UNIVERSITI TEKNOLOGI MALAYSIA

HUMAN COMPUTER INTERACTION (SECV2113)

ASSIGNMENT 2

Heuristic Evaluation and User Journey Map

Student Name : 1. Angela Ngu Xin Yi (A24CS0226)
2. Evelyn Ang (A24CS0068)
3. Tan Xin Tian (A24CS0198)
4. Teoh Xin Yee (A24CS0307)
5. Toh Shee Thong (A24CS0309)

Lecturer Name : Assoc. Prof. Ts. Dr. Masitah Ghazali

Section : 1

1.0 Introduction

In this report, we present the results of a Heuristic Evaluation conducted by our team *EATTT* on the Busbee app, a prototype developed by Team LCsquare. Busbee is a mobile application designed to assist university students in planning and managing their daily bus commutes. It aims to provide essential features such as real-time tracking of buses, recommended route planning and a user-friendly interface for a diverse, multilingual user base. The purpose of this evaluation is to assess the usability of Busbee based on Nielsen's Ten Heuristic Principles. Through this evaluation, it enables identifying violations, grading their severity and proposing design improvements.

The evaluation is centered around **two realistic personas** that represent key user demographics:

- **Jia Jun**, a Malaysian university student who depends heavily on public transportation to attend his daily classes.

- **Emily Chin**, a Chinese tourist visiting Malaysia who uses public transport apps to navigate unfamiliar routes in a foreign language.

Each persona interacts with the Busbee app through tasks that reflect **core use cases** and common functionality in current public transport applications. These tasks include:

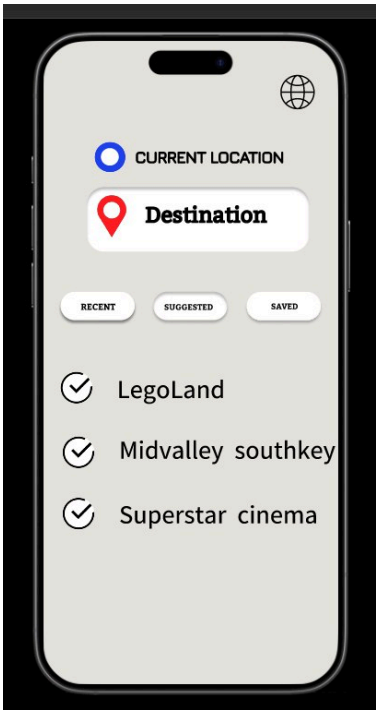
- **Task 1: Real-Time Bus Tracking** — Jia Jun opens the app to check when the next bus will arrive. However, the tracking feature fails to show live updates, causing uncertainty and delay.

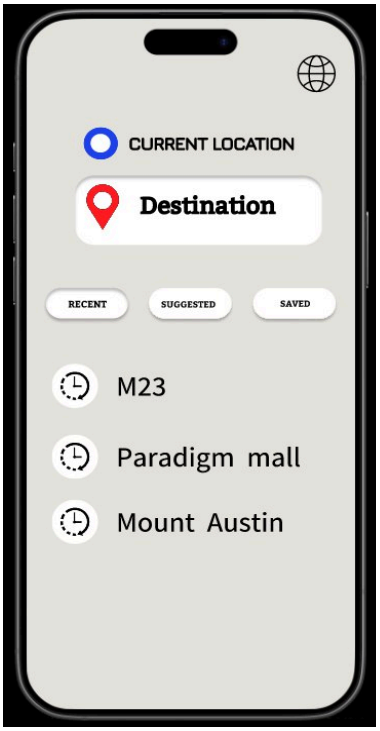
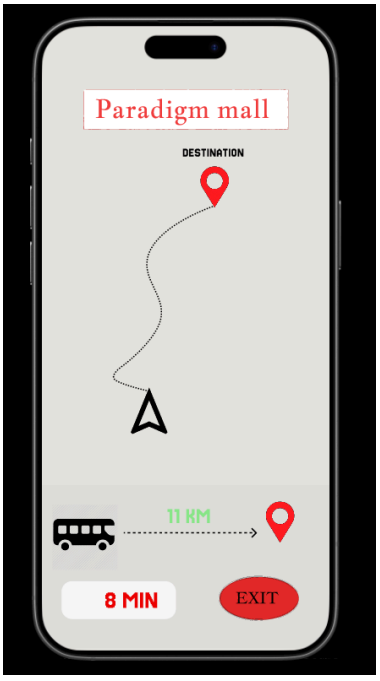
- **Task 2: Recommended Route** — He attempts to find the best route to class using the app but receives vague or inefficient suggestions with long walking distances. He eventually switches to Google Maps for better route planning.

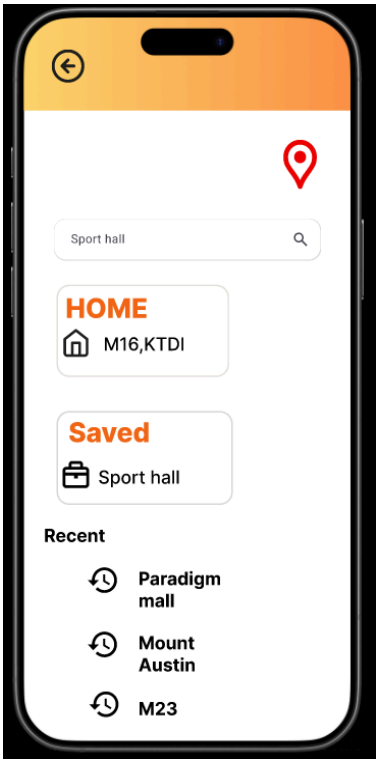
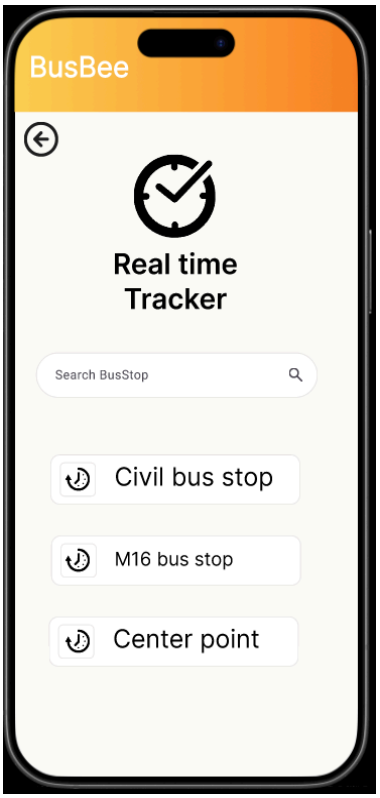
- **Task 3: Multi-Language Support** — Emily Chin uses the app to navigate from her hotel to Legoland. However, she struggles when using the app because Busbee lacks Chinese language support. She must rely on Google Translate to manually translate addresses, route numbers, and directions, which is time-consuming and error-prone.

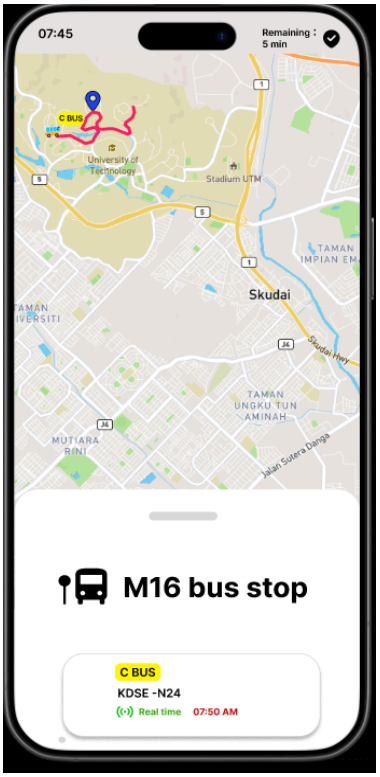
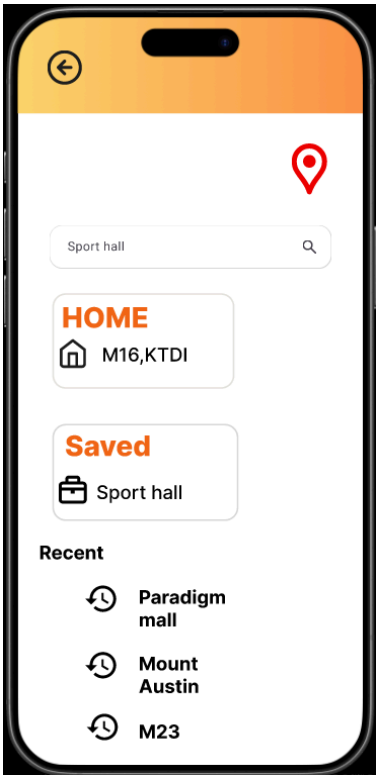
These scenarios are analyzed using Nielsen's heuristics to detect usability issues that hinder smooth interaction. The violations are documented in a Heuristic Evaluation Table, supported by screenshots and severity ratings. Additionally, User Journey Maps are constructed to visualize Jia Jun and Emily Chin's emotional experience, pinpoint pain points and highlight opportunities for improvement. Altogether, this report provides actionable insights and practical design recommendations to enhance the overall usability and accessibility of the Busbee app.

2.0 Heuristic Evaluation

No.	Prototype Image	Identified Issue	Heuristic and Severity
1.		There is no "Start" key available, which makes users confused and makes it harder for them to begin using the system.	H1: Visibility of system status S3: Major issue
2.		The tick icon inside the suggested filter is a mismatch, confusing for the user.	H1: Visibility of system status S2: Minor Issue

3.		There is no clear guidance or instruction on what to do next. It is confusing for first-time users as there is no indication where to tap or how to begin using the app.	H6: Recognition rather than recall H2: Match between system and real world S3: Major issue
4.		The colour of the message “11KM” is not clear and its low contrast against the background makes it difficult to read. This is a common usability problem that affects accessibility and user experience.	H1: Visibility of system status H8: Aesthetic and Minimalist design S1: Cosmetic issue

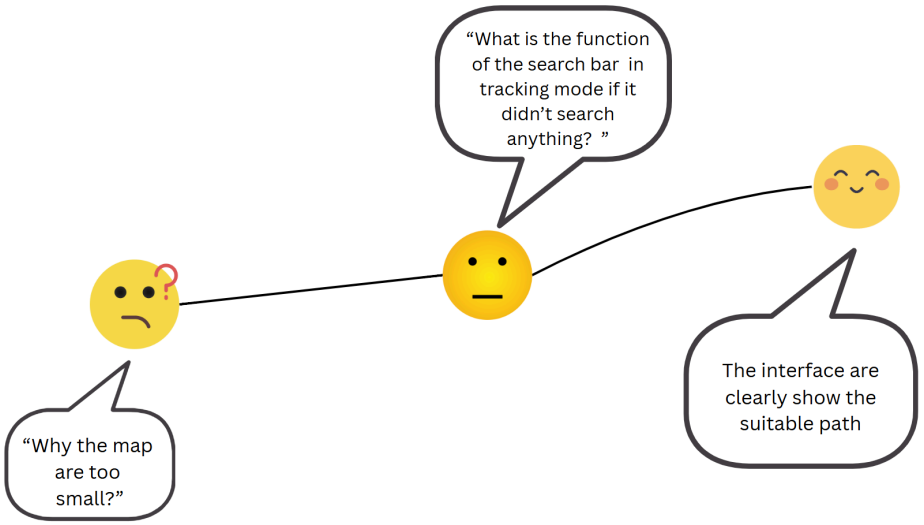
5.		Cannot understand the function of the red "locate" icon at the top right	H2: Match between the system and the real world S3: Major issue
6.		Inconsistent font styles and sizes in the interface elements ("Civil bus stop", "M16 bus stop", and “Center point”)	H4: Consistency and standards S1: Cosmetic issue

7.		The map doesn't zoom in on the selected route, making the highlighted route too small and unclear	H1: Visibility of system status S3: Major issue
8.		After clicking the "Sport hall" item in the "Saved" card section, the text "sport hall" appears in the search bar instead of navigating to the next page as expected.	H2: Match between system and the real world S3: Major issue

3.0 User Journey Map

Task 1: Real-Time Tracking

	**JIA JUN** Jia Jun is a university student who relies on public transport to navigate campus life. **Scenario:** On Monday morning, Jia Jun prepares for his 8:00 AM class. He checks the campus bus schedule but finds no real-time updates. With frequent Monday delays, he's unsure whether to wait or walk. The lack of accurate bus info causes stress and forces a rushed decision, making it hard to stay on time and start the week smoothly.	**Goals:** 1. Display accurate, real-time location data for campus buses. 2. Compare transport modes easily using estimated travel times. 3. Help him make quick, confident decisions about whether to wait for the bus or start walking. **Expectations:** 1. The information provided must be up-to-date and responsive, especially during peak hours when delays are common.
1. Start Bus Tracking Process	**2. Plan a Route to Destination**	**3. Monitor Bus and Arrival Info**
1. Press the Tracker button 2. Enter the desired bus stop 3. Track the bus in real time.	4. Set current location 5. Set the location as the destination 6. Choose the most suitable path	7. Press the track button for the desired bus 8. View the estimated arrival time



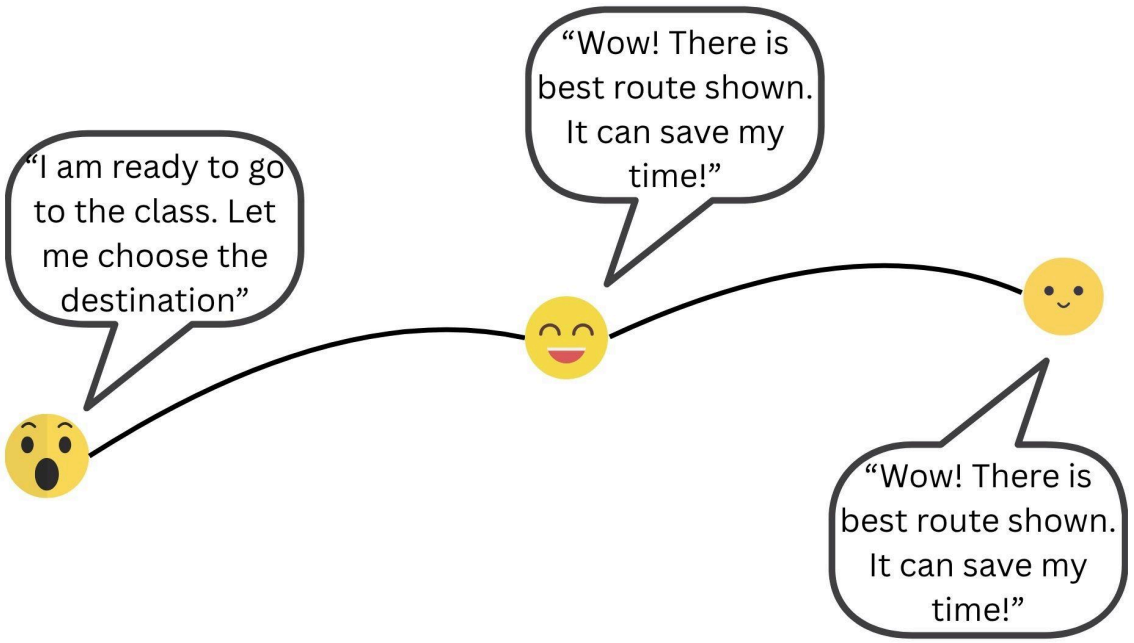
Pain Points: 1. Inconsistent font styles and sizes in the interface elements ("Civil bus stop", "M16 bus stop", and “Center point”) (Issue 6) 2. The map doesn't zoom in on the selected route, making the highlighted route too small and unclear. (Issue 7) **Recommendations:** 1. Set a consistent font and size for all bus stop names 2. Enable auto-zoom functionality when a user selects a route	**Pain Points:** 1. Cannot understand the function of the red "locate" icon at the top right. (Issue 5) 2. After clicking the "Sport hall" item in the "Saved" card section, the text "sport hall" appears in the search bar instead of navigating to the next page as expected. (Issue 8) **Recommendations:** 1. Add a label that appears on hover or tap. 2. Update the interaction to navigate directly to the Sport Hall page or its map location when clicked.	**Recommendation:** 1. The interface usability can be enhanced by improving the scrolling system.

Task 2: Recommended Route

<table>
<tr>
<td>  </td>
<td>JIA JUN
Jia Jun is a university student who relies on public transport to navigate campus life. As the Student archetype, Jia Jun allocates his time to classes, assignments, and tight schedules while depending on campus buses to get to lectures on time.

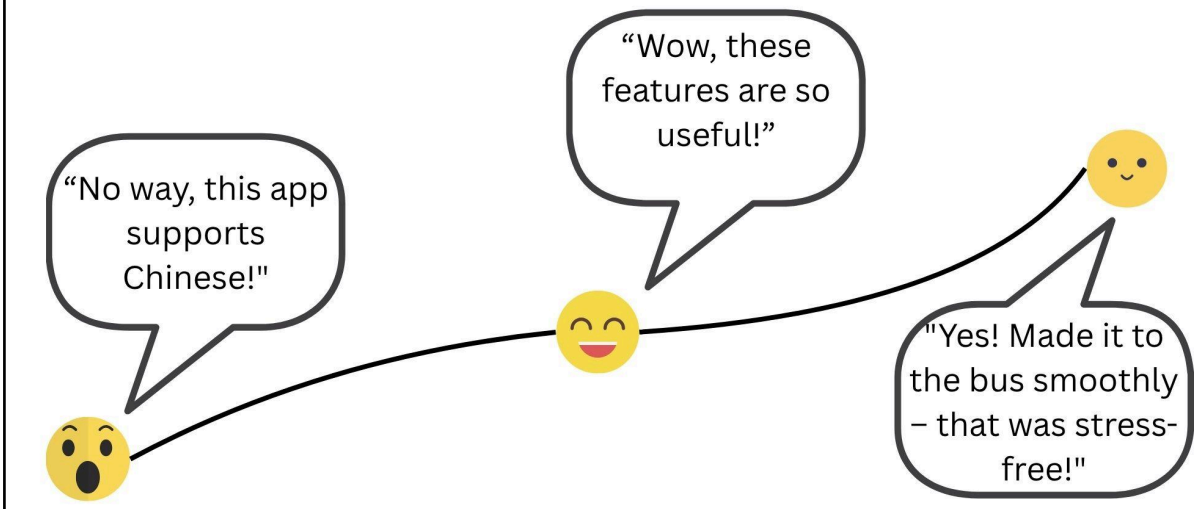
Scenario:
Jia Jun needs to get to his morning class on time. He opens the Moovit app and sets his dormitory as the starting point and his classroom building as the destination. The app shows several bus route options. However, the app does not recommend which route is the best. He notices that all options require significant walking after getting off the bus, which is about 5km from the bus stop to his classroom. He feels unsure which route is the fastest due to unpredictable bus arrivals. He decides to check Google Maps for the same route. To his surprise, Google Maps shows a direct walking route that takes only 20 minutes, including a handy shortcut through campus that Moovit didn't display. Comparing the options, he chooses to walk and arrives at class on time and stress-free.</td>
<td>Goals:
1. Provide the fastest and most efficient route, including walking-only options
2. Recommend routes with the least walking distance after public transport
3. Allow comparison between walking, bus and hybrid options

Expectations:
1. Route suggestions that have the shortest distance
2. Clear, real-time comparison of bus vs. walking routes</td>
</tr>
<tr>
<td>1. Input Location Details</td>
<td>2. Compare and select the best route</td>
<td>3. Execute and Arrive</td>
</tr>
<tr>
<td>1. Log into the app
2. Select “Current Location”</td>
<td>4. View the estimated period of the journey</td>
<td>7. Follow the route and go to the planned bus stop</td>
</tr>
</table>

3. Select and choose the destination	5. Compare the period and the total fare 6. Select the best route	8. After arriving at the last bus station as planned, follow the planned walking route 9. Confirm arrival
		
Painpoints: 1. There is no clear guidance or instruction on what to do next. It is confusing for first-time users as there is no indication where to tap or how to begin using the app. (Issue 3) 2. Cannot understand the function of the red "locate" icon at the top right. (Issue 5) **Recommendations:** 1. Give a caption like "Select Destination" so the user will understand what to do next 2. Label the icon so the user will know what that icon means	**Recommendation:** 1. For the estimated time, the font can be made larger so the user can notice it.	**Painpoint:** 1. The colour of the message "11KM" is not clear and its low contrast against the background makes it difficult to read. This is a common usability problem that affects accessibility and user experience. (Issue 4) **Recommendation:** 1. Use a more contrasting colour so that it will be easier to view

Task 3: Multi-Language Support

	**EMILY CHIN** Emily Chin, a Chinese tourist visiting Malaysia, opens Google Translate on her phone to help her use the Moovit app. She doesn't speak or read English well, making it challenging to use transportation apps that only support English. **Scenario:** Emily finds that the Moovit app doesn't support Chinese. To understand bus numbers, stops, and times, she must use Google Translate for every step. This makes the process become time consuming and prone to error, making it harder for her to navigate to Legoland.	**Goals:** 1. Provide multi-language support 2. Enable easy route planning regardless of language 3. Minimize the need for external translation tools **Expectations:** 1. Has an easy language switch option 2. All route information is available in the user's preferred language
1. Input Location Details	**2. Compare and select the best route**	**3. Execute and Arrive**
1. Log into the app 2. Switch the language to preferred language 3. Select and choose the destination	4. View the estimated time and other information for the journey in preferred language 5. Compare the period and the total fare 6. Select the best route	7. Follow the route and go to the planned bus stop 8. Double check the bus number and the boarding point 9. Board the bus and arrive at destination



Recommendations: 1. Add clearly marked language selector (e.g., a globe icon with a “Language” label) so users can easily switch to their preferred language.	**Recommendation:** 1. Provide multi-language support for route names, bus numbers, and estimated times and other information. This allows international users to compare options and understand route details quickly	**Recommendation:** 1. Ensure that directions signs (e.g. bus numbers) are translated and visually distinguishable. This will help foreign tourists check their route and reach their destination safely.