



THE DEPARTMENT OF
**COMPUTER SCIENCE
& ENGINEERING**
計算機科學及工程學系

Web-Based Location Scouting and Locker Management Solution with AI-Driven Analysis

Law Lai Yin
Advised by Dr. Cecia Ki Chan



Overview

Problem

- Process of identifying optimal locations was inefficient
- Lack of data analysis integration
- Deficit in user-friendly interfaces

Solution

- Meticulously designed portal to support various functionalities
- Leverage AI to enhance efficiency

Objectives

To develop user-centric portal interface and pages

To develop a comprehensive dashboard with usage analysis

To implement a task assignment feature to streamline the location scouting process.

To construct an interactive platform with a real-world map to visualize potential parcel locker locations.

Design

Programming Language Used

- HTML
- CSS
- Typescript



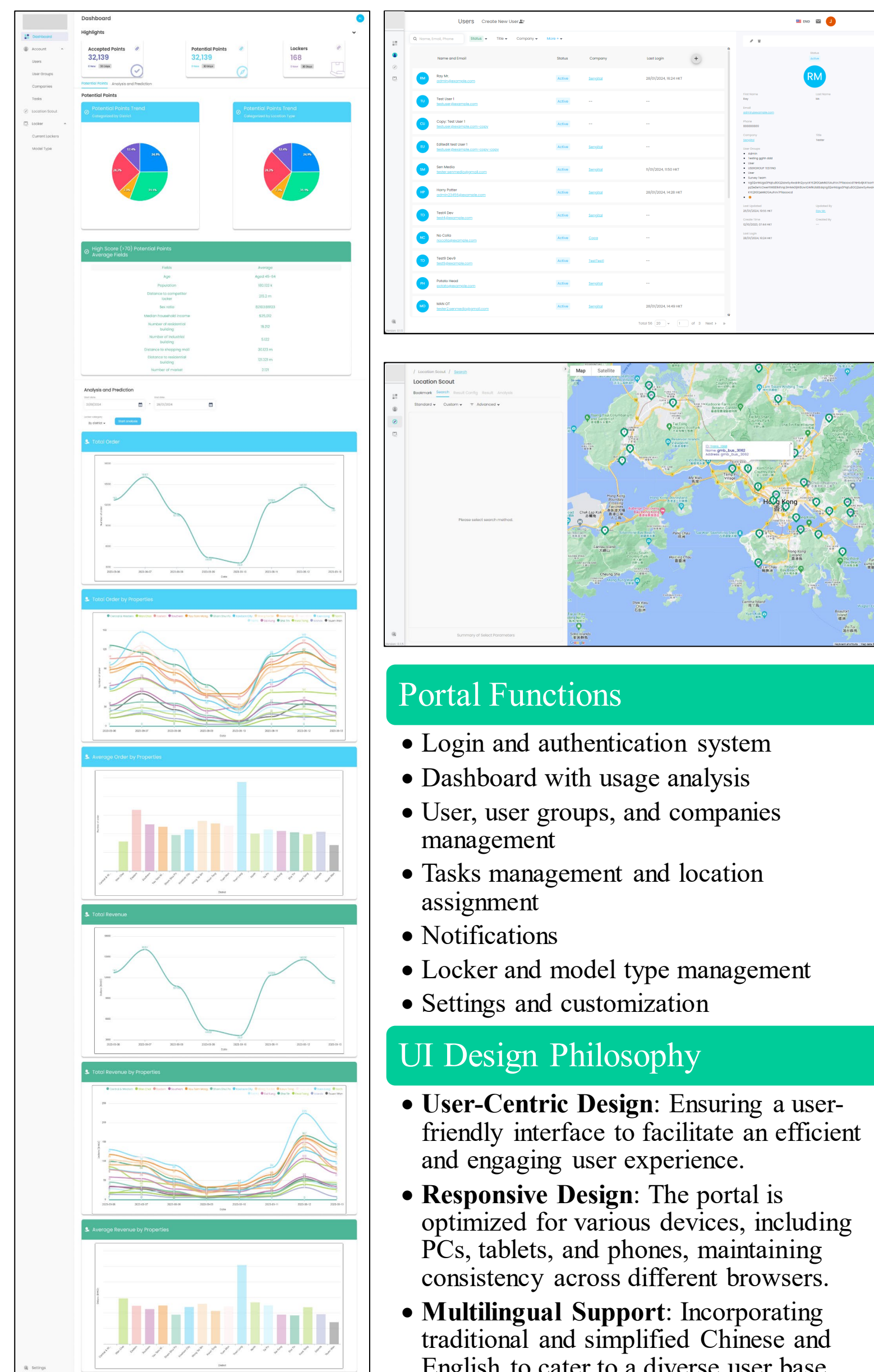
Framework

- React

External Library Used

- Fuse React
- MUI
- TailwindCSS
- ApexCharts

Design



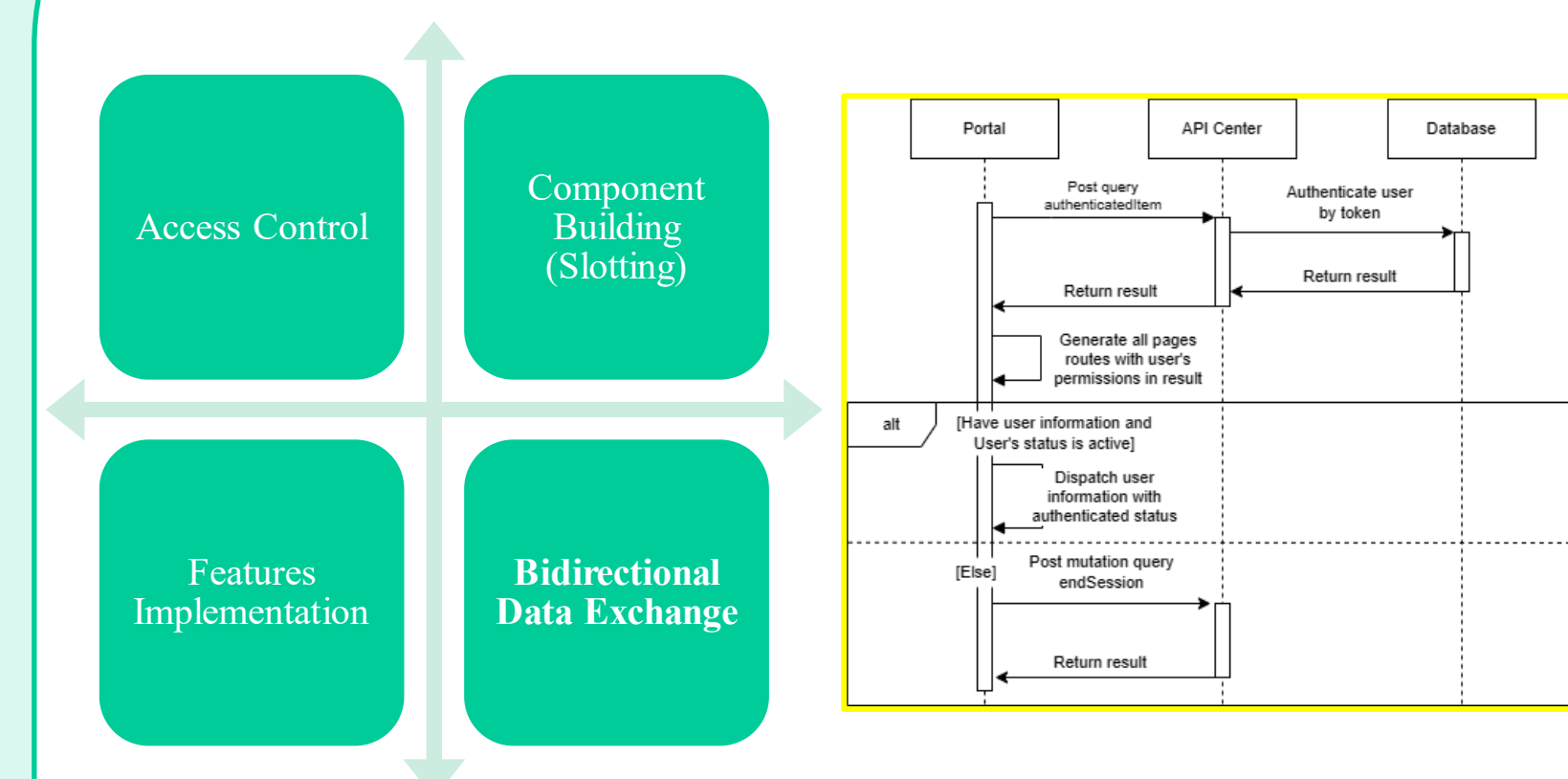
Portal Functions

- Login and authentication system
- Dashboard with usage analysis
- User, user groups, and companies management
- Tasks management and location assignment
- Notifications
- Locker and model type management
- Settings and customization

UI Design Philosophy

- **User-Centric Design:** Ensuring a user-friendly interface to facilitate an efficient and engaging user experience.
- **Responsive Design:** The portal is optimized for various devices, including PCs, tablets, and phones, maintaining consistency across different browsers.
- **Multilingual Support:** Incorporating traditional and simplified Chinese and English to cater to a diverse user base.

Implementation



During the portal's implementation, four critical aspects were emphasized: Access control was meticulously crafted, ensuring robust user permissions and security. Component building focused on creating reusable, efficient UI elements. Feature implementation was highlighted by the sophisticated development of location scouting functionalities. Finally, bidirectional data exchange was achieved through the integration of GraphQL and Restful API, facilitating seamless data flow between the front-end and back-end, enhancing overall system responsiveness and efficiency.

Conclusion

Portal Interface and Pages Design

- The development of the front-end portal successfully achieved the objective of creating user-centric and aesthetically compelling UI designs.

Dashboard and Usage Analysis

- The comprehensive dashboard effectively displays crucial data such as potential points and locker statistics. The integration of charts and analytics tools facilitates insightful decision-making, aligning with the objective of presenting data in a user-friendly manner.

Task Assignment Workflow

- The implementation of the task assignment feature within the portal significantly streamlined the location scouting process. It also enhanced collaboration and efficiency among team members, fulfilling the objective of a cohesive and functional task management workflow.

Location Visualization and AI Interaction

- The construction of an interactive platform with a real-world map successfully visualized potential parcel locker locations. The interactive and user-friendly interface for inputting search parameters and the integration of AI to generate potential locations met the objectives efficiently.