SWEN303 // Group 5 Project Part 01

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Individual Submission Content // Design Review & Individual Reflection

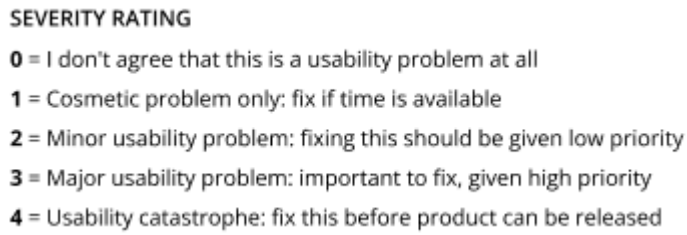
4. Design Review

Discuss the evaluation of these designs and pros and cons of each design using an "expert" evaluation technique of Heuristics or Cognitive walkthrough, or another system that you find and describe.

Reviewed Group Members:

- Adam Tither
- Ben Ferguson
- Nagare Negishi

For our design review portion of the group project, we each reviewed 3 members' assignment 2. To ensure consistency and objectivity, we all used the same Heuristic Evaluation template to nitpick each other's designs based on Nielsen's 10 heuristics. Using a severity rating (outlined below) to assess the impact of the issues we found, and the averaged-out results from all evaluations directly influenced the core design decisions for our group's prototype.



- Heuristic Evaluation template severity rating.

In addition to identifying usability issues, I also chose to highlight some strengths I found in my group members' wireframes. These positive elements provided inspiration for features and design patterns we considered carrying over into our prototypes.

Provided below are the strengths I found in my group members' wireframes, as well as the heuristic evaluation I filled out for their assignments.

1. Adam Tither

The first pro I found in Adam's wireframes was the ease of accessibility in finding help on how to use the application. Located in the top-right corner of every wireframe was a square '?' button which was easy to find and popped out thanks to the thick line stroke and dark black color relative to the rest of the components. This follows Nielsen's "Help and Documentation" heuristic, ensuring that assistance is always visible and easy to access for users who need guidance navigating the application.

Another key strength is the thoughtful inclusion of accessibility and localization features within the settings screen. The "Impaired Mobility Mode" clearly communicates its purpose with a clear heading and icon and a concise description, supporting users with mobility needs by ensuring that all routes suggested to the user are wheelchair accessible. Additionally, the app includes an in-app language selection, with both globe and flag icons to aid user recognition. I would align the inclusion of these elements with the "Accessibility" and "Match Between System and the Real World" heuristics by accommodating diverse user needs and using familiar visual language to support clarity and usability.

HEURISTICS	VIOLATION	RECOMMENDATION	SEVERITY
1. Visibility of system status *Aalways keep users informed about what is going on, through appropriate feedback within reasonable time.*	1. On the RouteFound and RouteExpanded screens, there is no feeedback or visible message that indicates to the user how many routes were found in the user's search. Could help user in cases where there are many routes found. A lot (or infinite) scrolling can be overwhelming to some. 2. The up arrow to expand the routes found on RouteFound I assume is to expand the list of routes, leading to the RouteExpanded screen, but the arrow stays the same pointing upwards. This makes it unclear to the user if clicking on the arrow again will collapse it. 3. Consider adding a confirmation label such as "Saved Routes" or a count like "You have 3 saved routes" to give user context.	1. Display a brief confirmation message such as "3 routes found from X to Y." 2. If my assumption is correct, swap the arrow on the RouteExpanded screen to a down arrow. 3. Possibly add a small message underneath the header to display how many routes the user has saved.	2
2. Match between system and the real world *Follow real-world conventions, making information appear in a natural and logical order.*	1. On the RouteFound and RouteExpanded screens, a section is labeled as 'Stops', but wireframe indicates that it is listing the starting stop of multiple routes, rather than the logical assumption that 'Stops' would list the stops of a single (or multiple) route. 2. On the HomeScreen, the search bars are labeled as 'Origin Location' and 'Destination Location', which may be unfamiliar terms or unnatural to some people (perhaps ESL), and could lead to confusion. 3. "Accessable" spelling error.	1. Rename the Stops section. 2. Rename to "From" and "To". Could even use dual-label format (i.e., "From (Origin)" and "To (Destination)". 3. Correct to "Accessible".	3
3. User control and freedom *Users should leave the unwanted state without having to go through an extended dialogue. undo and redo.*	1. On the HomeScreen, there is no visible "Clear" or "Reset" option if users input the wrong locations and would like to start over. 2. On the RouteSearch, RouteFound, and RouteExpanded screens, there are no visible "Back" button to return to the HomeScreen. My current assumption is that tapping anywhere on the map or on the "Search" button in the bottom-most menu returns to "HomeScreen".	1. Add an easy way to clear the search bars (e.g., small "X" icon inside each text field or "Reset" button nearby that clears both search bars). 2. Add a clear back button and maybe darken the map to nudge users to think "This is an overlay - maybe tapping outside will close it." - this may not be a suitable suggestion if the user is able to interact with the map while searching for a route.	3
4. Consistency and standards *Users should not have to wonder whether different words, situations, or actions mean the same thing.*	1. On the RouteFound and RouteExpanded screens, there are multiple routes starting from the same stop (e.g., 215 Wembly Pl as shown in the wireframe) with no further information (i.e., route name, destination, duration). This could cause confusion for newer users as they may not understand how these options differ. 2. The up arrow to expand the routes found on RouteFound I assume is to expand the list of routes, leading to the RouteExpanded screen, but the arrow stays the same pointing upwards. This makes it unclear to the user if clicking on the arrow again will collapse it.	1. Include route labels such as duration, start and end stops. 2. If my assumption is correct, swap the arrow on the RouteExpanded screen to a down arrow.	3
5. Error prevention *Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.*	1. "Apply & Close" is a bit confusing in this context, as where does it close to from the Settings screen? The main menu? We do not know what main menu is based off this wireframe.	1. Need to explicitly know what it means by Apply & Close. This could be done by adding a main menu screen or pair it with some kind of visual clue as to where it leads to.	2

HEURISTICS	VIOLATION	RECOMMENDATION	SEVERITY
6. Recognition rather than recall *Minimize the user's memory load by making objects, actions, and options visible.*			0
7. Flexibility and efficiency of use *Accelerators. Allow users to tailor frequent actions.*			0
8. Aesthetic and minimalist design *Dialogues should not contain information which is irrelevant or rarely needed.*	1. May want to reduce the size of the search icon. 2. Save button could be mistaken for an upload button; consider using a bookmark or heart icon for route saving. 3. On RouteExpanded screen, there is a lot of information displayed. May be visual overcrowding.	1. Reduce size of search icon 2. Change save button icon to bookmark or heart icon. 3. Improve visual grouping (e.g., alternate shading). Collapsible sections, adequate padding and font size, changing layout, etc.	1
9. Help users recognize, diagnose, and recover from errors *Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.*			0
10. Help and documentation *Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation.*			0

2. Ben Ferguson

Similar with Ben's wireframes, I liked the inclusion of various accessibility settings. The use of toggle switches for 'Disability Mode' and 'Text-to-Speech' gives the user clear control over enabling accessibility features, aligning with the "User control and freedom" and "Visibility of system status" heuristics.

Additionally, the "Filter Transport" section allows users to customize results based on specific accessibility needs (e.g., wheelchair access, support dog-friendly, handrail access), demonstrating his applications support for "Flexibility and efficiency of use" and "Accessibility".

Another feature I noticed was the option to export a public transport route to the user's calendar. This adds value by helping users integrate travel plans into their daily schedule, reducing the need to manually re-enter information elsewhere. I would say this aligns with the "Flexibility and efficiency of use" heuristic, as it streamlines a common user task and supports power users who plan ahead.

HEURISTICS	VIOLATION	RECOMMENDATION	SEVERITY
1. Visibility of system status *Aalways keep users informed about what is going on, through appropriate feedback within reasonable time.*	1. On Frame 1, there is no label under the image placeholder. Unable to identify whether it is a summary card, map, or graphic. 2. On Frame 2, there is no way to identify what the placeholder panel will display. Can only assume it has something to do with the microphone button underneath.	1. Add a label (i.e., trip overview, your route, map preview, etc.). 2. Add a temporary label or annotation inside or near the panel (e.g., map preview here, trip summary card placeholder, etc.).	2
2. Match between system and the real world *Follow real-world conventions, making information appear in a natural and logical order.*	1. On frame 2, the "Group..." dropdown is unclear in purpose. It's not obvious whether it refers to a list of user-created groups (i.e., friends, family) or something else entirely.	1. Use a clearer label (i.e., select group to send plan to), a small info icon, or another wireframe to show creation of a "Group".	3
3. User control and freedom *Users should leave the unwanted state without having to go through an extended dialogue. undo and redo.*	1. In is unclear on this wireframe where the back arrow button leads to? It could lead to either the Trips screen or the Home Screen based on assumption. 2. In Frame 2, is it possible to clear a plan from the "Saved Plans" section. Unclear in this wireframe.	1. Add a label or preserve and show navigation history if flow varies. 2. Add a delete/trash icon next to each saved plan in the list of Saved Plans. Alternatively, could allow long-press or swipe-to-delete functionality with confirmation prompts.	3
4. Consistency and standards *Users should not have to wonder whether different words, situations, or actions mean the same thing.*			0
5. Error prevention *Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.*			0

HEURISTICS	VIOLATION	RECOMMENDATION	SEVERITY
6. Recognition rather than recall *Minimize the user's memory load by making objects, actions, and options visible.*	1. On Frame 1, there is no label under the image placeholder. Unable to identify whether it is a summary card, map, or graphic.	1. Add a label (i.e., trip overview, your route, map preview, etc.).	2
7. Flexibility and efficiency of use *Accelerators. Allow users to tailor frequent actions.*			0
8. Aesthetic and minimalist design *Dialogues should not contain information which is irrelevant or rarely needed.*			0
9. Help users recognize, diagnose, and recover from errors *Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.*			0
10. Help and documentation *Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation.*			0

3. Nagare Negishi

The first notable strength in Nagare's wireframes is the 'Settings' page, which thoughtfully includes options tailored for users with visual impairments. The interface presents a clear and intuitive task flow. A well-labelled 'Settings' button leads to organized submenus with a wide range of customizable options. This supports the "Recognition rather than recall" and "User control and freedom" heuristics, allowing users to easily find and adjust features to suit their needs.

In particular, the inclusion of settings to modify text font size and contrast demonstrates attention to accessibility. However, the lack of a live preview panel makes it difficult for users to immediately understand the effect of their changes. Adding real-time visual feedback would align better with the "Visibility of system status" heuristic by keeping users informed about how their interactions are affecting the interface.

Another strength was his 'Transportation Options' page. Clear categorization and chunking by logically dividing the panel into three labelled sections supports the "Recognition rather than recall" heuristic by grouping similar controls together, making the interface easy to scan and understand.

The use of icons and labels with each option, helps users to quickly recognize functionality without relying solely on text, aligning with "Match between system and the real world" and enhancing accessibility for low-literacy or multilingual users.

Lastly, the inclusion of travel preferences such as "Least walking" or "Fewest transfers" provides users control over how routes are filtered, supporting "User control and freedom" and "Flexibility and efficiency of use".

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3. User control and freedom *Users should leave the unwanted state without having to go through an extended dialogue. undo and redo.*			0
4. Consistency and standards *Users should not have to wonder whether different words, situations, or actions mean the same thing.*			0
5. Error prevention *Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.*			0

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7. Flexibility and efficiency of use *Accelerators. Allow users to tailor frequent actions.*			0
8. Aesthetic and minimalist design *Dialogues should not contain information which is irrelevant or rarely needed.*			0
9. Help users recognize, diagnose, and recover from errors *Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.*	1. No visible "Reset to Default" option for the Display option submenu. Could be problematic if a user changes a display visibility setting by mistake.	1. Add a "Reset to Default" or "Restore Display Settings" button. Optionally could also add a confirmation dialog.	3
10. Help and documentation *Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation.*	1. No guidance on what each text size or contrast setting will do (e.g., live preview or tooltip).	1. Include a live preview area to show the user what exactly they are changing. Or provide a small box for each setting to display live changes.	2