UTM UNIVERSITI TEKNOLOGI MALAYSIA

FACULTY OF COMPUTING
UTM Johor Bahru

SECV2113: Human-Computer Interaction

Semester 01, 2025/2026

Project Part #4: Prototyping & Evaluation

Group 1 Name: SURVIVOR

Lecturer: Dr. Sarina Binti Sulaiman

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Table of Contents

Introduction

The usability testing was conducted to evaluate the "SafeRoute" high-fidelity prototype. Testing took place in various campus locations including residential colleges and academic buildings to simulate real-world usage. Equipment used included desktop computers and mobile devices to test the system's cross-platform responsiveness.

Testing was conducted for three primary tasks:

- **Task 1:** Viewing campus incident alerts (Student).
- **Task 2:** Managing emergencies and dispatching units (Security Officer).
- **Task 3:** Verifying secure entry and motorcycle-accessible delivery zones (Delivery Rider).

Testing Responsibilities:

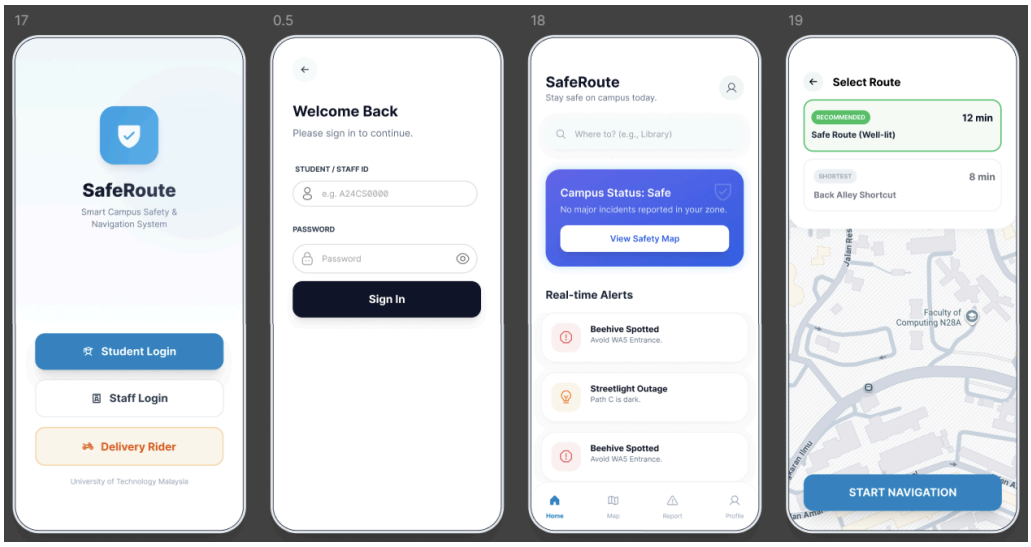
- **Testing for User 1 (Student):** Handled by AHMAD MUNIF BIN BAHARUM.
- **Testing for User 2 (Security Officer):** Handled by MUHAMMAD HAZIM BIN ZULKANAIN.
- **Testing for User 3 (Delivery Rider):** Handled by ABDURRAFIQ BIN ZAKARIA.

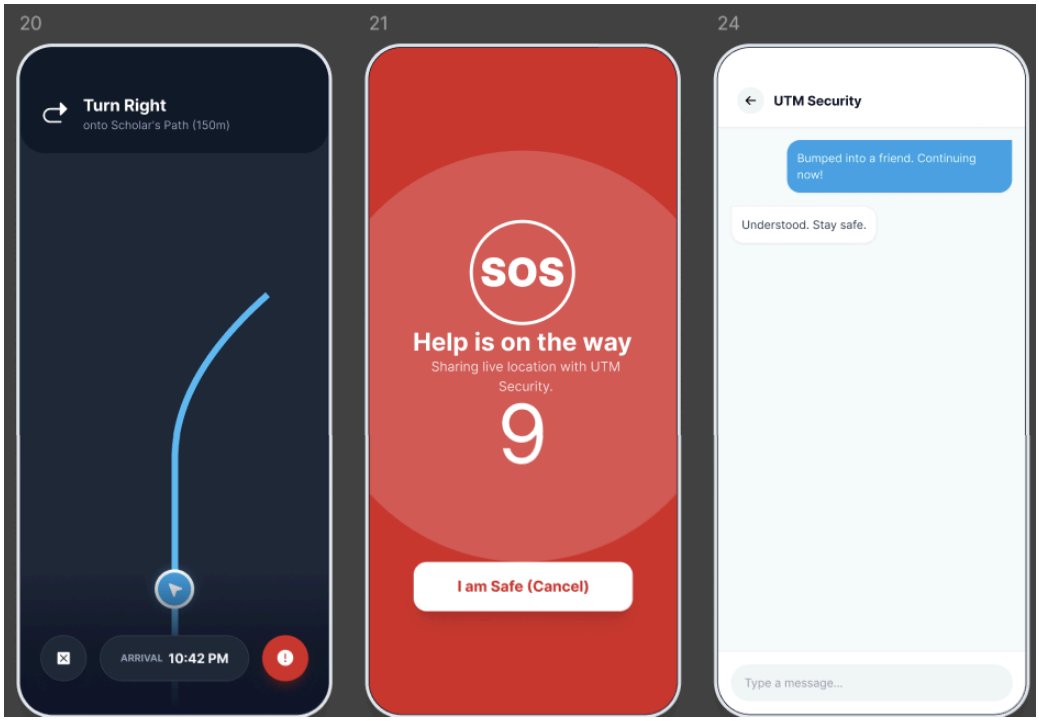
Screenshots of your prototype

{Several screenshots are enough}

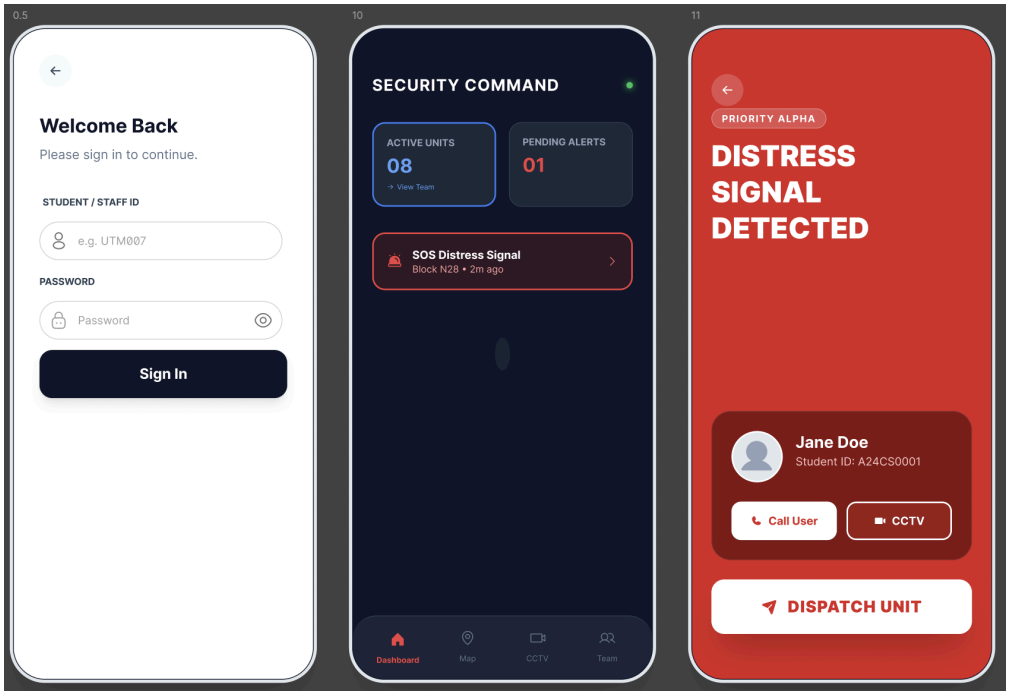
The final design, "SafeRoute," utilizes a centralized dashboard framework to minimize cognitive load.

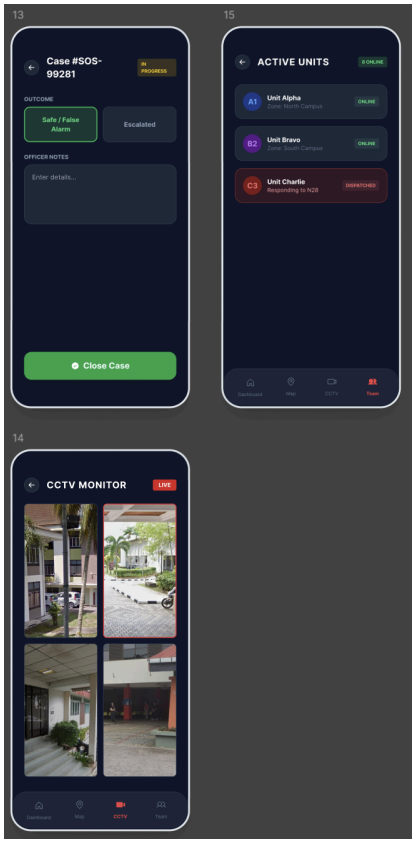
- **Student Navigation:** Features clear route visualization and specialized hazard icons like "potholes" or "poor lighting".



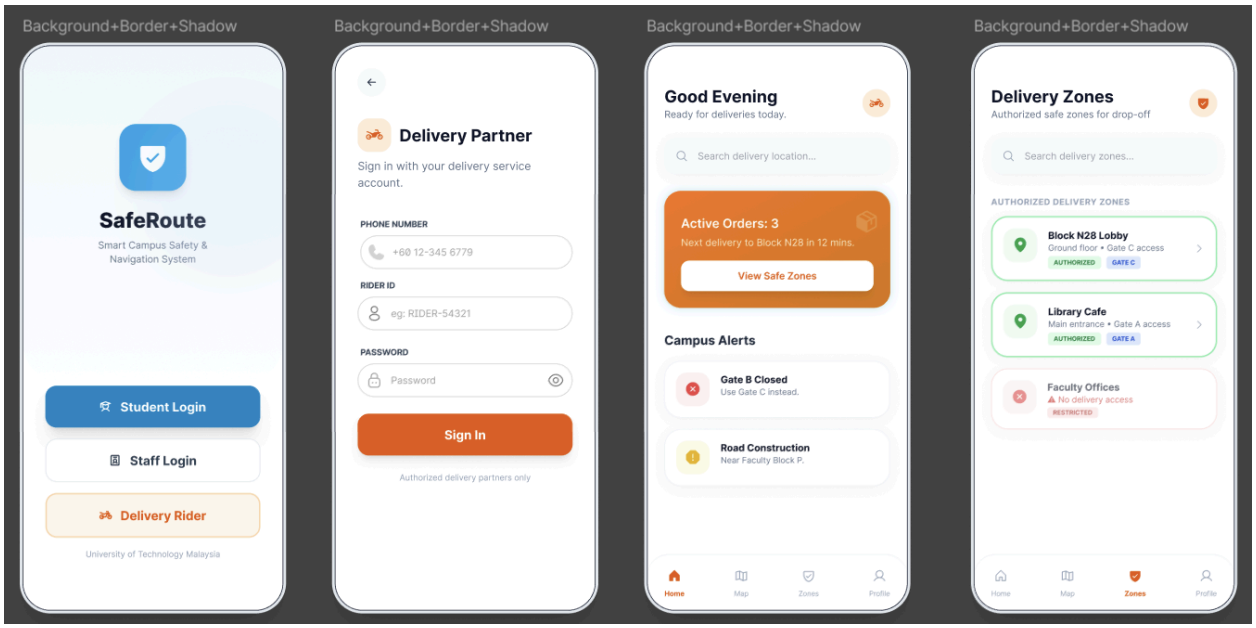


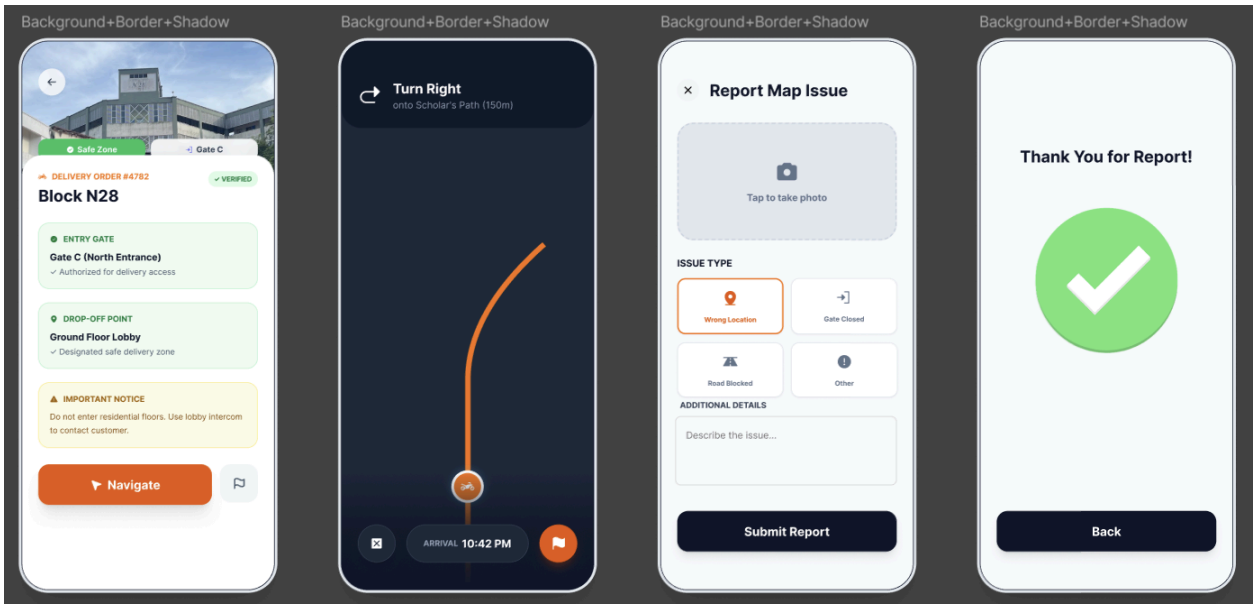
- **Security Command:** A dedicated interface for monitoring distress signals and managing active security units.





- **Delivery Flow:** Mapping of internal service roads and specific building blocks (e.g., "Block C2").





Briefing notes – prepared by {Rafiq}

Usability Testing Briefing Script:

Introduction and Welcome:
"Hello, and thank you for participating in our usability test for the **SafeRoute Campus Safety System**. My name is **[Your Name]**, and I will be guiding you through today's session."

Purpose of the Application:
"The purpose of this system is to enhance the safety of our campus community by providing a fast, accessible, and reliable platform for reporting incidents, requesting emergency assistance, and accessing real-time safety information. Unlike general traffic applications like Waze, SafeRoute is designed specifically to address pedestrian safety, campus-specific hazards, and 'last-mile' navigation within the university grounds."

Background Information:
"The system was developed after identifying critical gaps in existing navigation tools, such as the inability to filter for well-lit walking paths, the lack of motorcycle-specific access routes, and difficulties in pinpointing off-road locations during emergencies. SafeRoute aims to reduce emergency response times and provide 'psychological security' for students navigating the campus at night."

Your Role in the Session:
"Today, you will be performing three specific tasks using our high-fidelity prototype. Your primary goal is to interact with the interface to complete these objectives as naturally as possible.

- **Please 'Think Aloud':** Describe what you are looking for, what you expect to happen, and any confusion you experience as you navigate the app.
- **No Right or Wrong Answers:** We are testing the system's interface, not your abilities. If you find something difficult, it highlights a design issue we need to fix.
- **Termination:** If at any point you feel you cannot figure out how to complete a task, please say the word **'terminate'** out loud. We will then stop that task and move to the next one."

Consent:
"We will be screen recording this session and capturing audio of your 'think-aloud' process for academic evaluation purposes. Do you provide your verbal consent for us to proceed?"

Testing with users

Task 1: View Campus Incident Alerts (Student Perspective)

- **User 1 (Student):** [Link to Video]
- **User 2 (Security):** [Link to Video]
- **User 3 (Delivery):** [Link to Video]

Task 2: Managing Emergencies (Security Perspective)

- **User 1 (Student):** [Link to Video]
- **User 2 (Security):** [Link to Video]
- **User 3 (Delivery):** [Link to Video]

Task 3: Verifying Secure Entry and Delivery Zones (Delivery Rider Perspective)

- **User 1 (Student):** [Link to Video]
- **User 2 (Security):** [Link to Video]
- **User 3 (Delivery):** [Link to Video]

Observations – prepared by {member's name(s)}

{Description of your observations on the tasks carried out and summary of result interviews}

- **Task 1:** Students successfully used the "SafeRoute" interface to identify hazards like potholes and poor lighting before returning to dorms late at night.
- **Task 2:** Security officers appreciated the "Satellite Layer" which allowed them to see off-road markers and dispatch units to exact student coordinates rather than vague landmarks.
- **Task 3:** Delivery riders found the "Motorcycle Mode" effective for finding internal access paths that were previously omitted by standard navigation apps like Waze.

Interview Summary: Users reported that the system provided a high sense of "psychological security" compared to general traffic apps. However, some noted that the reporting process for map inaccuracies still felt slightly secondary to navigation.

Findings – prepared by {member's name(s)}

{Usability problems you discovered from the testing, and possible solutions.}

Based on the usability testing, the following problems and solutions were identified:

Usability Problem	Possible Solution
Cognitive Load on Map: Excessive icons on the dashboard can sometimes clutter the view for security officers.	Implement a "Layer Toggle" to allow users to hide/show specific categories like "Traffic" vs "Security Threats"
Reporting Friction: The process for reporting a missing service road required navigating through a help menu.	Add a "Quick Report" button directly on the active navigation screen for instant map corrections.
Alert Specificity: Some students were unsure of the "severity" of generic incident alerts.	Include a "Severity Color Code" (e.g., Red for immediate danger, Yellow for caution) within the hazard icons.