

**CSE6224 Software Requirements Engineer**

**System Documentation**

**for**

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

**TT3L**

**GROUP 1**

**Prepared by:**

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| **NAME** | **STUDENT ID** | **EMAIL** |
| MUHAMMAD NAQIB BIN ZULL AZRI | 1211112306 | 1211112306@student.mmu.edu.my |
| MUHAMMAD HARITH AIMAN BIN MUHD ZULKAPLI | 1211112350 | 1211112350@student.mmu.edu.my |
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# Elicitation Execution

## 

1. **Techniques**
   1. **Techniques 1: Interview**

**Objective:** Gather user feedback from students, staff, and visitors on expected features and usability for the MMUAccess system.

**Participants:** 22 respondents (from different faculties and accessibility backgrounds)

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| **Interview Questions** | **Feature** | **Insight Gained** | **Kano Category** |
| 1. Do you think an app that finds accessible routes is necessary? | Route Accessibility | Users consider this essential for daily navigation | Must-Have |
| 2. Would real-time updates about elevator status help you? | Real-Time Alerts | Elevators & blocked paths are common pain points | Performance |
| 3. Would suggestions for nearby restrooms or ramps help? | Accessibility POI Suggestions | Adds convenience and confidence in navigating campus. | Delighter |
| 4. Would you use screen reader or voice navigation? | Accessibility Tools | Some users rely on assistive tech, especially visually impaired | Must-Have |
| 5. Would route time estimation (for wheelchair/walking) be useful? | Travel Time Estimation | Most users want optimized timing info | Performance |
| 6. Would multi-language support help you or others? | Language Options | Multilingual environment—Bahasa & English were top picks | Must-Have |
| 7. What feature would make this app exciting for you? | Custom Feature Suggestions | Smart voice commands, vibrational alerts, and restroom alerts were suggested. | Delighter |

**Outcomes:**

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| **Feature** | **Kano Category** | **Justification** |
| Route optimization avoiding stairs | Must-Have | Users with mobility needs find this critical. |
| Real-time updates (construction, elevator) | Performance | Increases trust and reliability |
| Screen reader & voice command compatibility | Must-Have | Supports inclusive access |
| Suggesting accessible toilets/elevators nearby | Delighter | Unexpected, but highly useful |
| Time estimation for selected routes | Performance | Users want efficiency |
| Multi-language support | Must-Have | Diverse language needs from international/local students |
| Custom alerts (vibration/voice) | Delighter | |  | | --- | |  |  |  | | --- | | Increases accessibility and engagement | |

* 1. **Techniques 2: Observation**

## Article 1

**Title:** Exploring the role of configurational accessibility of alleyways on facilitating wayfinding transportation within the organic street network systems

**Authors:** Ahmad Al-Radaideh, Akram Alkouz, Ahmad Awajan

**Publisher**: Elsevier – *Computers in Industry*

**Link**: <https://www.sciencedirect.com/science/article/pii/S0967070X24002464>

### Objective:

The primary objective of this study is to develop a smartphone-based navigation system that addresses the specific needs of individuals with mobility impairments. Unlike conventional navigation apps that overlook accessibility barriers, this system aims to provide safe and reliable route guidance by considering physical obstacles such as stairs, steep inclines, and inaccessible entrances. The goal is to promote greater independence and ease of movement for users in both indoor and outdoor campus and urban environments.

### Methodology:

The navigation system is built on top of OpenStreetMap (OSM), which is enhanced with detailed accessibility data including information on ramps, elevators, and path widths. A mobile application was developed to display real-time navigation, utilizing smartphone sensors to detect obstacles and allowing users to provide feedback on accessibility issues. This feedback mechanism helps keep route information current. The system underwent usability testing with participants who have mobility impairments, ensuring that its design and functionality were evaluated and improved based on real user experiences.

### Findings:

The system improved navigation for users with mobility impairments by providing more accurate and accessible routes than standard apps. Real-time updates and user feedback helped adapt routes to changing conditions like blocked paths. Usability testing showed high user satisfaction, especially with the app’s simplicity, clear guidance, and focus on accessibility.

## Article 2

### Objective:

### Methodology:

### Findings:

## Article 3

### Objective:

### Methodology:

### Findings:

**Observation Technique Tables**

**Key Observation**

* 1. **Techniques 3: Brainstorming**

**Outcomes:**