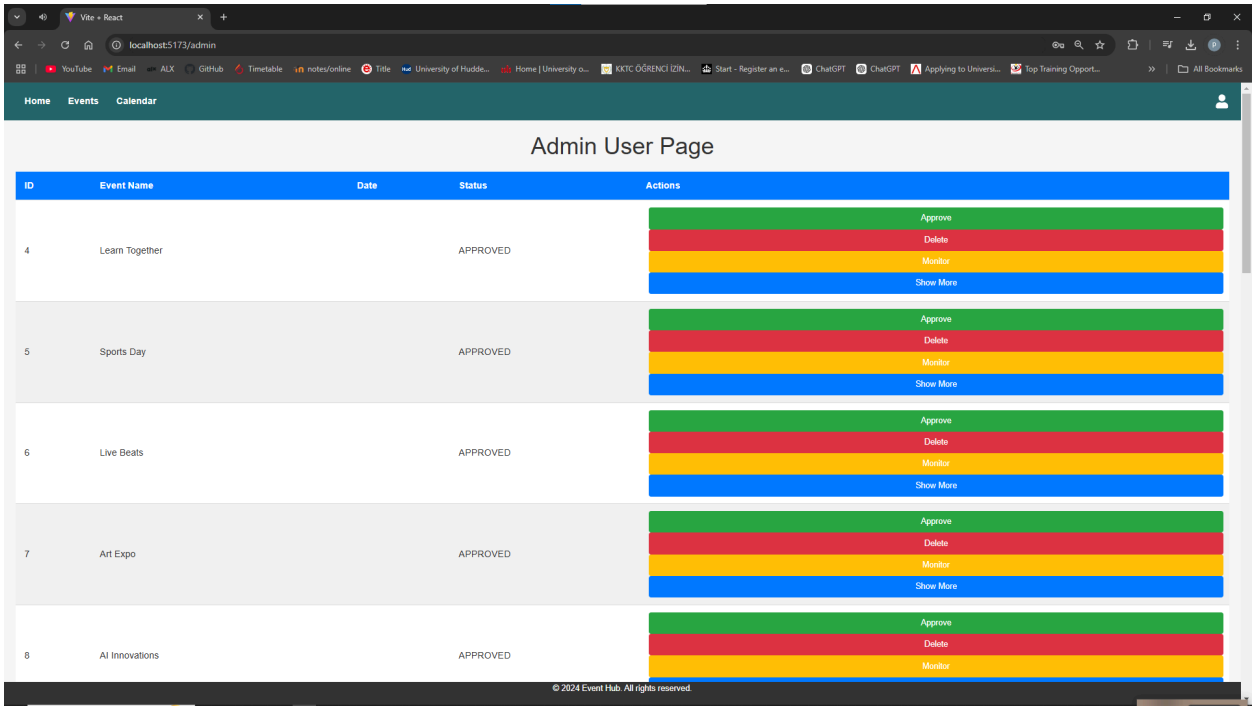
CHAPTER EIGHT : APPENDICES



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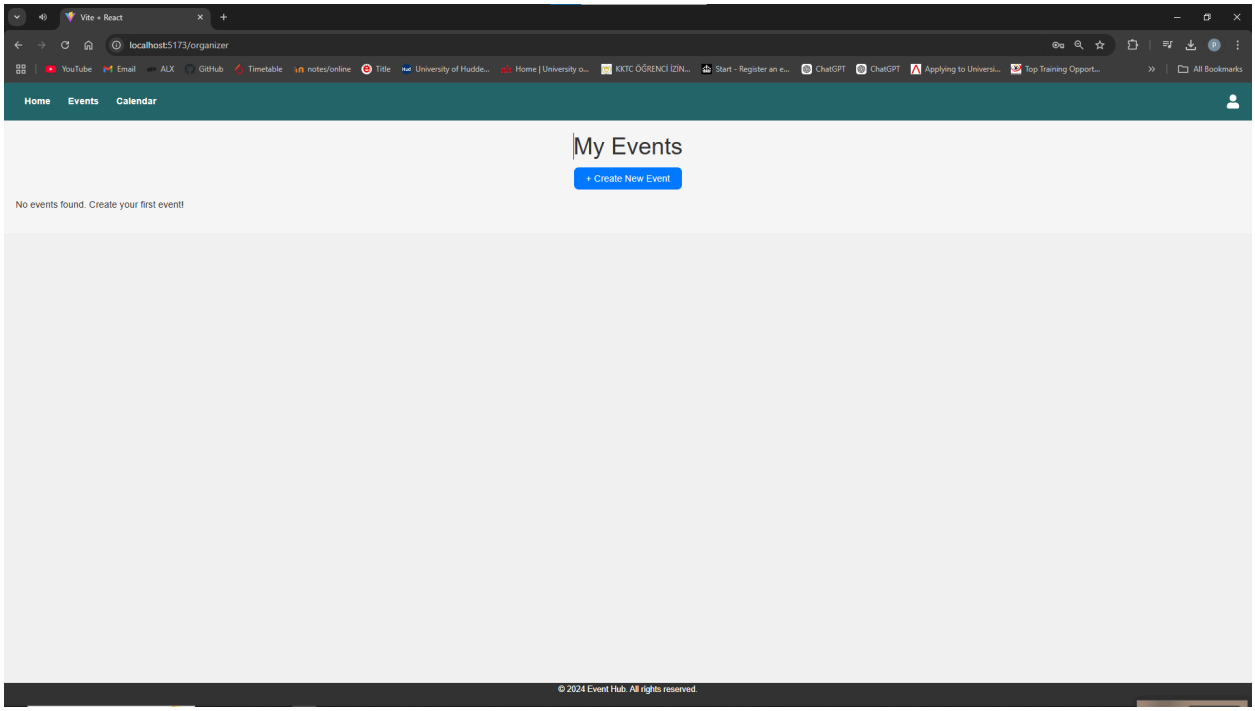
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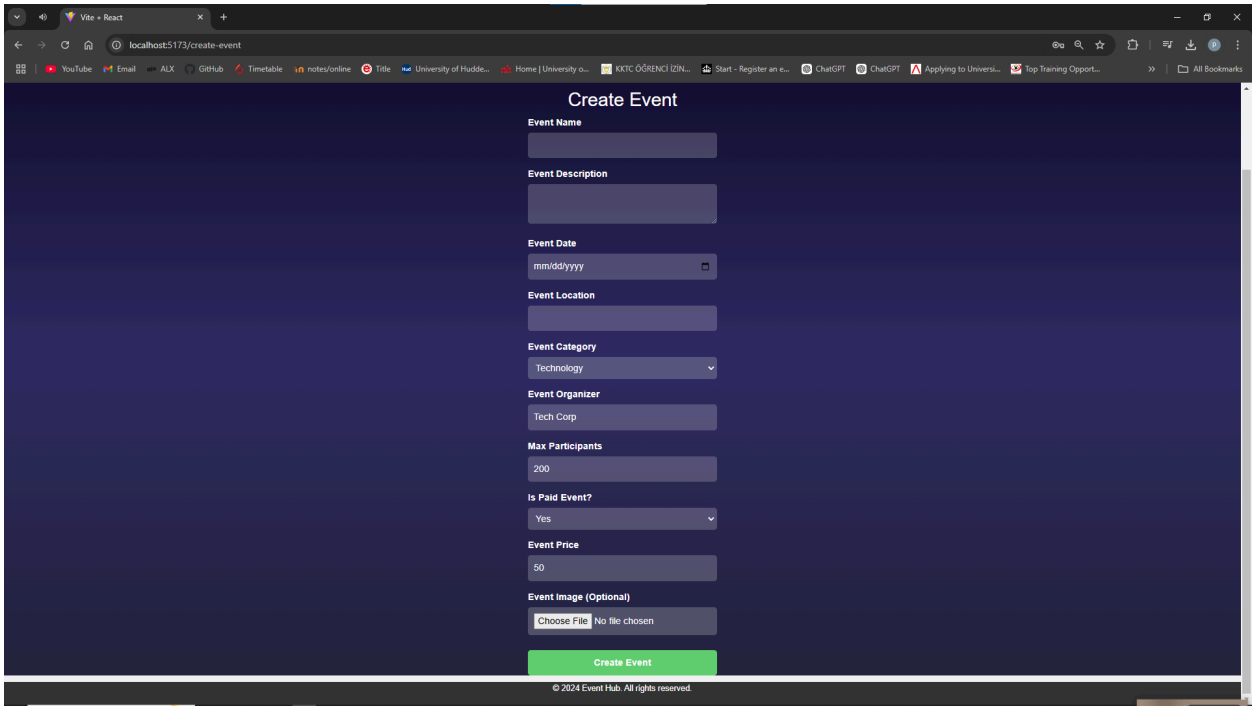
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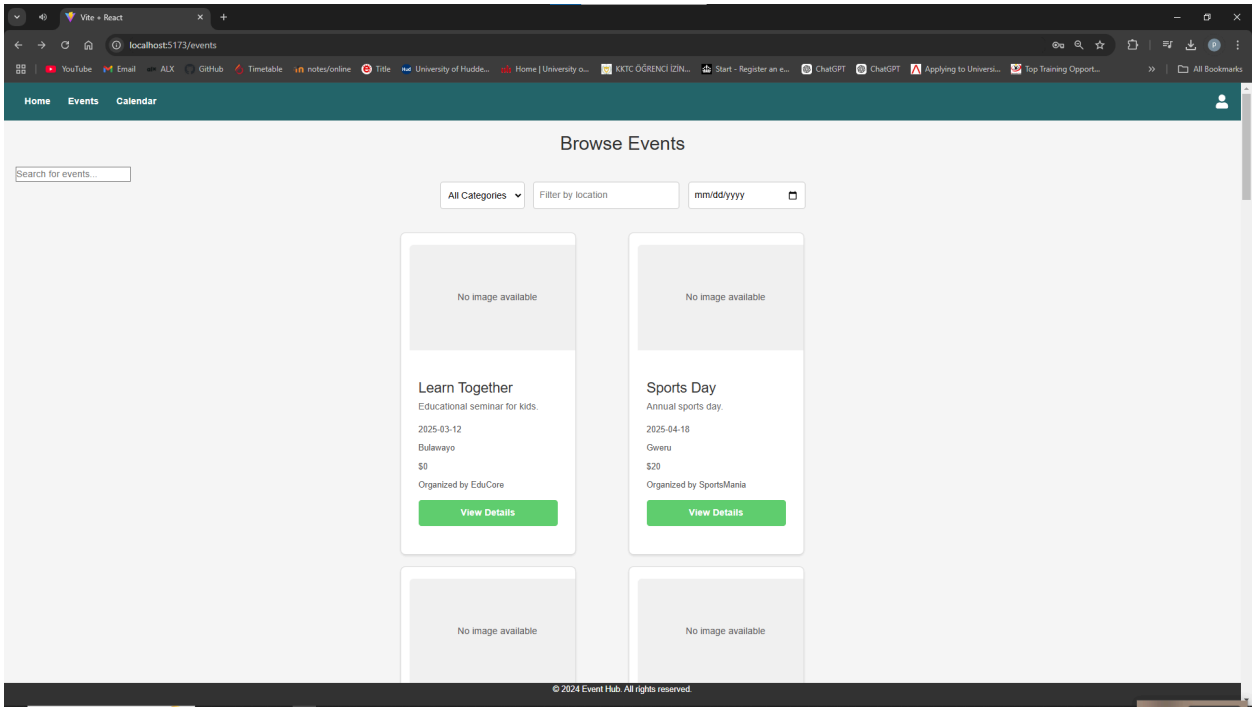
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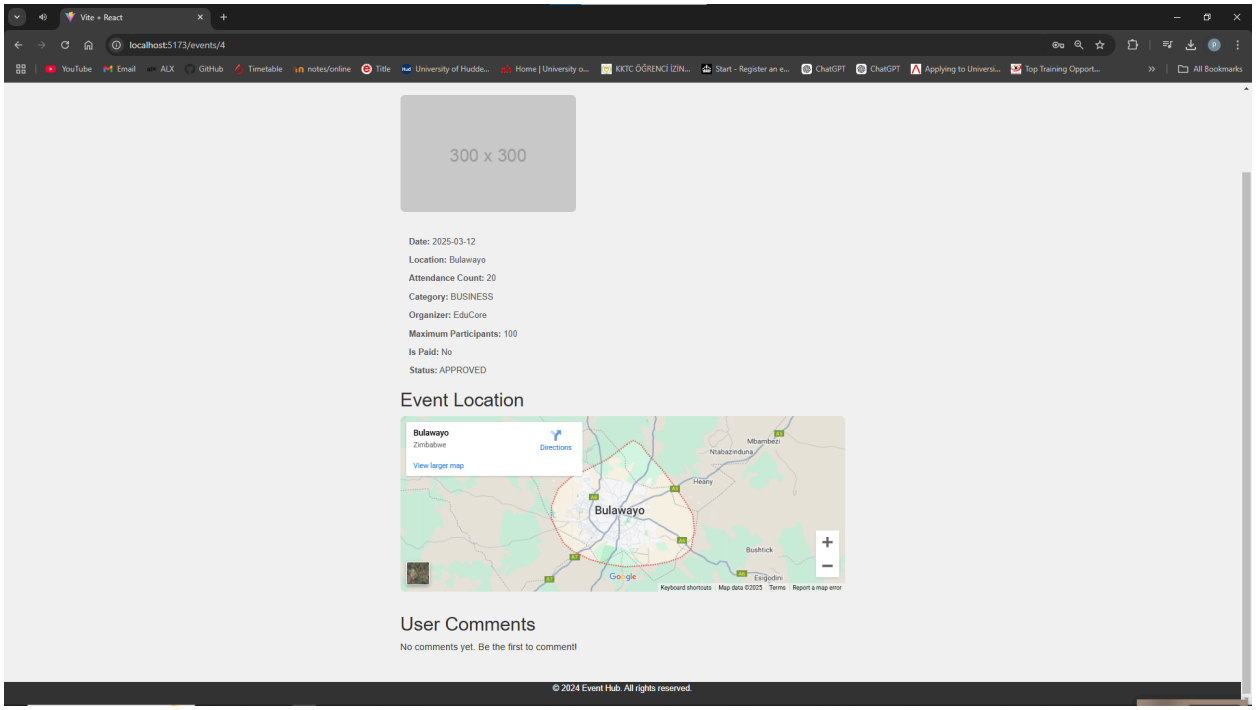
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Directions
View larger map
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User Comments
No comments yet. Be the first to comment!
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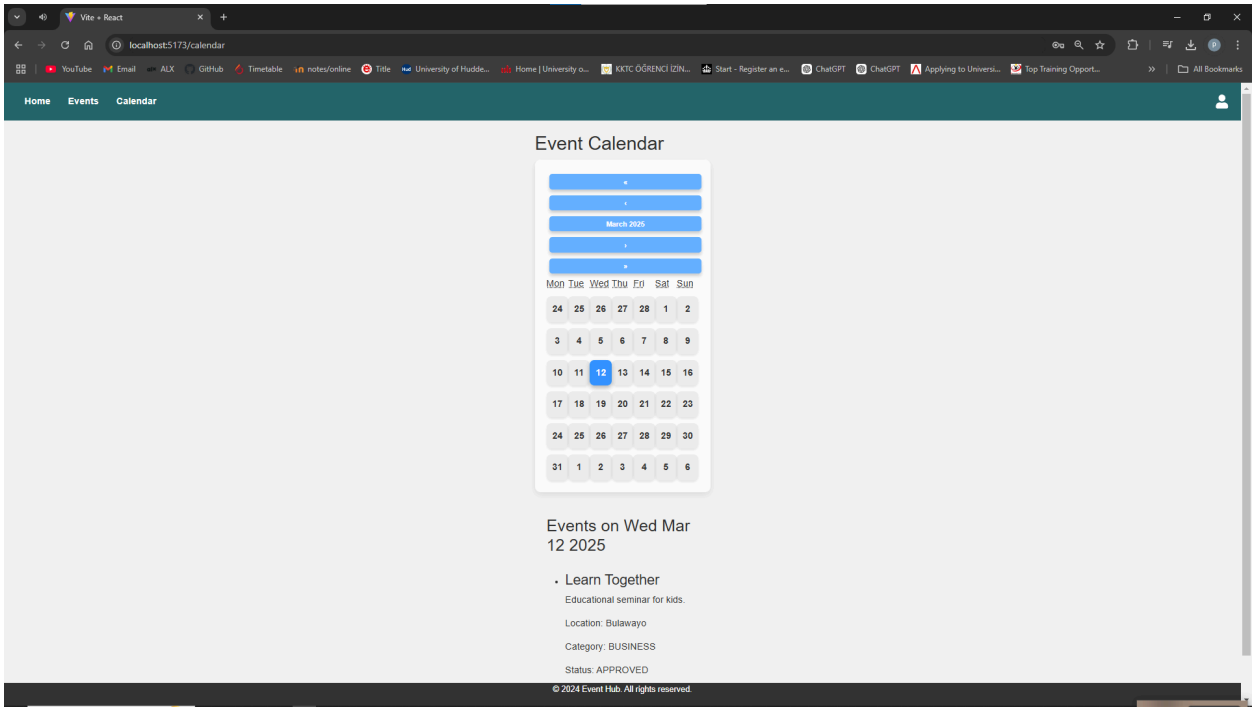
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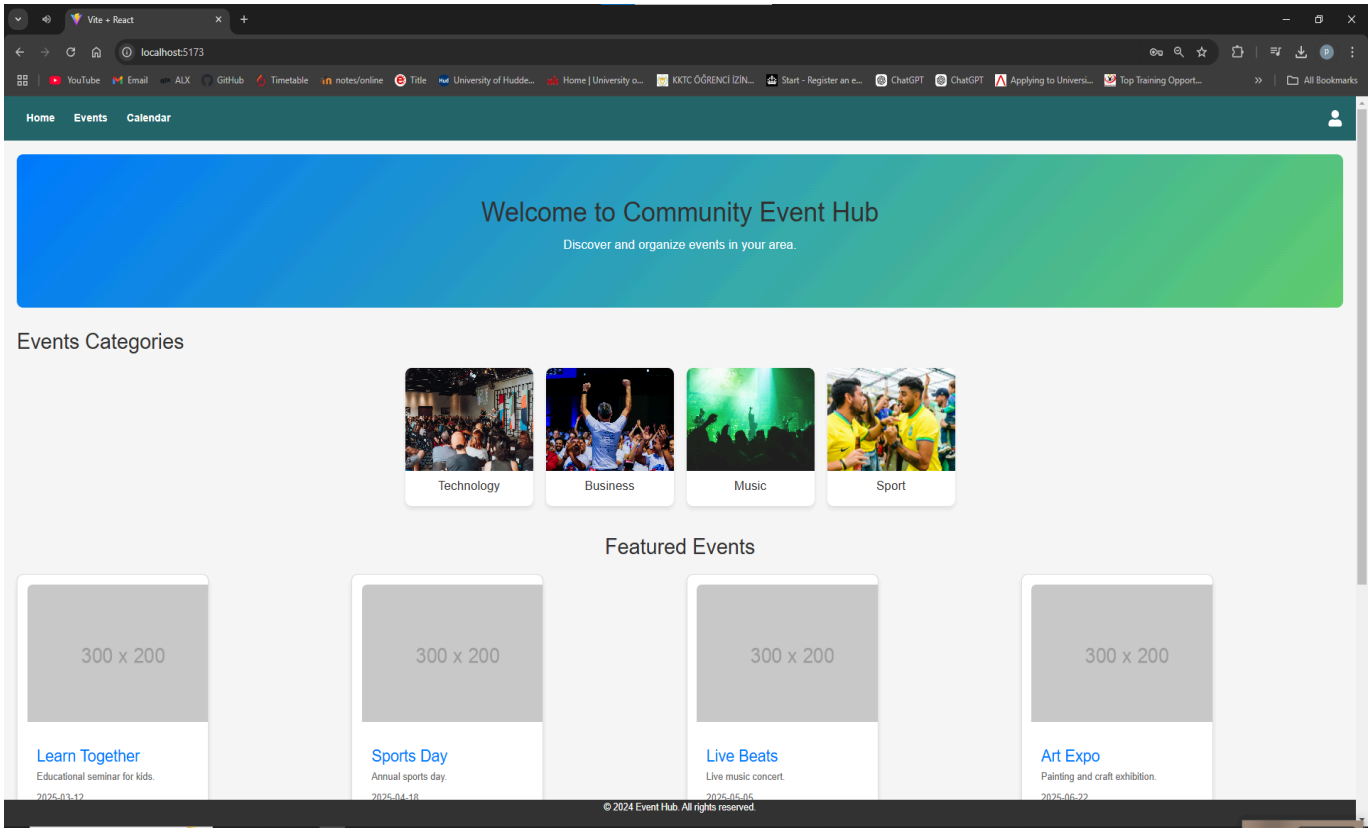
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Live Beats
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Art Expo
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