Team Project: *Group 1*

Team Members

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Requirements Analysis

Project Overview

- **Project Name**: Web-Based Event and Ticket Management System
- **Project Description**: This project aims to design and implement a web application built on the Spring Boot framework, focused on managing events, venues, and tickets. The system's users include administrators, organizers, and regular users, each with different functional permissions.
- **Development Platform**: Spring Boot Web Application

System Objectives

- The system aims to provide efficient and user-friendly solutions for event and ticket management by incorporating functionalities for account management, venue management, event management, and ticket management. Three main user roles (Administrator, Organizer, and User) will utilize the system to perform relevant management and ticket purchasing functions, enhancing event organization and user experience.

Core Functional Requirements

1. Account Management

- **User Roles**: The system should support three user roles: Administrators, Organizers, and Users which are created by the account. The permissions and functions of each role are as follows:

  - **Administrator**:

    - Can register administrator and organizer new accounts.
    - Can view and edit details of all accounts (including administrator, organizer, and user accounts).
    - The recorded account information includes: name, email, and password.

  - **Organizer**:

    - Can view and edit their account information.
    - The recorded account information includes: name, address, company name, email, password, phone number, and a list of organized events.

  - **User**:

    - Can register a new account, view and update their account information
    - The recorded account information includes: username, email, password, and a list of purchased events.

2. Venue Management

- **Venue Management Permissions**:

  - **Organizer**: Can view and edit all venues and their details in the system, as well as add new venues.
  - **Administrator**: Can view all venues and their details in the system, and delete venues.

- **Venue Information**: Each venue should include the following details:

  - Venue name, address, local contact information (name, phone number, email).
  - Total capacity and a breakdown of ticket types available (e.g., standing, seating, premium), with quantities for each

ticket type.

3. Event Management

- **Event Management Permissions**:
    - **Organizer**: Can view and edit the events they have created and their details, as well as create new events.
    - **Administrator**: Can view all events and their details, and delete events.
    - **User**: Can view all upcoming events and their details.

- **Event Information**: Each event includes:
    - Event name, description, date, time, venue, organizer, and ticket details.
    - **Ticket Details**: Price, quantity available, and quantity sold for each ticket type.
    - **Restrictions**: The system must ensure that no duplicate events occur at the same venue and time.

4. Ticket Management

- **Ticket Purchase Permissions**:
    - **User**:
        - Once logged in, users can view a list of upcoming events, view event details, and choose to purchase tickets.
        - Users can view their ticket purchase history, including past events and upcoming events.

- **Ticket Information**: After purchasing, ticket details are stored in the user's account. Information includes:
    - Event details, venue details, seat type, and ticket price.

- **Payment Processing**: It is assumed that payment processing is handled by an external system, and is not within the scope of this project.

Non-Functional Requirements

- **Performance Requirements**: The system should support at least 5,000 concurrent users.
- **Security Requirements**: The account management module should ensure encrypted passwords and secure handling of sensitive information.
- **Compatibility Requirements**: The system should be compatible with commonly used modern browsers (e.g., Chrome, Firefox, Safari).
- **Usability Requirements**: The user interface should be intuitive, clear, and easy to navigate for both users and organizers.

System Boundaries

1. System Scope

- **Included Features**:
    - **Account Management**: The system supports registration, login, and information management for administrators, organizers, and regular users. Administrators manage all user accounts, while organizers and users can only manage their own account information.
    - **Venue Management**: The system supports organizers in adding, viewing, and editing venue information. Administrators can delete venues.
    - **Event Management**: Organizers can create, manage, and view event details. Administrators can delete events.

- **Ticket Management**: The system allows users to view event information, purchase tickets, and review purchase history. Ticket management includes viewing ticket types, prices, and seat information.

- **Excluded Features**:

  - **Payment Processing**: The system does not handle the ticket payment process or payment security. It is assumed that payment processing is completed by a third-party payment system, and the system only records ticket transaction status without handling payment transactions or financial records.

  - **External Data Integration**: The system does not integrate with external data sources (such as other ticketing systems or venue management systems).

  - **Advanced Analytics**: Features like ticket sales data analysis and marketing data analysis are outside the scope of this system.

  - **Diverse venue shapes**: Venue shapes are restricted to rectangular forms.

  - **Automatic seat assignment**: Users cannot manually select seats; the system assigns them automatically.

2. Assumptions

- The system relies on a reliable third-party payment system to ensure users can complete ticket transactions.

- System users (including administrators, organizers, and regular users) can access the system through modern browsers (e.g., Chrome, Firefox, Safari) without reliance on specific operating systems.

- It is assumed that input data (such as user information and venue information) is accurately provided by users or administrators. The system will provide basic validation, but not enforce extensive data validation.

3. System Limitations

- Concurrent access capability for 5000 users: This is a system limitation, defining the system's maximum concurrent user capacity.

- No data backup and recovery functionality: The system does not provide backup capabilities, which is a technical limitation.

- Supports only common ticket types: The system is limited to supporting specific ticket types, which is a functional limitation.

- Venue shape limitation: All venues are rectangular and do not support shape diversity, which is a design limitation of the system.

- Automatic seat assignment: Users cannot select seats manually; the system automatically assigns them. This is a usage limitation of the system.

Role Analysis (Actors)

The system has three main roles:

- **Administrator**: Manages all accounts and can delete venues and event information, ensuring the system operates smoothly.

- **Organizer**: Manages events and venue information, responsible for publishing and maintaining event-related information.

- **User**: Manages the events they create and all venue information, responsible for publishing events and maintaining related information.

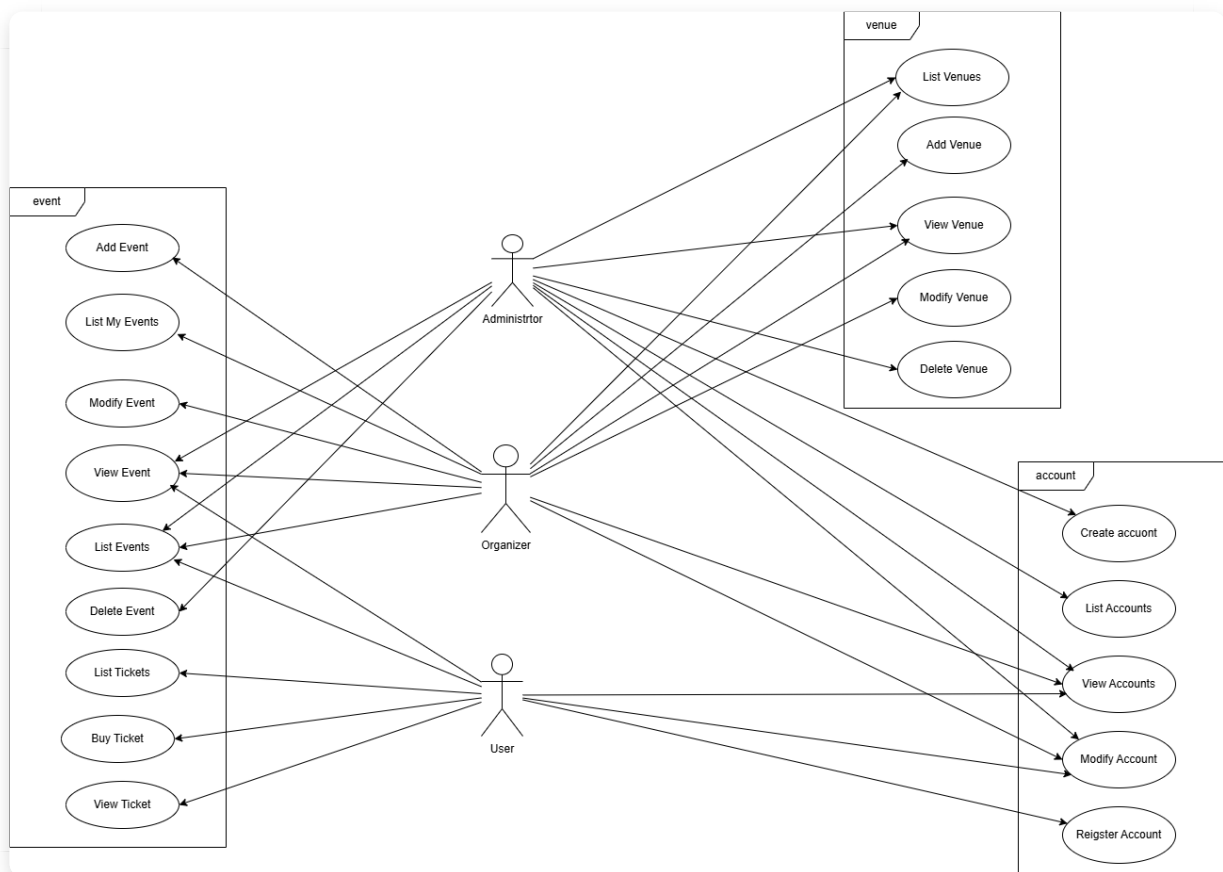## Use Case Descriptions

This includes the following use cases:

1. Create Account

2. List Accounts

3. View Account

4. Modify Account

5. Register Account

6. List Venues

7. Add Venue

8. View Venue

9. Modify Venue

10. Delete Venue

11. List Events

12. Add Event

13. View Event

14. Modify Event

15. Delete Event

16. List My Events

17. List Tickets

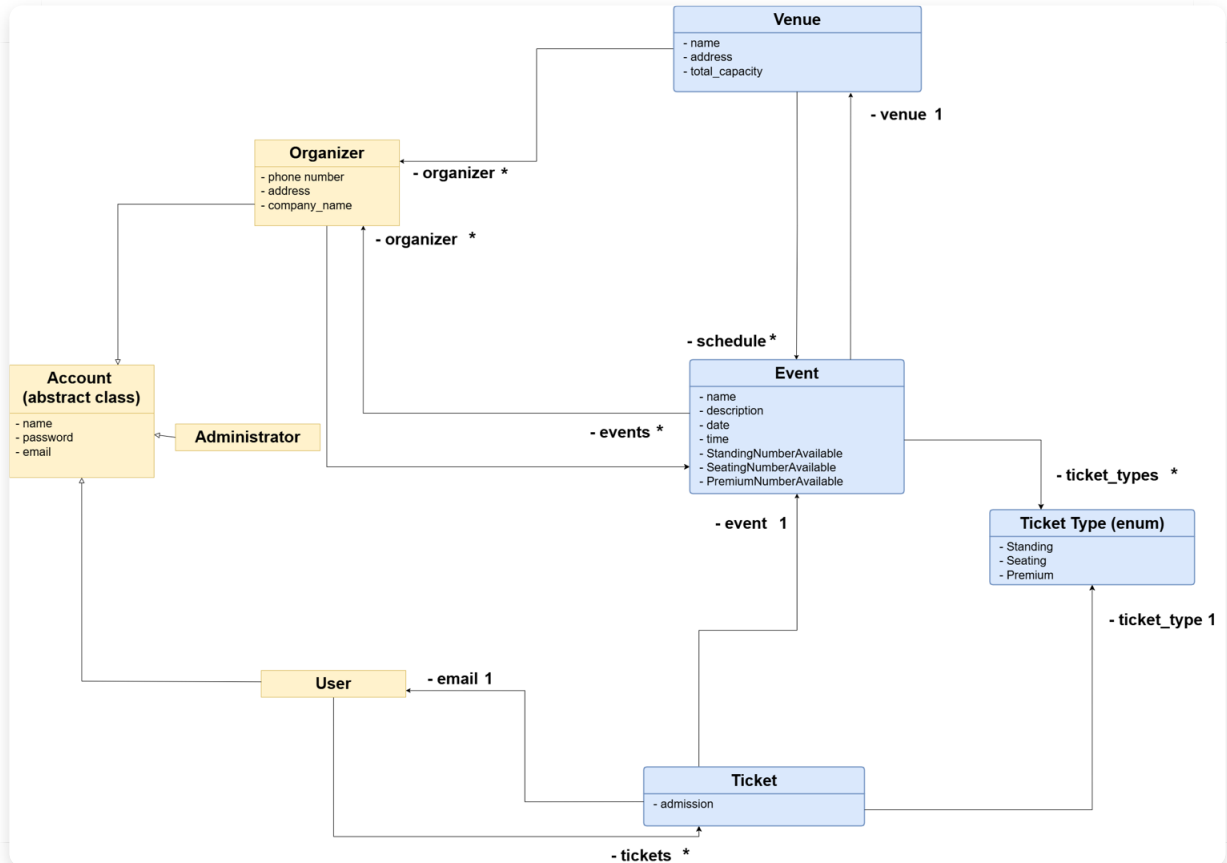18. Buy Ticket

19. View Ticket

Use Case Diagram

The use cases are shown in this diagram

use case diagram

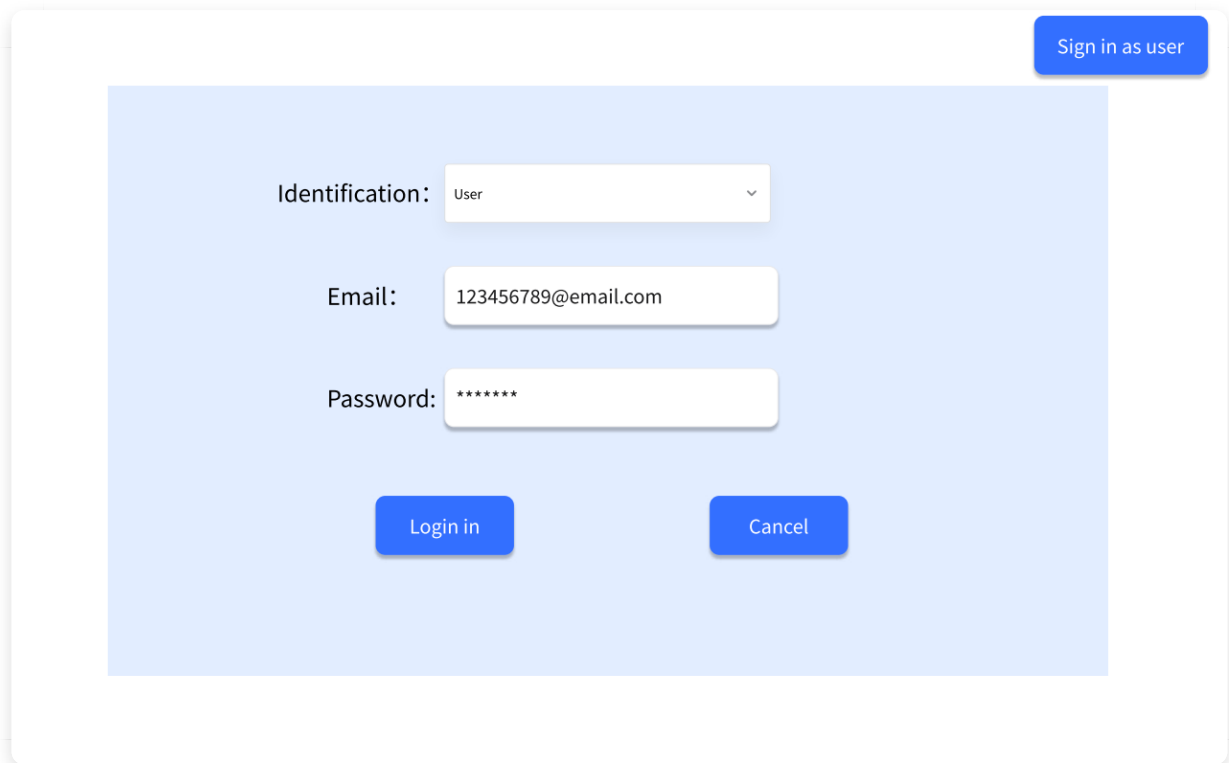# Domain Model

domain model

System Glossary

Term	Description
Identification	Confirmation of the current account type, including Administrator, Organizer, and User
Administrator	Manages user accounts and has permission to delete events and venues, but cannot create events and venues
Organizer	Responsible for creating and updating events and venues, but does not have permission to delete them
User	A regular user who can purchase tickets, view and participate in events, and check purchase history
Accounts	Contains three types of accounts, each with key information that depends on the account type
Name	The nickname given by the account user, which can be changed by the user
Email	Necessary information when creating a new account, used to contact the user
Password	Necessary information when creating a new account, used for identity verification during login
Telephone	The organizer's phone number, necessary information when creating a new organizer account

Home	The page that displays all upcoming events
Profile	Contains personal information in detail, allowing the user to change their nickname and contact information, etc.
Tickets	The ticket page allows users to view their own ticket purchase history
Search	Enables the administrator to retrieve and review all existing accounts using either the user name or the email address
My Events	Organizers can view all the events for which they have permissions
Event	Refers to a specific event, managed by organizers
Description	A detailed description of the event, including main casts and a content introduction, etc.
Date	The date of the event, which may include multiple dates of the same event
Time	Specific time information about one event, including the start time and end time (duration)
Venues	The name of the venue, which can be changed by organizers and administrators
Venue No.	A unique encoded number for the venue
Address	The physical address of the venue
Schedule	The venue's schedule, which includes all upcoming events held at the venue
Local contact	Venue contact information, including the responsible person's details (name, phone, and email)
Total capacity	The total capacity of the venue, which depends on the venue itself
Total number	The total number of tickets available, related to the capacity of the event
Sold number	The number of tickets that have already been sold (0 to total)
Ticket Type	Types of event tickets
Standing Ticket	A standing ticket, with no seat provided, requiring standing to watch
Seating Ticket	A seating ticket, where each ticket corresponds to a unique seat assigned by the system
Premium Ticket	A front-row ticket, a high-priced ticket that offers additional services or special treatment
Price classification	Displays the price classification, including all ticket prices related to ticket types
Price	The selling price of a particular type of ticket for a specific event
Company	Refers to the company hosting the events, managed by the corresponding organizer
	The action of paying for the order; in this project, only a button is provided, without specific

Pay	implementation actions

UI Prototypes/Sketches

The following is the UI prototype for the event management application.

1 Login Page

Login Page

2 User

2.1 Sign in Page

Sign Page

2.2 Home Page

User Home Page

2.3 Profile Page

User Profile Page

2.4 Tickets Pages

2.4.1 Holder Page

User Tickets Holder Page

2.4.2 Detail Page

User Tickets Detail Page

2.4.3 Payment Page

User Tickets Payment Page

3 Organizer
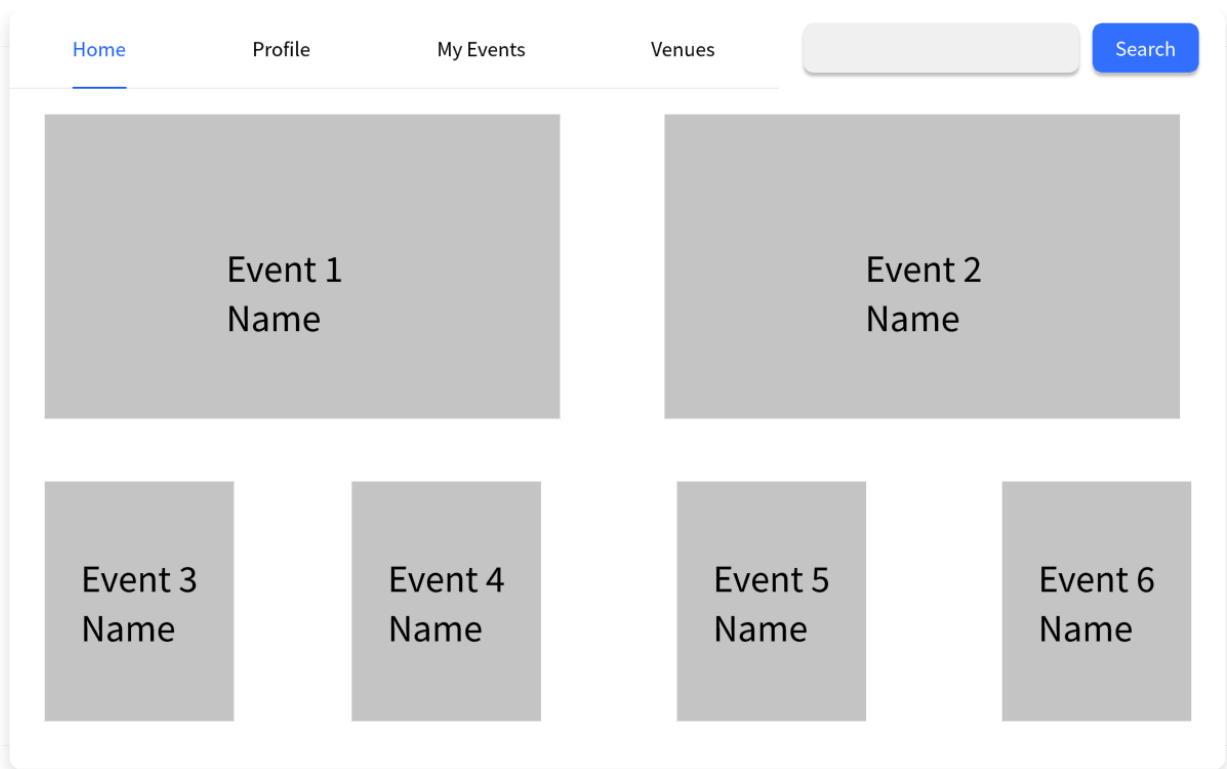
Organizer Home Page

3.2 Profile Page
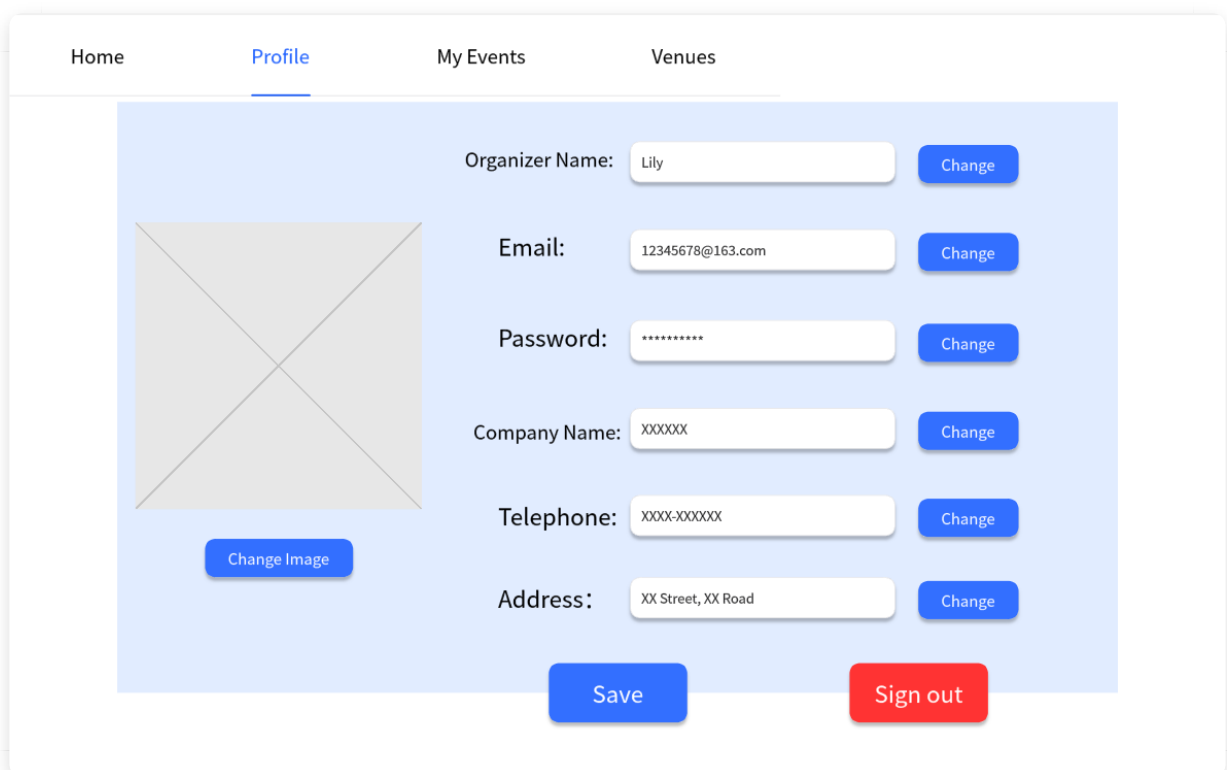
Organizer Profile Page

3.3 Events Pages

3.3.1 Management Page

| Home | Profile | My Events | Venues | | Search |

New Event

| Event 1 Name | Event 2 Name | Event 3 Name | Event 4 Name |

| Event 5 Name | Event 6 Name | Event 7 Name | Event 8 Name |
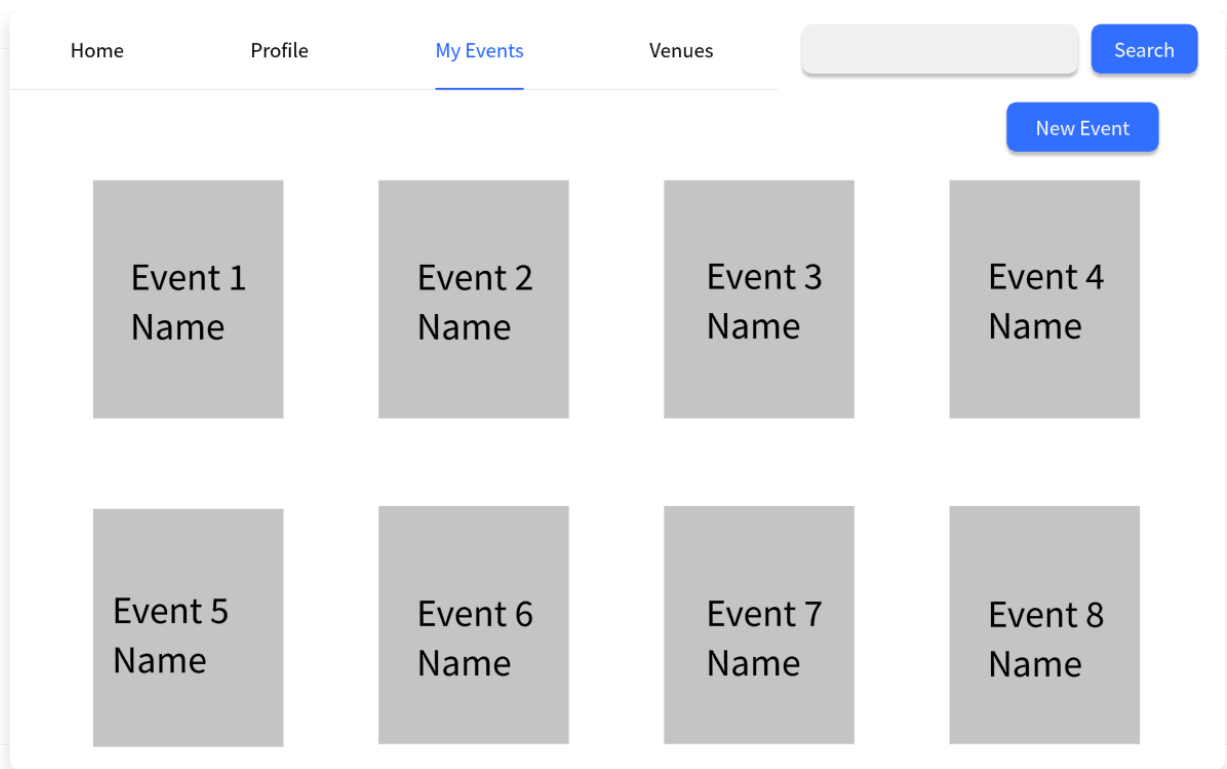
Organizer Events Management Page

3.3.2 Detail Page

Return

<Event Name>
<Venue Name>
Date:
Start Time:
End Time:
standingNumberAvailable:
seatingNumberAvailable:
premiumNumberAvailable:

<Description>
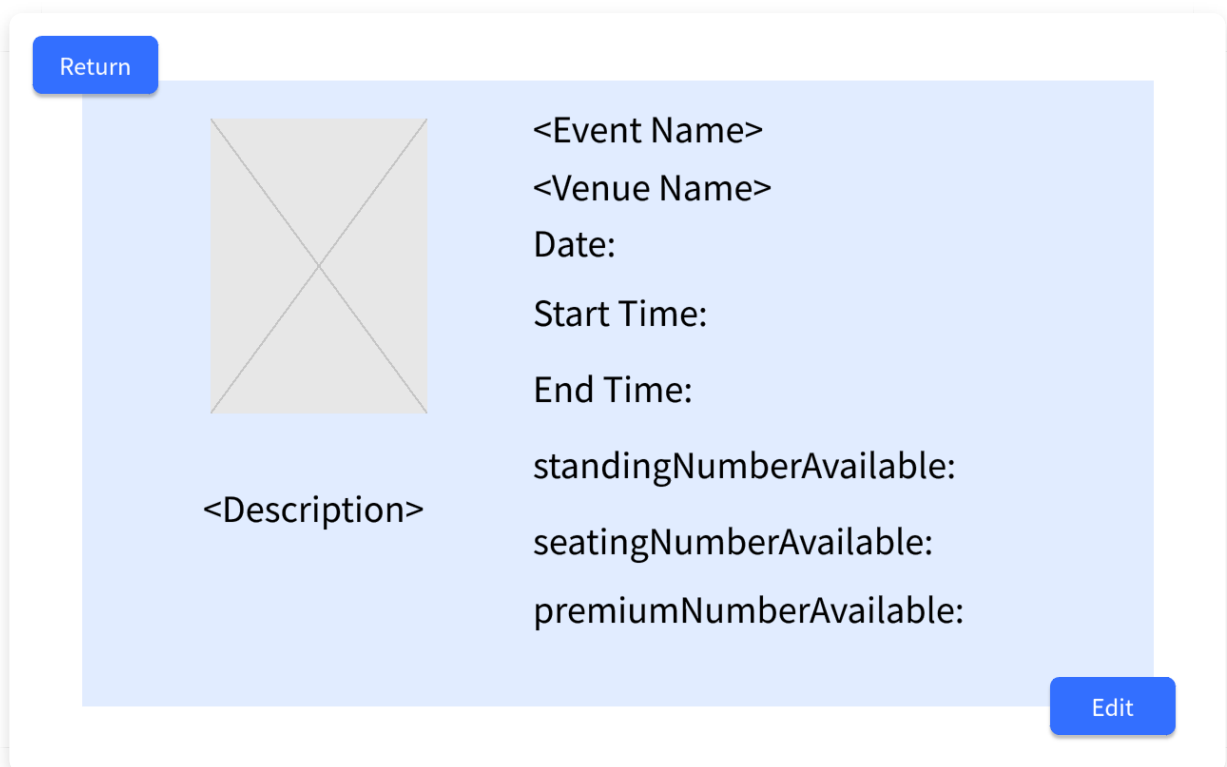
Edit

Organizer Events Detail Page

3.3.3 Create and Edit Page

Return

Event Name: XXXX   Change

Venue   Venue1

Date: XXXX   Change

Start Time: XXXX   Change

End Time: XXXX   Change

<Description>

XXXX

Change   Save   Cancel

Organizer Events Create and Edit Page

3.4 Venue Pages

3.4.1 Management Page

Home   Profile   My Events   Venues   Search

New Venue

Venue 1 Name   Venue 2 Name   Venue 3 Name   Venue 4 Name

Venue 5 Name   Venue 6 Name   Venue 7 Name   Venue 8 Name

Organizer Venues Management Page

3.4.2 Detail Page

Return

Venue Name: Schedule:

Address: <Event Date> <Event Time><Event Name>

Total Capacity: <Event Date> <Event Time><Event Name>

Price Classification: <Event Date> <Event Time><Event Name>

Local Contact:

    Name:

    Phone Number:

    Email: Edit

Organizer Venues Detail Page

3.4.3 Create and Edit Page

Return

Venue Name: Local Contact:

XXXX   Change   Name:

                                                 XXXX   Change

Address:

XXXX   Change   Phone Number:

                                                 XXXX   Change

Total Capacity:

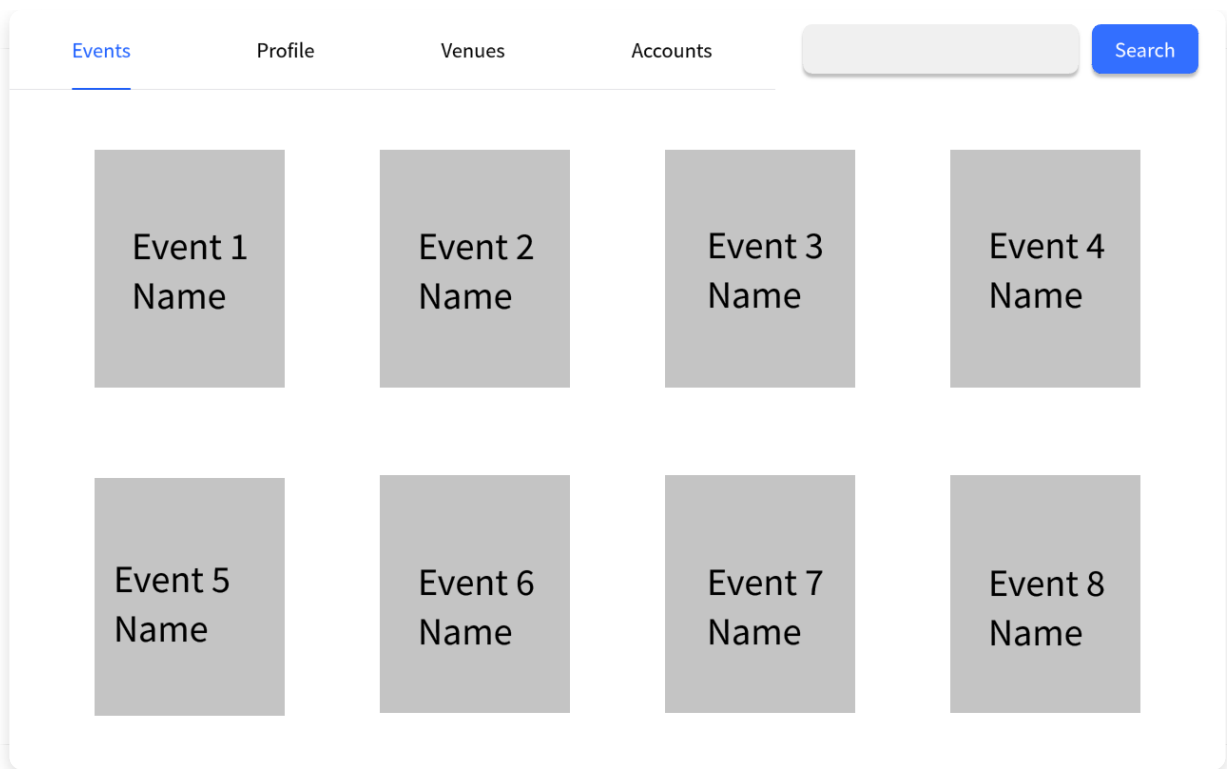XXXX   Change   Email:

                                                 XXXX   Change

Price Classification:

XXXX   Change   Save   Cancel

Organizer Venues Create and Edit Page

4 Administrator

4.1 Home Page

Events	Profile	Venues	Accounts		Search

Event 1 Name	Event 2 Name	Event 3 Name	Event 4 Name
Event 5 Name	Event 6 Name	Event 7 Name	Event 8 Name

Administrator Home Page

4.2 Profile Page

Home	Profile	Venues	Accounts

Administrator Name: Lily [Change]

Email: 12345678@163.com [Change]

Password: ********** [Change]

[Change Image] [Save]

[Sign out]
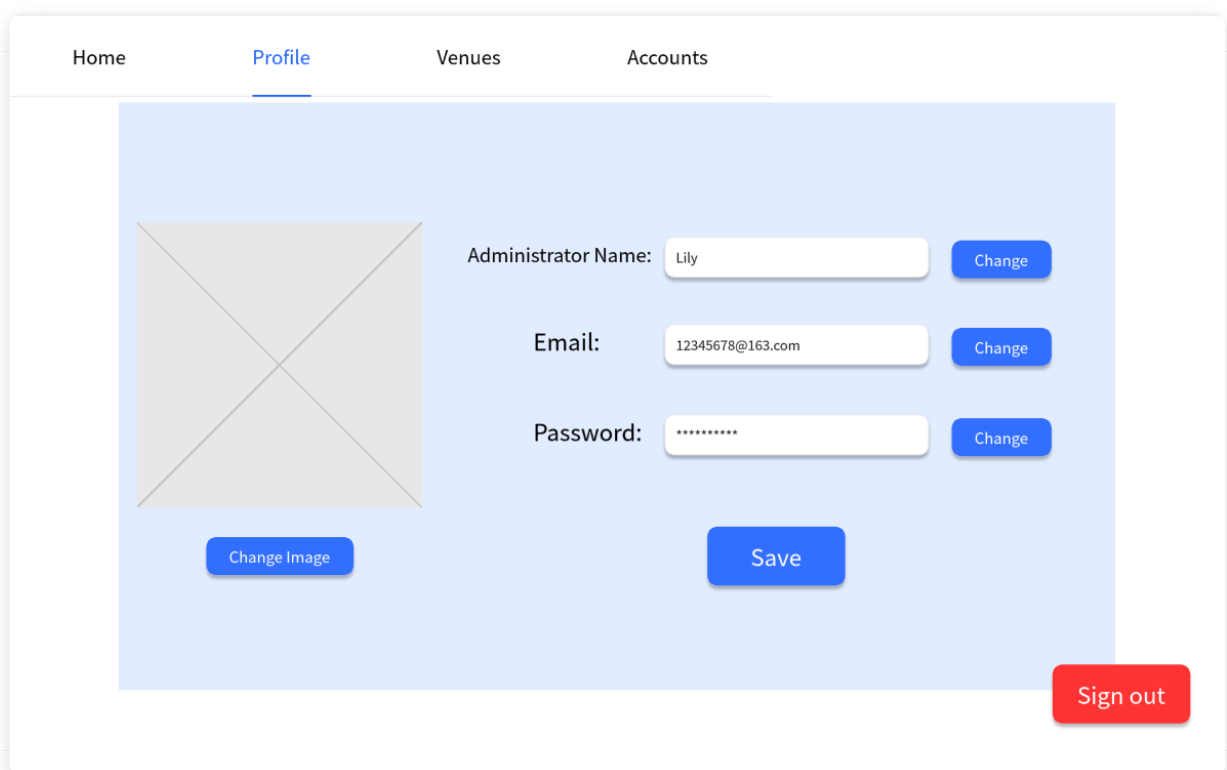
Administrator Profile Page

4.3 Venue Pages

4.3.1 Management Page

| Home | Profile | Venues | Accounts | | Search |

| Venue 1 Name | Venue 2 Name | Venue 3 Name | Venue 4 Name |

| Venue 5 Name | Venue 6 Name | Venue 7 Name | Venue 8 Name |
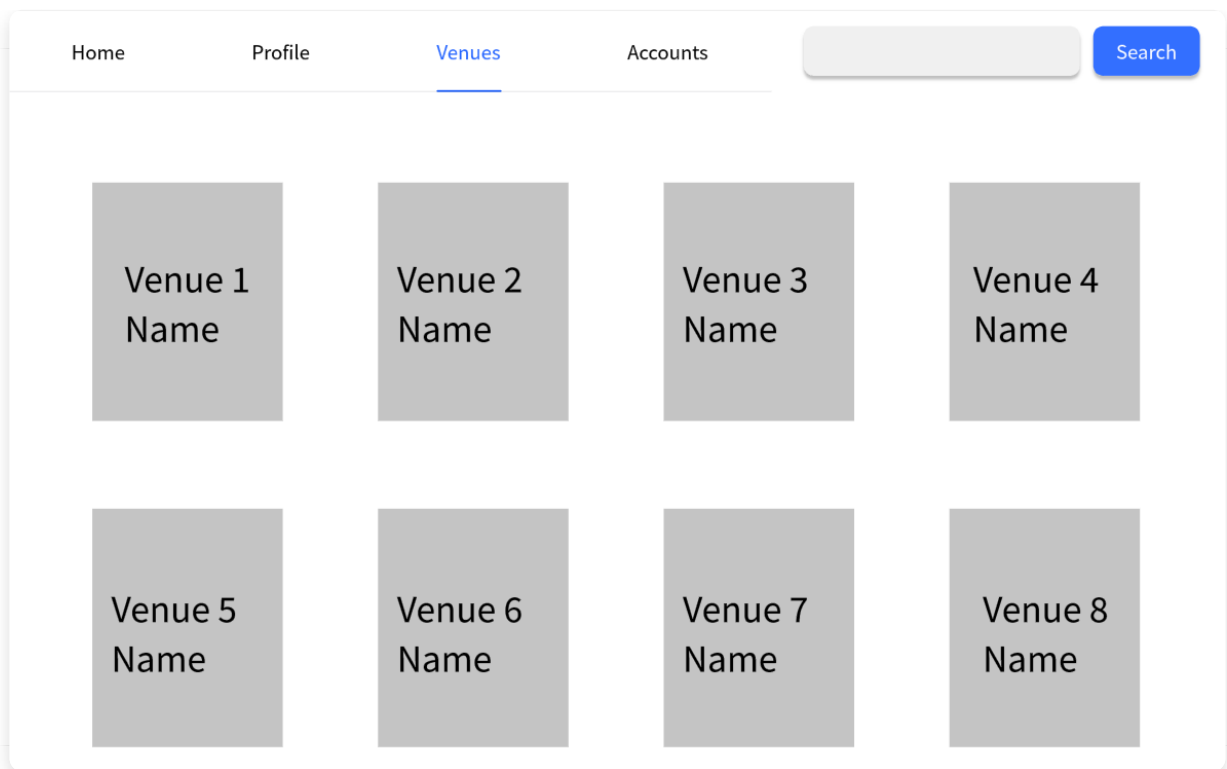
Administrator Venues Management Page

4.3.2 Detail Page

Return

Venue Name：

Address：

Total Capacity:

Price Classification:

Local Contact:

   Name：

   Phone Number：

   Email：

Schedule：

   <Event Date> <Event Time><Event Name>

   <Event Date> <Event Time><Event Name>

   <Event Date> <Event Time><Event Name>

Delete
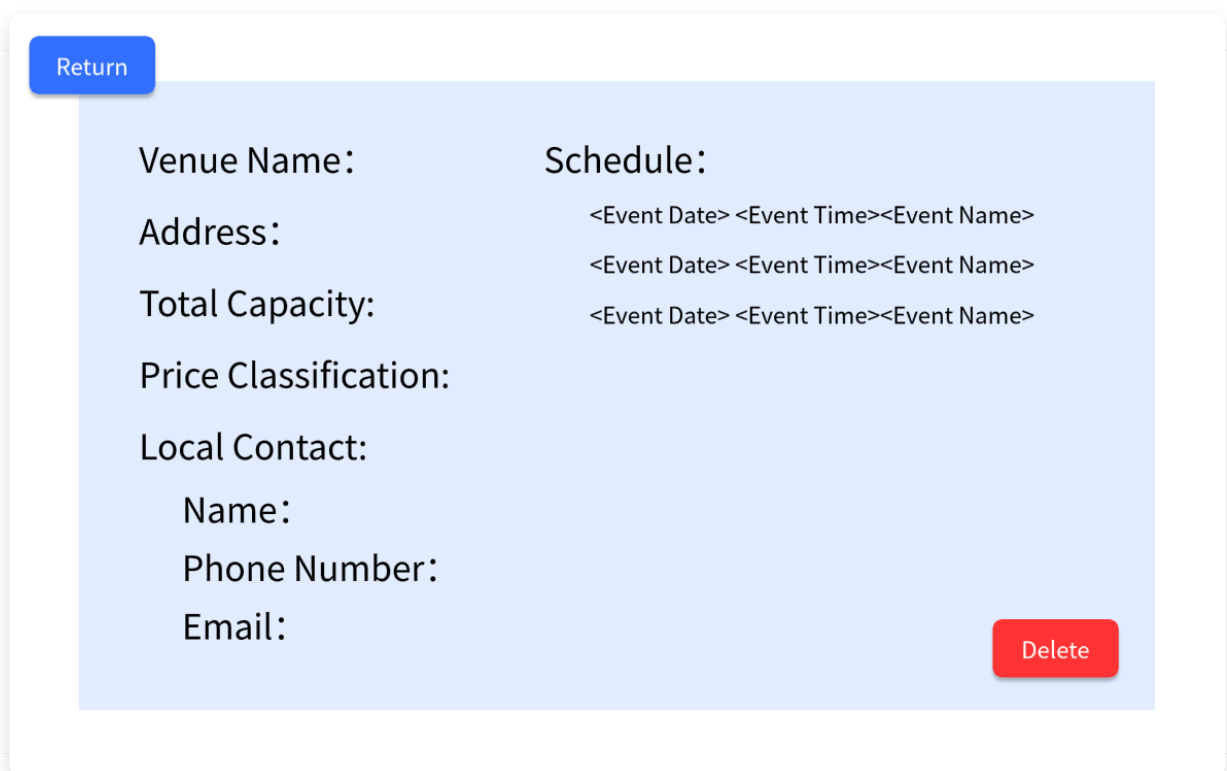
Administrator Venues Detail Page

4.4 Account Pages

4.4.1 Search Page

Home	Profile	Venues	Accounts

| Identification ▾ | input email or user name...... | Search | New Account |

Name: XXXX
Email: XXXXXXXX@email.com

Name: XXXX
Email: XXXXXXXX@email.com

Name: XXXX
Email: XXXXXXXX@email.com

Name: XXXX
Email: XXXXXXXX@email.com

Name: XXXX
Email: XXXXXXXX@email.com

Name: XXXX
Email: XXXXXXXX@email.com

Administrator Account Search Page

4.4.2 Create Page

Return

Identification: choose ▾

Name: XXXX

Email: 123456789@email.com

Password: *******

Verify Password: *******

Sign in   Cancel

Administrator Account Create Page

4.4.3 Edit User Page

Administrator Account Edit User Page

4.4.4 Edit Organizer Page

Administrator Account Edit Organizer Page

4.4.5 Edit Administrator Page

Administrator Account Edit Administrator Page

Milestone 1 Requirements Analysis

Distribution of work on this milestone

Overall Distribution of Work

Team Member	@Victoria	@Wenyi	@Kira210	@sukikatte	@Yuki	@22207285	@hs	@boran
Percentage	12%	12%	12%	12%	12%	12%	12%	12%

Task Allocation

Item	Contributor 1	Contributor 2	Contributor 3	Reviewer
Requirement Analysis	@Yuki			@Victoria, @hs
Use Case Diagram	@Kira210			@boran, @Wenyi, @Victoria, @hs
Domain Model	@Victoria			@boran, @hs
System Glossary	@sukikatte(90%)	@hs(10%)		@Victoria, @Wenyi
UI Prototypes	@hs(80%)	Other Members(20%)		@Victoria, @22207285
Use Case 1: Administrator	@22207285			@Victoria, @Yuki, @hs
Use Case 2: Organizer	@boran			@Victoria, @Wenyi, @hs
Use Case 3: User	@Wenyi			@Victoria, @boran, @hs

Reflection Statements

Item	Contributor 1	Contributor 2	Contributor 3	Reviewer

Team Member	Contribution Reflection Statement
@Victoria	Mainly responsible for filling in member information, creating domain model diagram until the 5th final version, reviewing the work of other members and providing suggestions, leading the overall project planning, drafting and task allocation, and following up on the team's progress. The members are caring, cooperative and always dare to raise opinions and questions:)
@hs	Completed all UI Prototypes/Sketches sections; collaborated with other members on System Glossary section;
@Wenyi	Completed all things in user use case. Helped to devise events terms (only the user) for Use Case Diagram. Reviewing the work of other members and providing suggestions,as well as follows up on team progress.
@Boran	Completed all tasks in the organizer use cases and working on designing event terminology for the use case diagram and domain model (only for the organizer). Reviewing the work of other members, providing suggestions, and following up on team progress.
@Yuki	Primarily responsible for researching and analyzing assignment documents and converting them into requirement analysis reports (system objectives, core functions, system boundaries, etc.). Reviews the sections handled by other members and provides suggestions, as well as follows up on team progress.
@22207285	Completed all tasks in the administrator use cases. Helped to improve the UI Prototypes (only for the administrator). Reviewing the work of other members and providing suggestions, and following up on team progress.
@Kira210	completed all tasks in the use case diagram drawing and modification work. Reviewing the work of other members and providing suggestions, as well as follows up on team progress.
@Sukikatte	Responsible for compiling and refining the System Glossary, ensuring that all terminology used throughout the project was clearly defined and accessible to all team members. Reviewing sections contributed by other members, and following up on team progress.