

**TRIMESTER March/April, 2025**

**CSE6224 Software Requirements Engineering**

**PROJECT 1**

**Campus Accessibility Navigation System with Facilities and Event Integration**

| Name | Student ID | Course |
| --- | --- | --- |
| Chia Kok Ang | 242UC24423 | Bachelor of Computer Science |
| Wang Kuang Wei | 242UC2451W | Bachelor of Computer Science |
| Sim Boon Xun | 242UC2451H | Bachelor of Computer Science |
| Hong Chia Qian | 1211107977 | Bachelor of Computer Science |

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# **Introduction**

## **Purpose**

The purpose of this system is to provide an accessibility-focused navigation and information platform for campus staff and students. It aims to facilitate convenient access to real-time information about campus facilities, events, and individual class schedules, thereby enhancing the campus experience and addressing the needs of users with mobility challenges.

## **Scope**

This system covers querying detailed information and real-time statuses of campus facilities, interactive campus map navigation, display of campus events and personal class schedules, as well as notification delivery. It targets all campus community members, with particular attention to users requiring accessibility accommodations.

## **Product overview**

### **Product perspective**

The system acts as a complementary digital service within the campus ecosystem, integrating with existing campus facilities management and event calendar systems. It provides a unified mobile interface supporting accessible navigation and real-time information updates.

### **Product functions**

* Query detailed information and real-time status of campus facilities such as parking lots, study rooms, and restrooms.
* Browse campus maps with clickable locations linked to Google Maps for navigation.
* View detailed information on campus events including date, time, and location.
* Access personal class schedules for enrolled students.
* Receive push notifications about facility maintenance, event changes, and class schedule updates.
* View latest news and announcements issued by the university.

### **User characteristics**

The primary users include campus staff and students with basic smartphone proficiency, including individuals with disabilities or special accessibility requirements.

### **Limitations**

The system currently does not support offline map navigation. Real-time data depends on synchronization with campus management systems. An internet connection is required for full functionality.

## 

## **Definitions**

* **Accessibility Navigation**

Navigation designed specifically to accommodate users with mobility challenges.

* **Facility Status**

Real-time availability and condition of campus facilities.

* **Notification System**

A module that pushes important campus messages and alerts to users.

# **References**

## **…**

# **Requirement**

## **Functions**

* Users shall be able to query detailed information and real-time status of campus facilities (e.g., parking availability, restrooms).
* Users shall be able to browse the campus map and click on locations to open Google Maps navigation.
* The system shall display comprehensive campus event information, including date, time, location, and details.  
  Students shall be able to view their individual class schedules.
* The system shall deliver notifications regarding facility maintenance, event updates, and class schedule changes.
* Users shall be able to access the latest campus news and announcements.

### **Requirements Prioritization and Classification**

This section will include the prioritization of requirements into

Must-be,

Performance, and

Excitement categories,

based on Kano model data gathered from user questionnaires and interviews.

## **Performance requirements**

* The system shall respond to user queries within 3 seconds.
* Notifications shall be delivered with a maximum delay of 1 minute

## **Usability requirements**

* The user interface shall be clean, intuitive, and optimized for mobile devices.
* Accessibility features such as high contrast mode and screen reader compatibility shall be supported.

## **Interface requirements**

* The system shall integrate with the campus facilities management database.
* The system shall integrate with the campus event management system.
* The system shall use the Google Maps API for navigation features.

## **Logical database requirements**

* The system shall maintain data tables for campus facilities, events, class schedules, and notifications.
* Relationships between these entities shall be logically defined to support efficient queries.

## **Design constraints**

* The system depends on real-time synchronization with existing campus management systems.
* The system shall be compatible with Android and iOS mobile platforms.

## **Software system attributes**

* **Reliability**

The system shall ensure accurate and timely delivery of information and notifications.

* **Security**

The system shall protect user data privacy and prevent unauthorized access.

* **Maintainability**

The system shall be modularly designed to facilitate future updates and maintenance.

## **Supporting information**

* API documentation for campus management systems integration.
* Google Maps API developer documentation.

# **Verification**

## **[Parallel to subsection in Section 3]**

# 

# **Appendices**

## **Assumptions and dependencies**

## **Acronyms and abbreviations**