

# CSCI 2720 Building Web Applications (Group 5 Report)

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## ABSTRACT

This project simplifies cultural event management for users and administrators, offering features like map browsing, program searching, and admin controls. The system ensures a seamless Single Page Application (SPA) experience for all stakeholders.

## WORKFLOW OVERVIEW

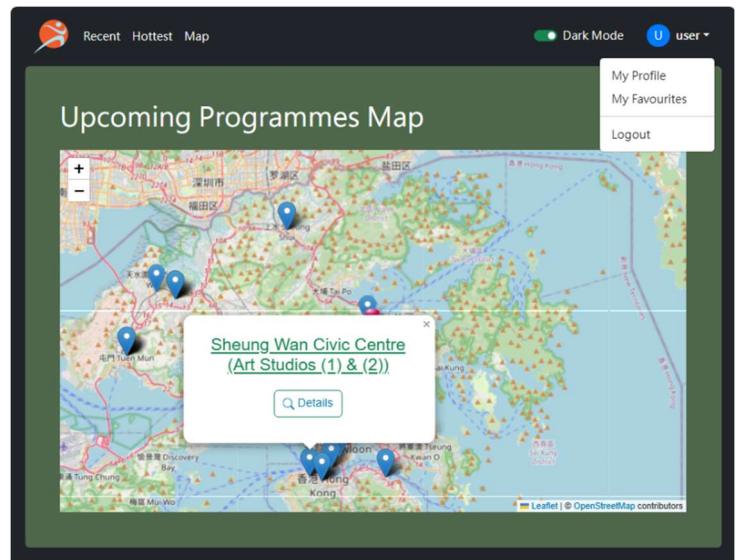
Structure and Development

### Frontend

- Built with Typescript and ES modules for optimized bundle sizes and modern browser compatibility.
- Developed using React for component reusability.

### Backend

- Implemented using CommonJS modules in Node.js for middleware compatibility.
- **Development Tool:**
  - Concurrently: Runs both frontend and backend servers simultaneously for efficient iterative development.
- **Installation Instructions**
  - For detailed installation steps, please refer to the GitHub repository or the project README: <https://github.com/MiffyLeung/CSCI2720-Project>.



## DATASET

The system utilizes the publicly available dataset:

Cultural Programmes [1]: Includes program titles, venues, dates, descriptions, and presenters.

## FEATURES

### Login System

- **User Accounts:** Access based on roles (admin or normal user).
  - **Test Accounts:**
    - Username: **admin**, Password: **password123**
    - Username: **user**, Password: **password123**

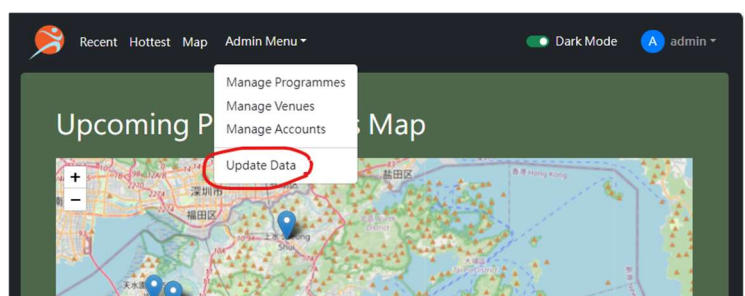
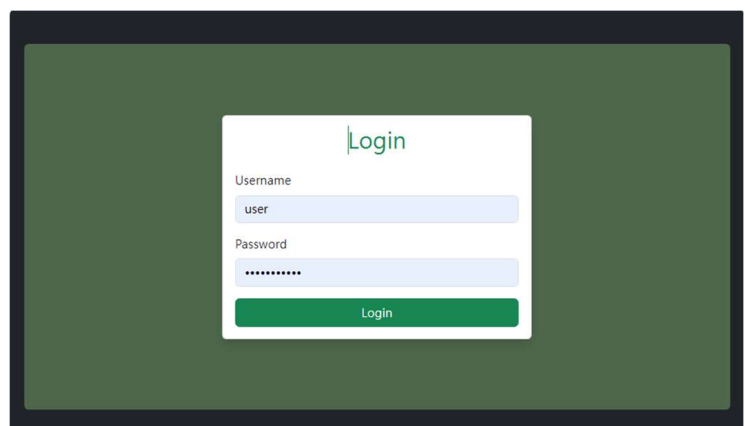
### User Roles and Interfaces

#### 1. Normal User:

- Can view and search locations, interact with the map, and manage favorite locations.

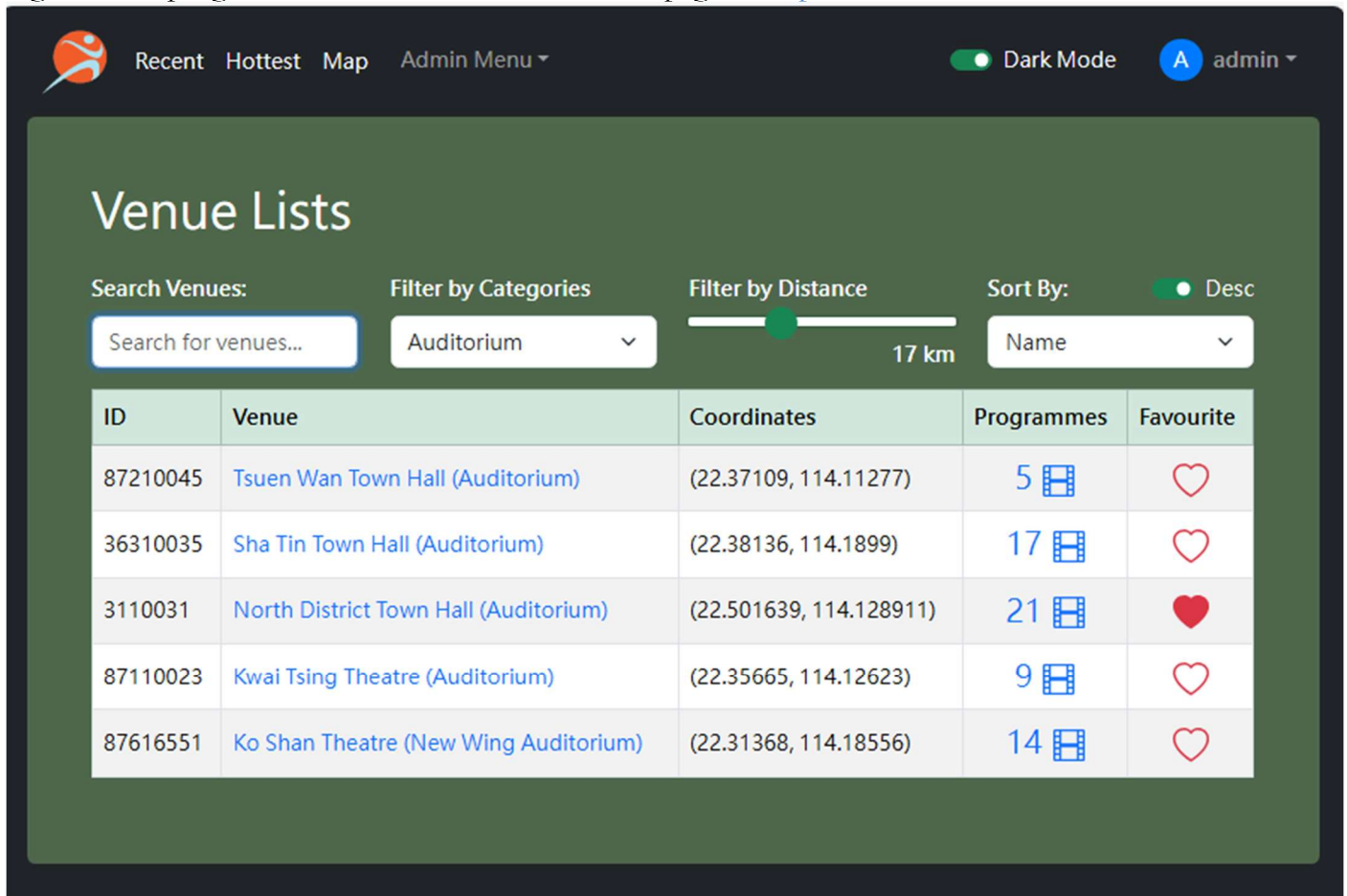
#### 2. Admin User:

- Gains access to an **Admin Menu** at the top of the interface, allowing them to:
  - Edit and update user and event data.
  - Perform CRUD operations on the database.
  - If this is your first time using the application, it is **recommended to log in with the admin account to retrieve venue and programme data online**



## Homepage Overview

After logging in, the homepage displays a list of venues. You can always return to this page by clicking the logo at the top-right corner. The default URL for this page is: <http://localhost:3000/>.



## Key Features

- List Venues:**
  - List all venues in a sortable and filterable table (e.g., number of events).
  - Each row has hover effects for better visual feedback when interacting with the list.
  - Click on any row to navigate to a detailed page for the selected venue.
- Search Venues:**
  - Enter any text to filter the list of venues based on their names. Results are displayed instantly.
- Categories:**
  - Filter venues by their specific categories for focused browsing.
- Distance:**
  - Utilize the user's browser or mobile geolocation to calculate distances between the user and venues, narrowing down the results.
    - If the user's location cannot be retrieved or if the user is outside the region, CUHK will be used as the default central point.
    - For venues without coordinate data, they are treated as having a distance of 0.
- Sorting:**
  - Sort venues by VenueName, MyFavourite, ProgrammesCount, or Distance.
  - The interface includes a switch for toggling between [Descending/Ascending] or [Yes/No] sorting.
- Favorite Management:**
  - Click the heart icon to instantly add or remove a venue from your favorites.
  - A toast (stack) notification displays the result of each action.
  - The backend stores MyFavourite data specific to each user, ensuring previously saved favorites are visible upon revisiting the page.

## My Favorites Page:

ID	Venue	Coordinates	Programmes	Favourite
108	<a href="#">Tuen Mun Public Library</a>	(0, 0)	11	
101	<a href="#">Ping Shan Tin Shui Wai Public Library</a>	(0, 0)	7	
69	<a href="#">Lockhart Road Public Library</a>	(0, 0)	6	
107	<a href="#">Tsz Wan Shan Public Library</a>	(0, 0)	3	
104	<a href="#">Tsim Sha Tsui Public Library</a>	(0, 0)	3	
11	<a href="#">Hong Kong Coliseum</a>	(0, 0)	2	
87315528	<a href="#">Yuen Long Theatre (Exhibition Corner)</a>	(0, 0)	1	
777	<a href="#">CUHK University Library</a>	(0, 0)	0	

- Click the username at the top-right corner to navigate to the MyFavourite page.
- View favorite locations in a separate list.

## Map Browsing

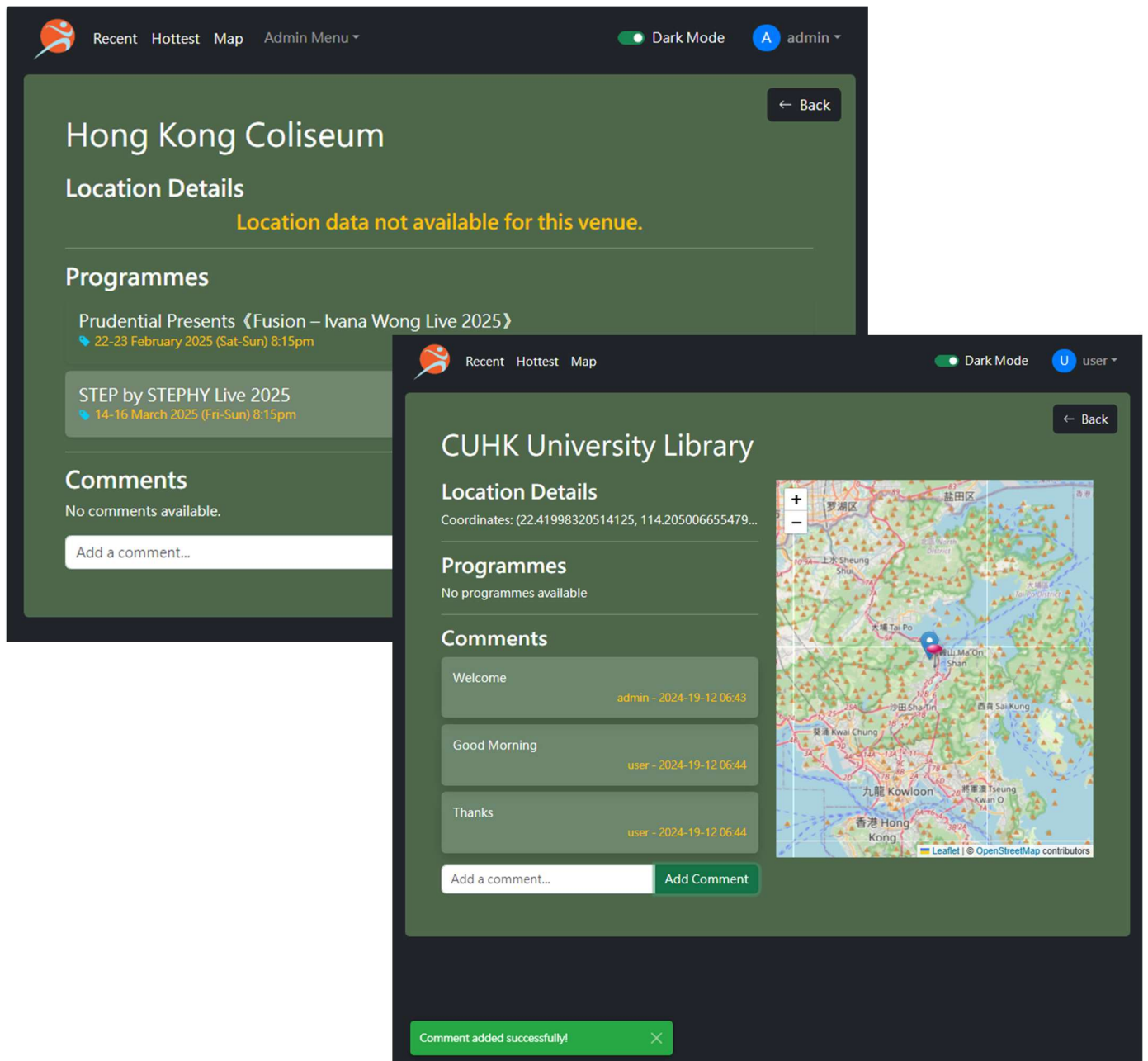
Upcoming Programmes Map

Tuen Mun Town Hall  
(Lecture Room (1))

[Details](#)

- View all locations on a map with clickable links to details.

## Venue Information Page



- Responsive Design:**
  - Adapts to the user's screen width for optimal display.
  - Venue details adjust dynamically:
    - With Coordinates:** A map is displayed alongside the content.
    - Without Coordinates:** Content is displayed in full width for better readability.
- Associated Activities:**
  - The system calculates and lists all activities associated with the venue.
  - Interactive Effects:**
    - Hovering over an activity highlights it with a shadow effect.
    - Clicking on an activity opens a brief summary, with options to **Like** the activity or navigate to the detailed event page.
- Comments Section:**
  - Allows users to leave comments that can be viewed by others, fostering interaction and feedback sharing.
- Navigation Button:**
  - A [BACK] button is available to return to the previous page.



## ADMIN VIEW

- Full CRUD functionality for **User** / **Events** / **Location**

### Manage Accounts

Able to CRUD user data (username and password only) in the local database.

The screenshot shows a dark-themed interface with a modal titled "Edit Account". At the top, there are dropdowns for "Sort By: Username" and "Order: Ascending". The modal contains three input fields: "Username" with the value "user", "New Password" with the placeholder text "Keep it blank if no changes are needed.", and a "Role" section with three buttons: "admin", "user" (which is highlighted), and "banned". At the bottom right of the modal are "Save" and "Cancel" buttons.

### Manage Venue


Modify venue information in the database.

The screenshot displays the "Manage Venues" page in a dark theme. The page has a header with navigation links (Recent, Hottest, Map, Admin Menu), a "Dark Mode" toggle, and a user profile "A admin". Below the header, there's a section for "Manage Venues" with an "Add Venue" button. It includes search and filter options: "Search Venues:" with a text input, "Filter by Categories" with a dropdown set to "All Categories", "Filter by Distance" with a slider set to "50 km", and "Sort By:" with a dropdown set to "Favourite". A table lists venues with columns: ID, Venue, Coordinates, Programmes, Favourite, and Actions. The table contains five rows of data. An "Edit Venue" modal is open over the table, showing fields for ID (101), Name (Ping Shan Tin Shui Wai Public Library), Latitude (22.447368282097443), and Longitude (114.0048771800959). The modal also has "Save" and "Cancel" buttons.

ID	Venue	Coordinates	Programmes	Favourite	Actions
101	Ping Shan Tin Shui Wai Public Library	(22.447368282097443, 114.0048771800959)	7		<button>Modify</button> <button>Delete</button>
104	Tsim Sha Tsui Public Library	(22.302306, 114.17827)			
107	Tsz Wan Shan Public Library	(null, null)			
108	Tuen Mun Public Library	(null, null)			
11	Hong Kong Coliseum	(null, null)			

## Manage Programmes (Events)

Modify programme information in the database.

Recent Hottest Map Admin Menu

Dark Mode





A admin

# Manage Programmes

Add Programme

Filter Programmes:

Sort By: Date

Title	Date	Presenter	Venue	Ranking	Actions
Introductory Session on the Multimedia Information System (For readers aged 12 or above)	1, 8, 15/12/2024 (Sun) 4:00pm-5:00pm	Presented by Hong Kong Public Libraries (LCSD)	Hong Kong Central Library	1 	<div>Edit</div> <div>Delete</div>
La Salle Old Boys' Chinese Orchestra Concert – Hope for the Future	15 Dec 2024 (Sun) 7:30pm	Presented by La Salle College Old Boys' Association	Kwai Tsing Theatre (Auditorium)	1 	<div>Edit</div> <div>Delete</div>
Meet-the-Authors 2024: Literary Traveller – Japanese Culture and My Novel Writing	15/12/2024 (Sun) 2:30pm-4:00pm	Presented by Hong Kong Public Libraries (LCSD)	Tiu Keng Leng Public Library	0 	<div>Edit</div> <div>Delete</div>
Mini Exhibition on "Smart Use of Communications Services" 2024/25	1-15/12/2024	Presented by Hong Kong Public Libraries (LCSD)	Sau Mau Ping Public Library	0 	<div>Edit</div> <div>Delete</div>

Recent Hottest Map Admin Menu

Dark Mode

A admin






# Manage P

Add Programme

Filter Programmes:

Type to

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Mini Exhibition on "Smart Use of Communications Services" 2024/25	1-15/12/2024	Presented by Hong Kong Public Libraries (LCSD)	Sau Mau Ping Public Library	0 	<div>Edit</div> <div>Delete</div>
Ngau Chi Wan Civic Centre Venue Partnership Scheme Game Workshop: Rescue from Underwater by Jumbo Kids				0 	<div>Edit</div> <div>Delete</div>

Edit Programme

Event ID

166657

Title

Introductory Session on the Multimedia Information S

Venue Name

Hong Kong Central Library

Presenter

Presented by Hong Kong Public Libraries (LCSD)

Dateline

1, 8, 15/12/2024 (Sun) 4:00pm-5:00pm

Duration

1hr

Price

Description

Cancel

Save

## OTHER FEATURES:

- **Access peronal options** and **logout** via the top-right menu.
- **Like button** Available under “What’s new” & “Hottest”.  
(see below)

## Programmes(Events) list

### 1. Backend-Driven Recommendations:

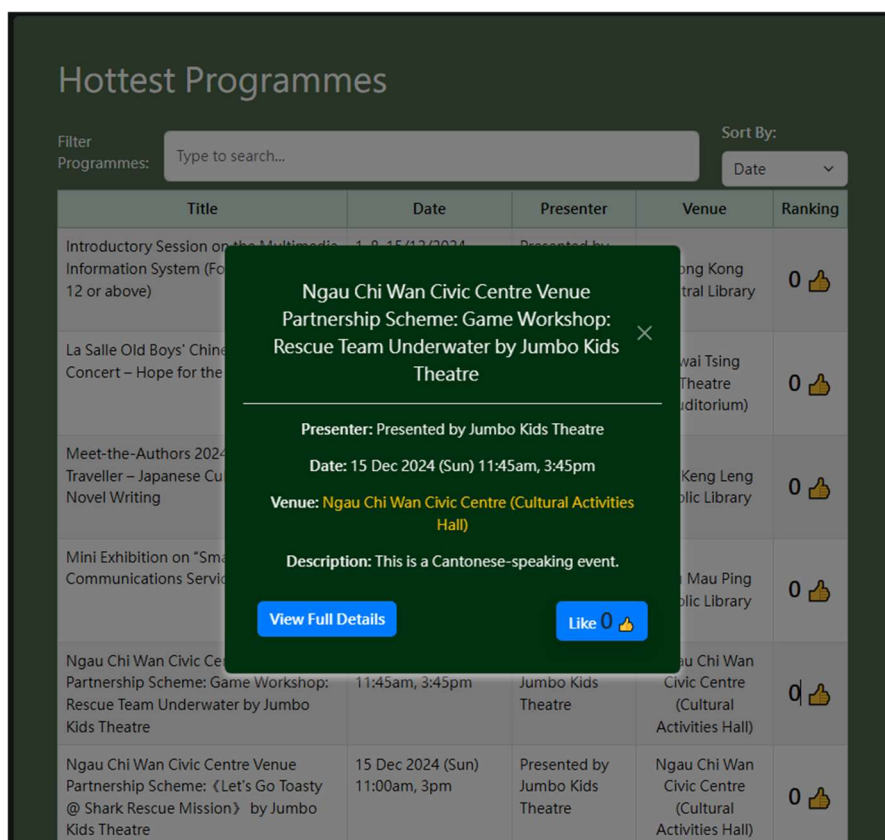
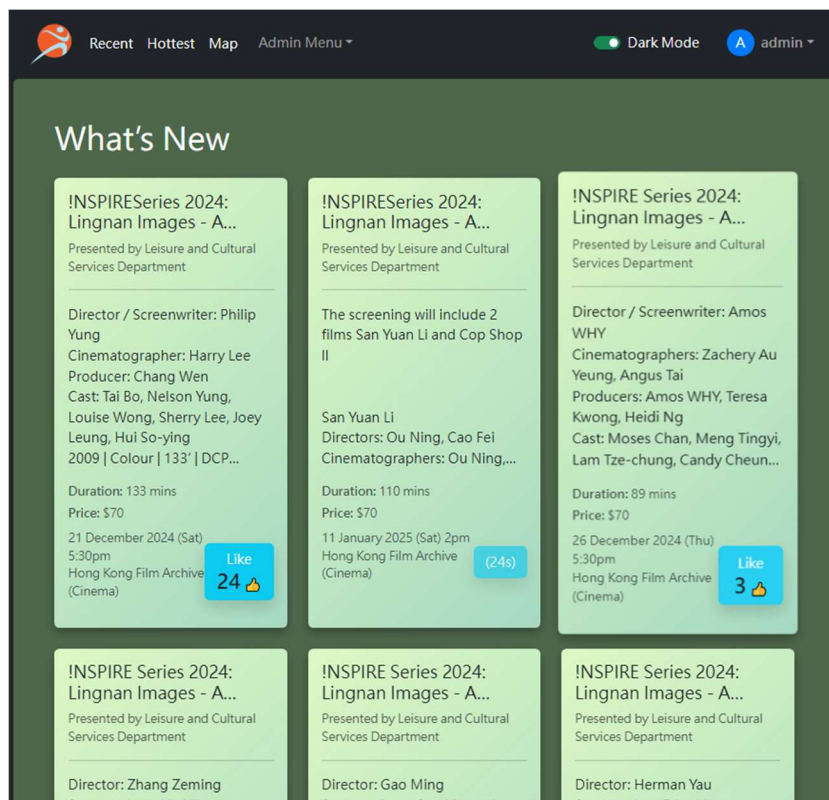
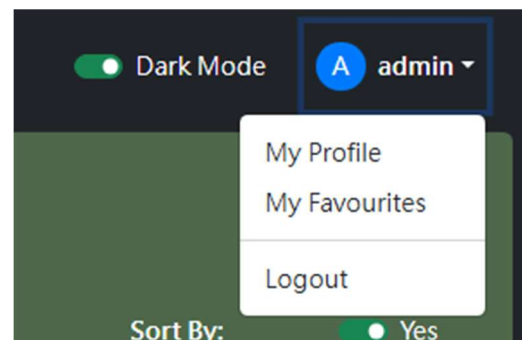
- The backend calculates the latest and most relevant events to recommend to users, displayed in an engaging **card view** with a visual grid layout.

### 2. Interactive Visuals:

- Each card features a **mouseover zoom effect**, providing a dynamic and modern user experience. Clicking on a card navigates the user to the detailed event page for further exploration.

### 3. Robust Like Functionality:

- Users can express interest in events by clicking the **LIKE** button.
- To prevent accidental clicks or fraudulent activities, each venue can only be liked once every **30 seconds**, even if the user navigates away and returns to the page.



## Hottest Programmes

### 1. Programmes Table:

- Displays all programmes in a structured table format for easy browsing.

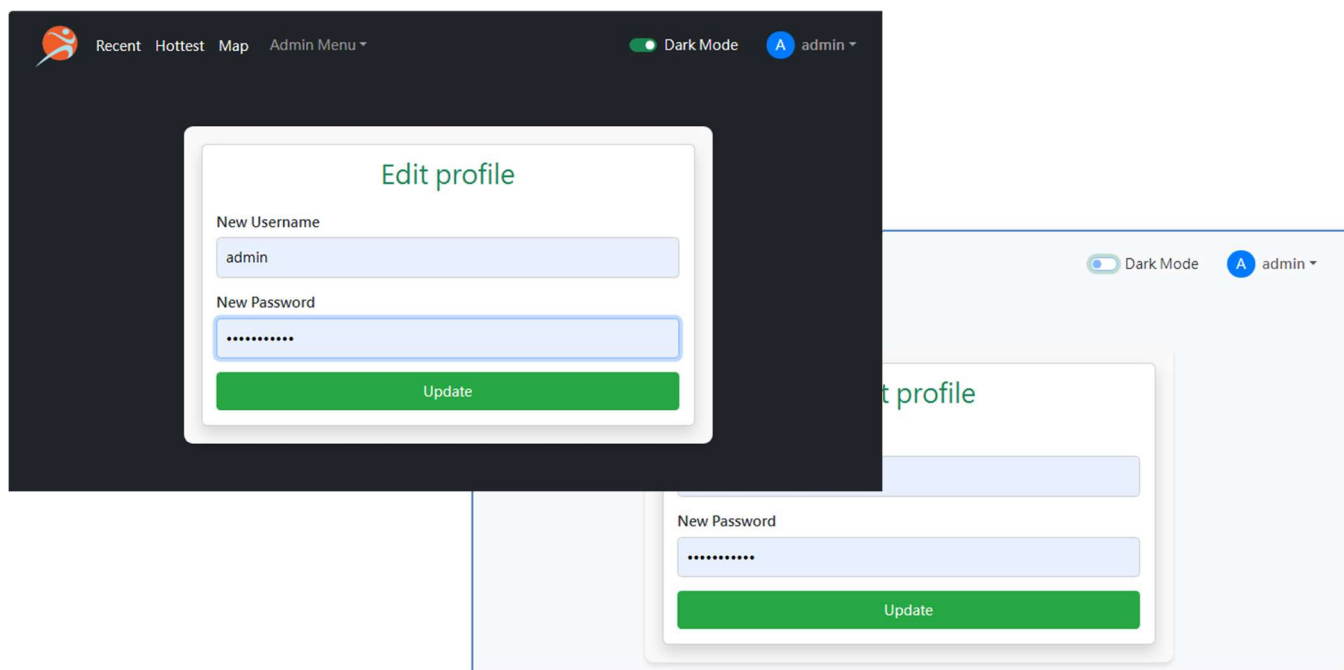
### 2. Sorting and Text Filtering:

- Includes basic sorting options and a text-based search filter to quickly locate specific programmes.

### 3. Interactive Actions:

- Users can click on a programme to open a brief overview, with the option to **Like** the programme or navigate to a detailed introduction page for more information.

- **Dark/Light Mode:** Toggle between themes.



- **Like Button:** Available under “What’s New”.

## BIBLIOGRAPHY

[1] "Cultural Programmes | DATA.GOV. HK."

<https://data.gov.hk/en-data/dataset/hk-lcsd-event-event-cultural>

