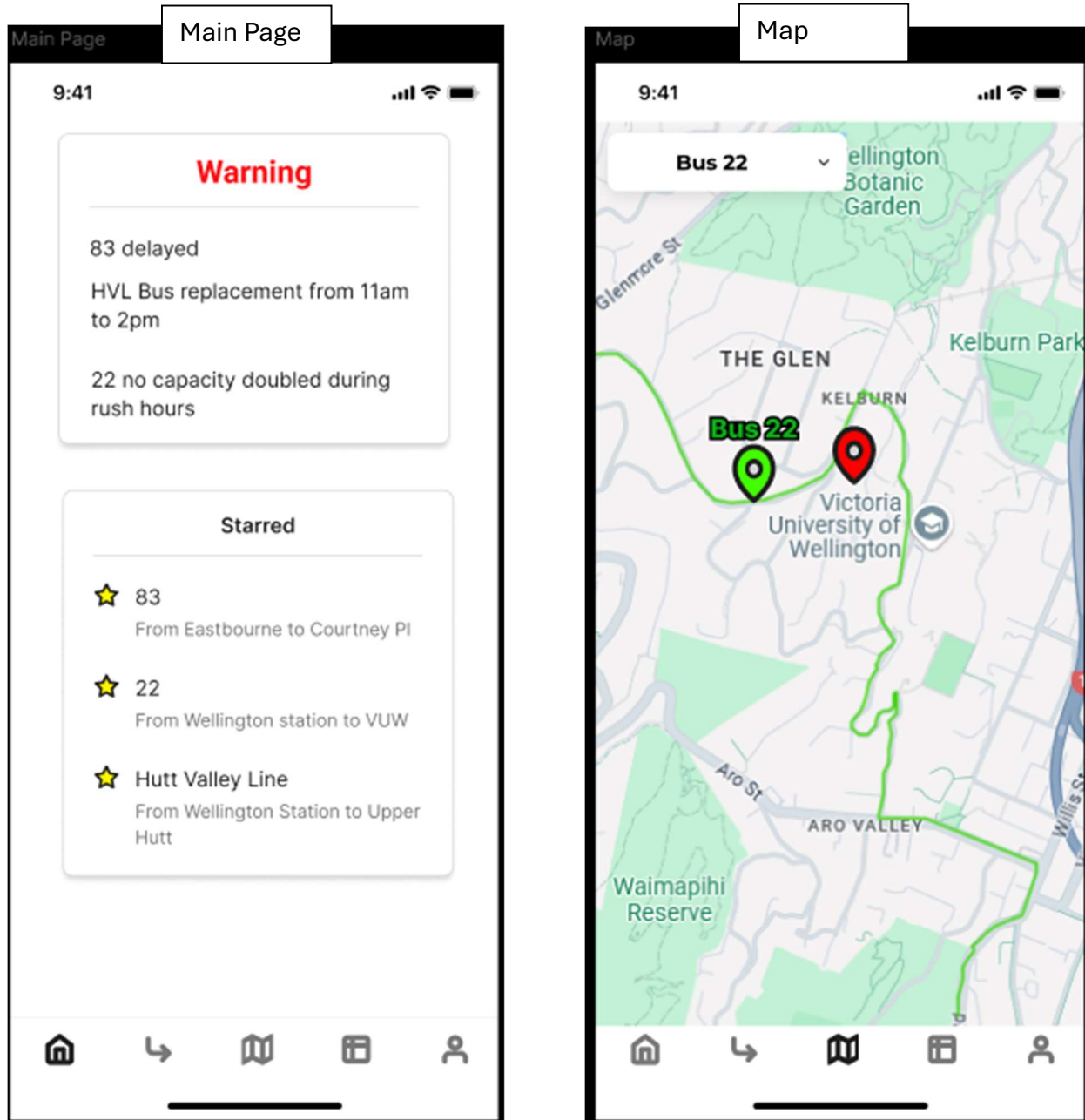


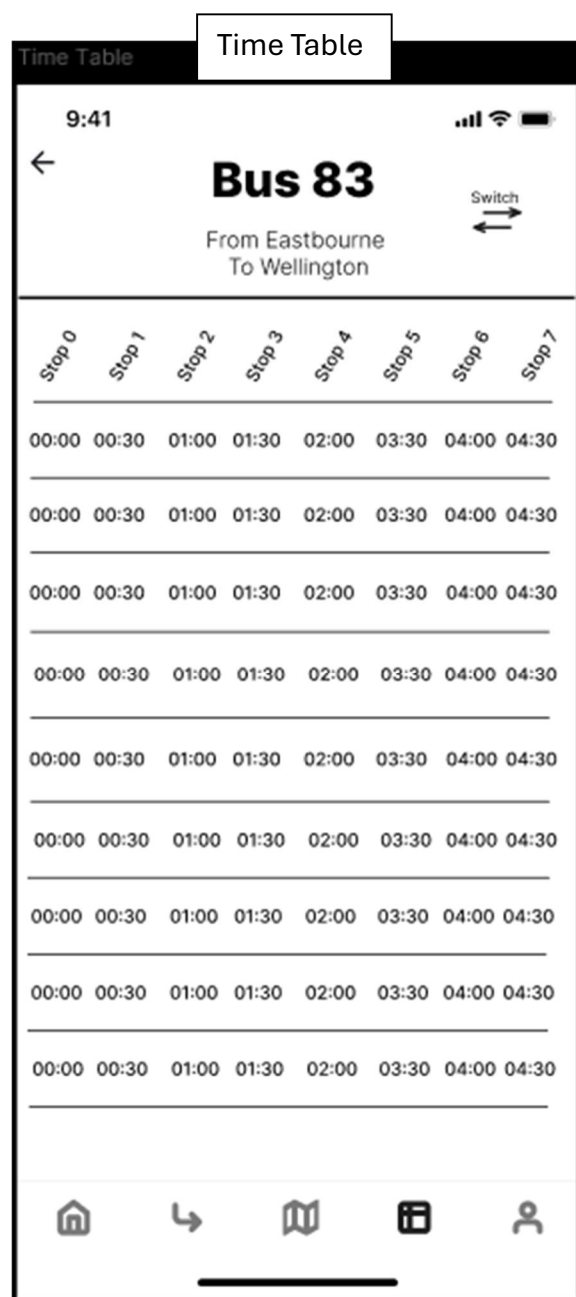
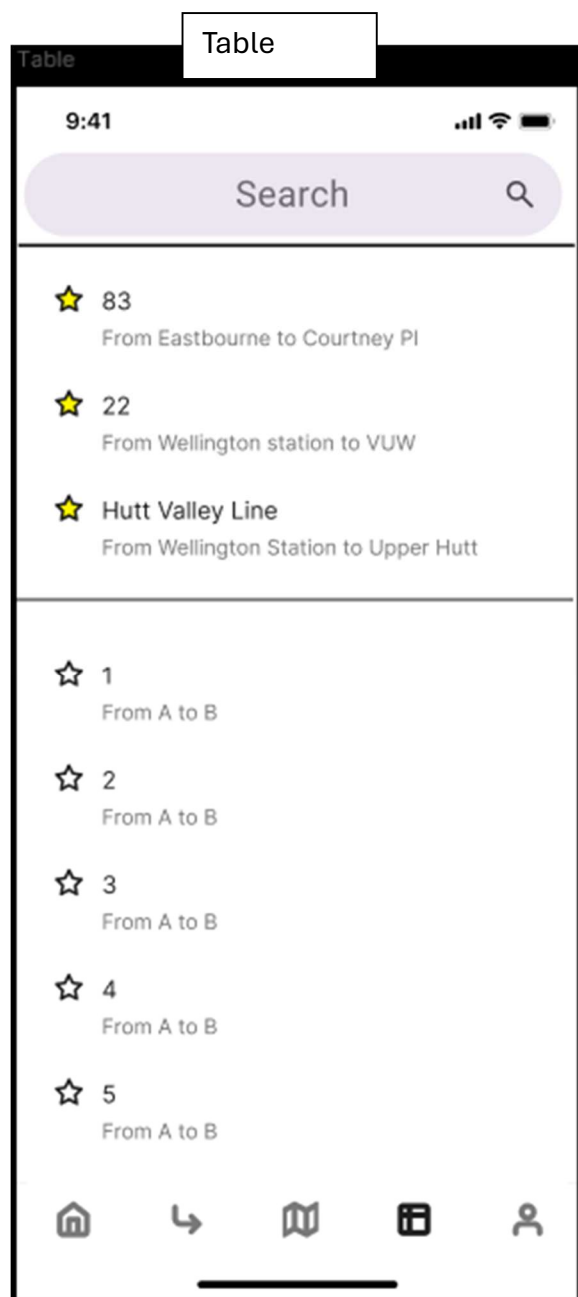
# SWEN303 Assignment 2

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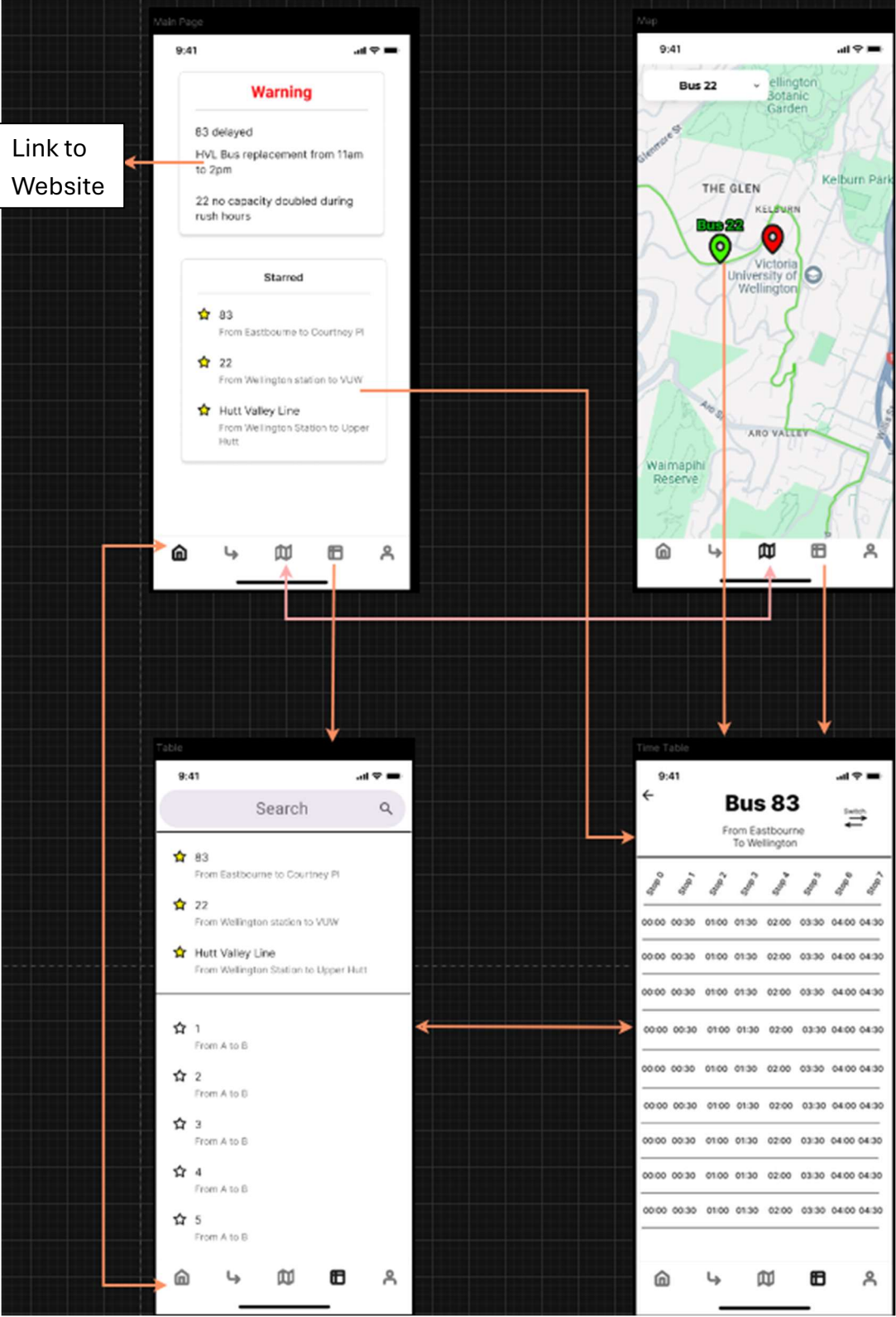
## Wireframes:

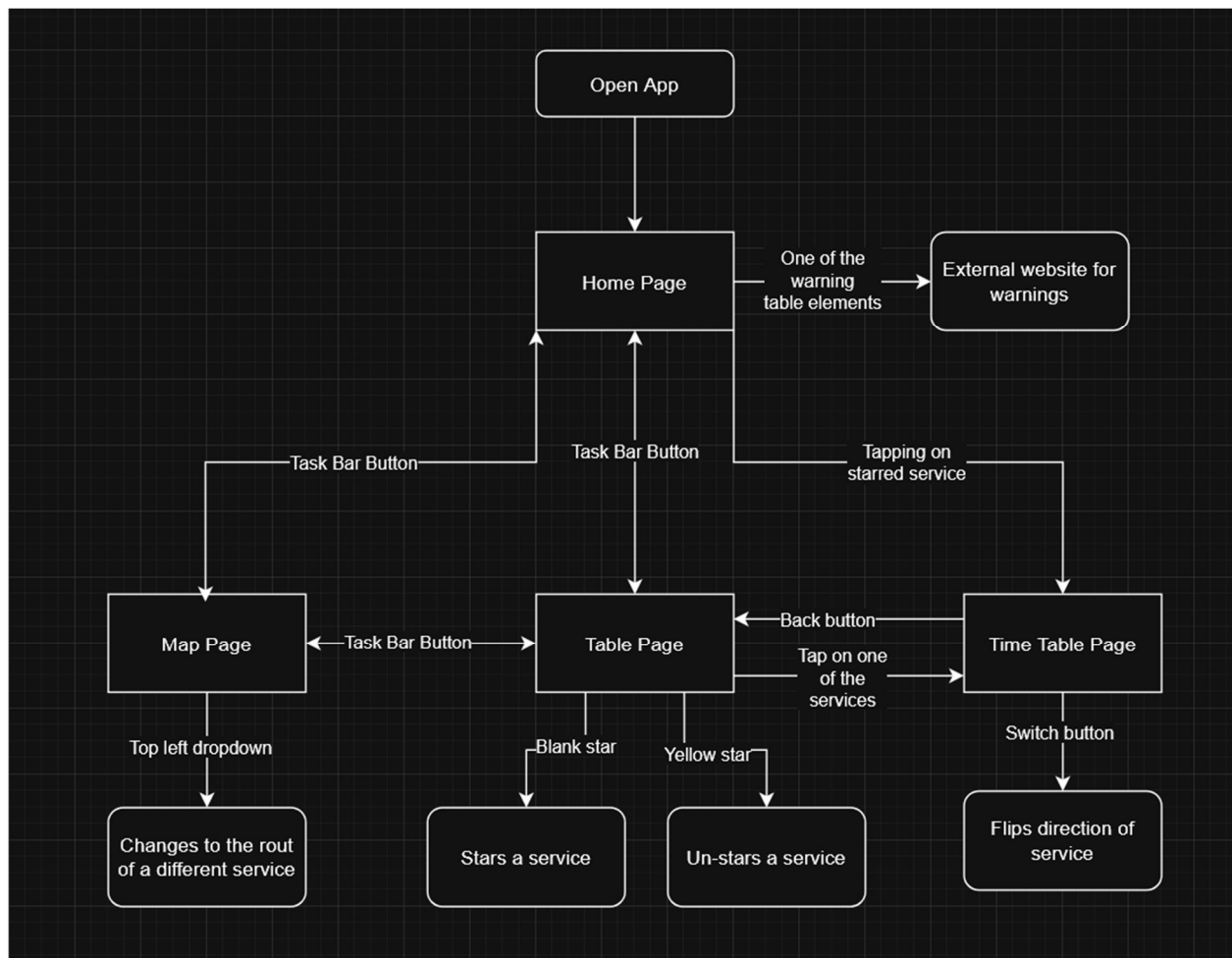
I used figma for the wireframes and a screenshot of google maps for the below image.





# User Flow





The above diagrams are made using draw.io

## UX guidelines

I used Grok AI to help me write this part.

From Assignment 1, I identified three key user tasks for Alex Singh: real-time transit updates, accurate timetables, and efficiency. My wireframes are tailored to support these tasks effectively. As a transit service app, I drew inspiration from the Metlink app for the map and timetable pages[1].

Several UX features are consistent across all pages, notably the bottom navigation bar, which is always visible and allows users to switch between pages seamlessly. This design supports Nielsen's heuristic of user control and freedom, enabling Alex to navigate freely without feeling restricted [2]. The intuitive icons in the navigation bar, such as the map and table symbols, adhere to Nielsen's heuristics of consistency and standards and match between system and the real world, ensuring users can quickly understand their function based on familiar real-world conventions [2].

### **Real-Time Transit Updates**

The "Map" screen provides real-time transit updates via an interactive map, allowing Alex to track bus movements dynamically. This aligns with Nielsen's heuristic of visibility of system status, as live updates on bus locations keep Alex informed about the transit system's current state [2]. The map's touch-friendly design ensures smooth interaction on mobile devices, critical for a seamless user experience. A dropdown menu enables Alex to search for specific routes or stops, catering to his detail-oriented nature and boosting usability. However, two weaknesses exist: the map's many moving parts can overwhelm users, and with potentially hundreds of bus services, finding a specific service from a dropdown menu may take time.

### **Accurate Timetable**

The "Time Table" screen offers an accurate, real-time updated schedule, enabling Alex to plan his commute precisely. Its design follows Nielsen's heuristic of matching the system to the real world by adopting a familiar format inspired by Metlink's timetables, aligning with user expectations for easy comprehension [2]. Clear typography and a structured layout ensure legibility on small screens, adhering to mobile UX principles for readability. A "Switch" icon lets Alex toggle between inbound and outbound schedules, providing flexibility for quick plan adjustments. Real-time updates reflect current transit conditions, helping Alex optimize transfers and avoid disruptions. A back arrow streamlines navigation to the main table page, ensuring quick access to information.

## **Efficiency**

The "Main Page" displays critical updates, such as delays or cancellations, allowing Alex to adapt his plans swiftly. This adheres to Nielsen's heuristic of visibility of system status, ensuring important information is immediately visible [2]. Quick links to timetables for starred buses and trains align with the heuristic of flexibility and efficiency of use, streamlining frequent tasks and minimizing repetitive searches [2]. This is particularly valuable for experienced users like Alex, who prioritize efficiency. The design reduces user input by minimizing taps needed to access key information, following mobile UX principles for efficiency. The bottom navigation bar facilitates smooth transitions between features, and the "Table" screen lists starred routes with checkboxes for instant access to detailed schedules, supporting Alex's goal of an optimized commute.

## **User Flows with Information Architecture Principles**

To create an intuitive and efficient experience for users like Alex, I incorporated principles from Abby Covert's 10 Principles of Information Architecture and Dan Brown's 8 Principles of Information Architecture into the user flows [3][4]. These flows - checking real-time transit updates, accessing accurate timetables, and doing so with minimal steps - are enhanced by the most relevant principles, ensuring a cohesive user experience.

From Abby Covert's principles, the app emphasizes findability through its bottom navigation bar, enabling Alex to locate features like the map for live bus positions and the timetable for starred routes effortlessly [3]. This ensures critical information is always accessible. The interface prioritizes clarity with a clean, Metlink-inspired timetable format that Alex can understand instantly, reducing confusion and enhancing usability [3]. The app is also communicative, displaying real-time updates on the main page to keep Alex informed about bus statuses without additional navigation [3]. These elements make the app valuable, streamlining Alex's commute by saving time and effort [3].

From Dan Brown's principles, the app adheres to the principle of choices by offering starred routes directly on the home page as well as on the table page, giving users multiple places where they can view this important information[4]. The principle of disclosure is evident on the main page, where previews of warnings are given and users can find out more details if they wish[4]. The principle of focused navigation is reflected in the bottom navigation bar's distinct icons, ensuring Alex's journey through the app remains simple and efficient [4]. These principles collectively support rapid access to timetables and live updates, aligning with the goal of minimal steps.

## **Strengths and Weaknesses**

The app's strengths lie in its adherence to Nielsen's heuristics and IA principles, ensuring a user-friendly and efficient experience. The bottom navigation bar enhances control and findability, while real-time updates and familiar timetable formats promote clarity and communicativeness. However, the map's complexity could overwhelm users, and the search for specific services may be time-consuming due to the volume of data. Future iterations could simplify the map interface and improve search efficiency by potentially changing the dropdown menu to a search bar to address these weaknesses.

## **References**

- [1] Metlink App on Google Play Retrieved from <https://play.google.com/store/apps/details?id=nz.org.metlink.app>
- [2] Nielsen, J. (1994). 10 Usability Heuristics for User Interface Design. Nielsen Norman Group. Retrieved from <https://www.nngroup.com/articles/ten-usability-heuristics/>
- [3] Covert, A. (2011). Information Architecture Heuristics. Retrieved from <https://abbycovert.com/ia-tools/ia-heuristics/>
- [4] Brown, D. (2010). Eight Principles of Information Architecture. Bulletin of the American Society for Information Science and Technology, Retrieved from <https://asistdl.onlinelibrary.wiley.com/doi/10.1002/bult.2010.1720360609>