SWEN303 // Assignment 02: Process & Users

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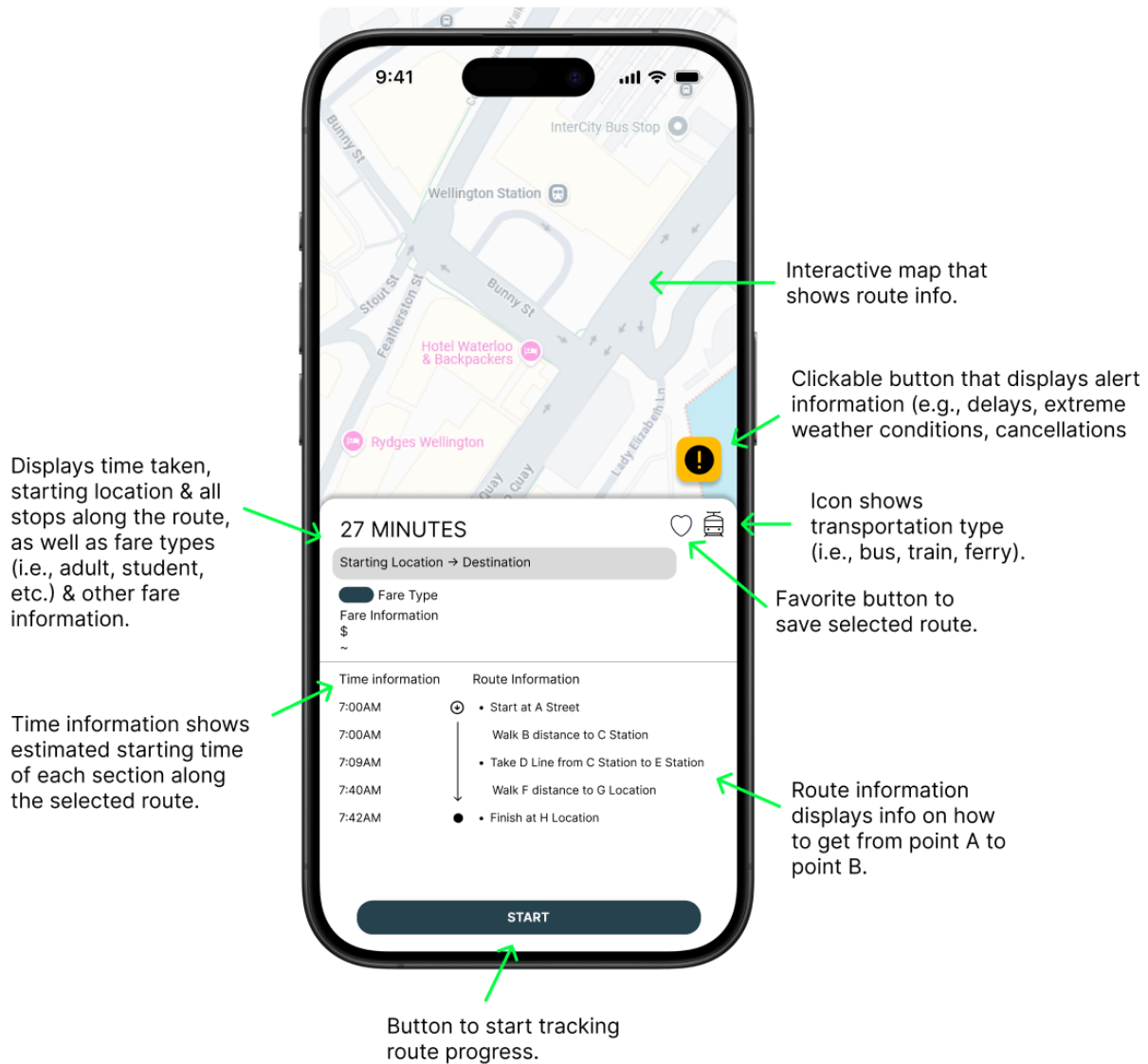
Part 01: Wireframes (40%)

Task 1 // To save time each day, Alex wants to set up a shortcut to quickly check the best route from his house to his work. He opens the app, types in his start and end locations, and views several route options. He chooses the one he likes the most and taps to save it on his favorites.

Route planning screen: Scrollable menu that shows user all possible routes from current live location or a selected location to a destination.

Button that allows user to turn on live location

Button to swap starting location and destination (only possible with a single stop).

+ button allows user to add stops to their route.

Small clickable textbox that allows user to choose departure time.

Menu that allows user to change sorting priority and add filters to search.

Looks like this when a filter is applied: ▼

Multiple routes shown with basic information. Sorted by least time taken to arrive at location by default.

PLAN YOUR ROUTE

Current Location

Wellington Station

Departure Time

27 MINUTES
Route Information
Fare Information
$
~

30 MINUTES
Route Information
Fare Information
$
~

31 MINUTES
Route Information
Fare Information
$
~

ALERT INFORMATION

Favorite button to save the route.

Clickable button that displays alert information (e.g., delays, extreme weather conditions, cancellations

- Route Planning Screen: a scrollable menu that shows the user all possible public transportation routes from their chosen starting location (or current live location if the user has pressed on the red button and enabled live location sharing).

Selected Route Screen:
After user presses on a route on previous screen, user can see all detailed information regarding the chosen route.
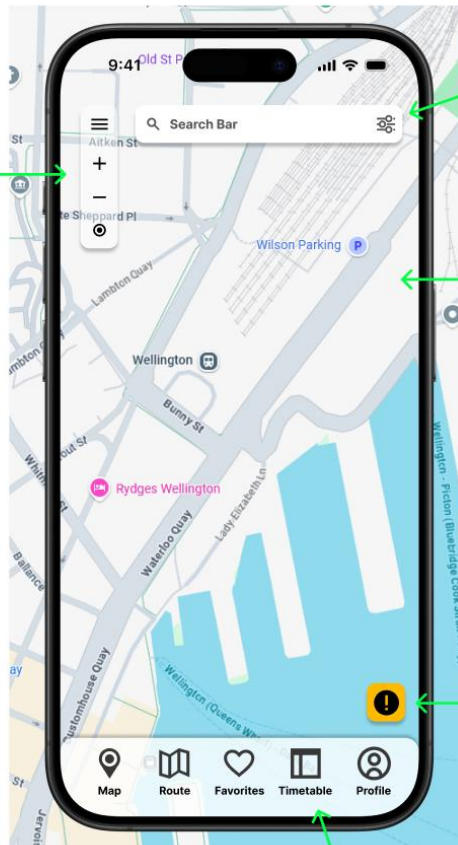
Interactive map that shows route info.

Clickable button that displays alert information (e.g., delays, extreme weather conditions, cancellations

Displays time taken, starting location & all stops along the route, as well as fare types (i.e., adult, student, etc.) & other fare information.

Icon shows transportation type (i.e., bus, train, ferry).

Favorite button to save selected route.

Time information shows estimated starting time of each section along the selected route.

Route information displays info on how to get from point A to point B.

Button to start tracking route progress.

27 MINUTES

Starting Location → Destination

Fare Type
Fare Information
$
~

Time information	Route Information
7:00AM	• Start at A Street
7:00AM	Walk B distance to C Station
7:09AM	• Take D Line from C Station to E Station
7:40AM	Walk F distance to G Location
7:42AM	• Finish at H Location

START

- Selected Route Screen: a scrollable screen that shows the user all information on the route they selected in the previous menu. They can scroll upwards to cover more of the interactive map to expand on the route information, which will show them further detailed info on each stop as well as the travel in between each section.

Task 2 // Alex hears that there's a delay on his usual bus route. He opens the app and sees a warning on the side of his screen. He taps the icon to view the alerts and check all current and upcoming alerts.

Home screen:
When user opens the app this screen shows. The user can access all sub-menus from here and interact with the map.

Search bar with a filter menu.

Vertical menu strip:
Hamburger to see app settings.
+ to zoom in.
- to zoom out.
Live location button.

Interactive map.

Button to see all current alerts.

Horizontal bottom menu:
Map: app opens to this by default. changeable in settings.
Route: route planning - opens to first screen seen in Task 1 (Route Planning Screen).
Favorites: opens to favorited routes.
Timetable: viewable public transport timetables.
Profile: opens user's profile for personal account settings.

- Main screen when opening the app. From here, the user can tap on the yellow alert button to view all current alerts across all public transport options available on the app.

Alert screen:
When user taps alert icon, this screen is displayed. User can see all current and upcoming alerts for each transport type.
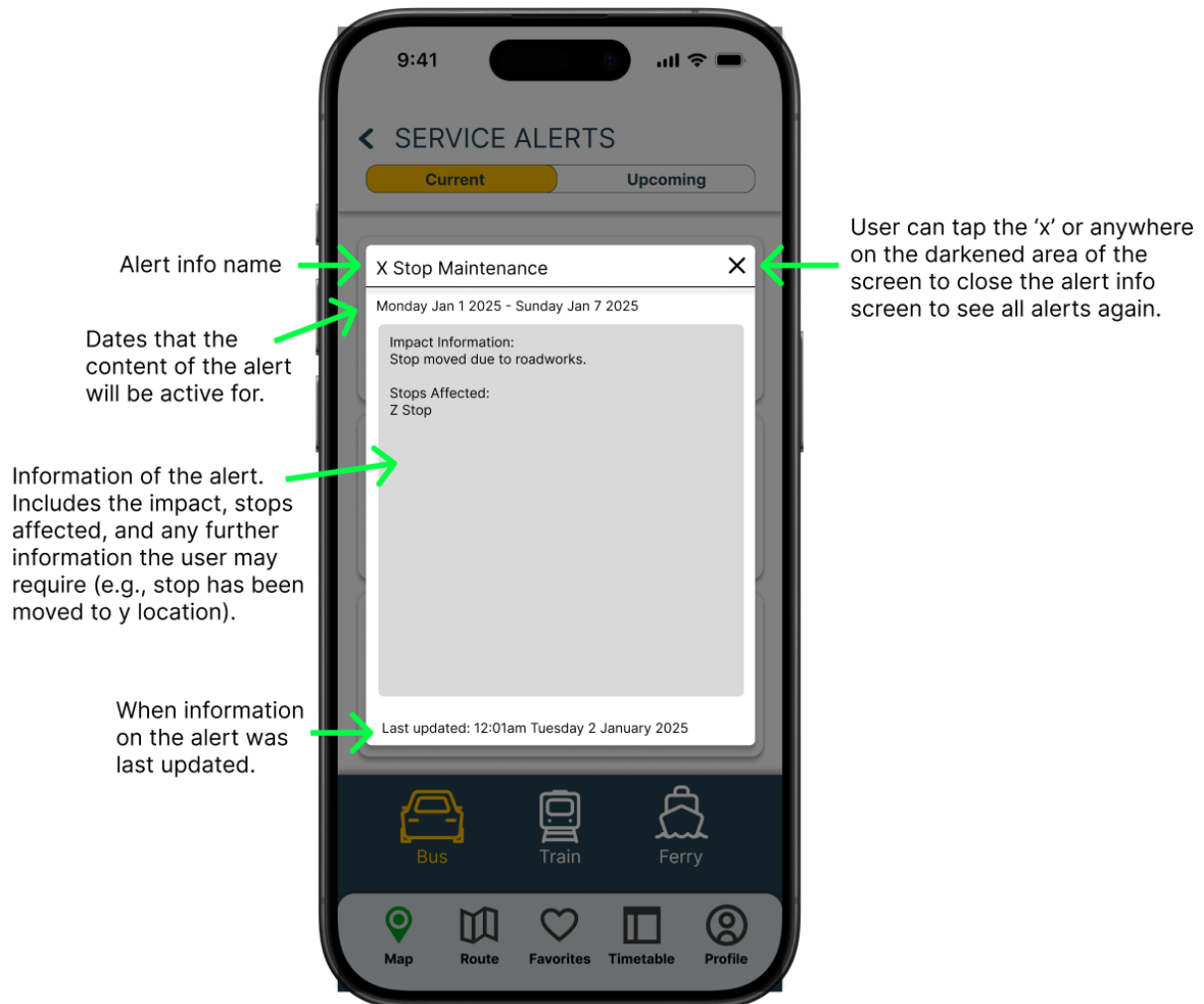
Top menu (yellow means selected):
Current: shows current alerts.
Upcoming: shows upcoming alerts (e.g., maintenance).

Scrollable screen shows user all existing alerts.
Each alert displays stop information (e.g., stop X at Y location closed).
Dates of the alert (e.g., Monday 1 January - Sunday 7 January).
Impact information (e.g., stop closed due to roadworks, stops affected: 100A).

Horizontal menu (yellow means selected):
Bus: shows all bus service alerts.
Train: shows all train service alerts.
Ferry: shows all ferry service alerts.

(couldn't find bus icon that I liked)

9:41

‹ SERVICE ALERTS

| Current | Upcoming |

Stop Information
Alert Dates

Impact Information:
~
~

Stop Information
Alert Dates

Impact Information:
~
~

Stop Information
Alert Dates

Impact Information:
~
~

Bus   Train   Ferry

Map   Route   Favorites   Timetable   Profile

Horizontal bottom menu (green means selected):
Map: app opens to this by default. changeable in settings.
Route: route planning - opens to first screen seen in Task 1 (Route Planning Screen).
Favorites: opens to favorited routes.
Timetable: viewable public transport timetables.
Profile: opens user's profile for personal account settings.

- Alert screen that is displayed when user taps on the alert button. From here, the user can check all current and upcoming alerts. The user can also select existing public transport types (e.g., bus, train, ferry) to see each type's current & upcoming alerts.

Alert Info Screen:
When user taps on an alert, this screen is displayed over the top. User can see all current and upcoming alerts for each transport type.

User can tap the 'x' or anywhere on the darkened area of the screen to close the alert info screen to see all alerts again.

Alert info name

Dates that the content of the alert will be active for.

Information of the alert. Includes the impact, stops affected, and any further information the user may require (e.g., stop has been moved to y location).

When information on the alert was last updated.

9:41

‹ SERVICE ALERTS

| Current | Upcoming |

X Stop Maintenance   ✕

Monday Jan 1 2025 - Sunday Jan 7 2025

Impact Information:
Stop moved due to roadworks.

Stops Affected:
Z Stop

Last updated: 12:01am Tuesday 2 January 2025

Bus   Train   Ferry

Map   Route   Favorites   Timetable   Profile

- Alert info screen that pops up when the user taps on an alert in the alert screen. Here, the user can view and scroll through all information regarding the alert. The user can tap on the 'x' or anywhere on the darkened area of the screen to return to the alert screen.

Task 3 // Alex is curious about how much time and money he's saved by using public transport this month. He opens the app and taps into the "Profile" section. There, he sees a summary of his monthly usage, including the number of trips taken, total distance covered, and money saved by taking public transportation instead of driving. Alex scrolls through the graphs and taps to expand a few sections, viewing his statistics.

Profile Screen:
When user profile, the app moves to this screen. The user can view a summary of their public transportation usage, from past trip information to money spent & saved, etc.

User profile picture display & name.

Summary section displays user data. Displayed data includes (but not limited to), past trip information, money spent, money saved, distance covered, etc.
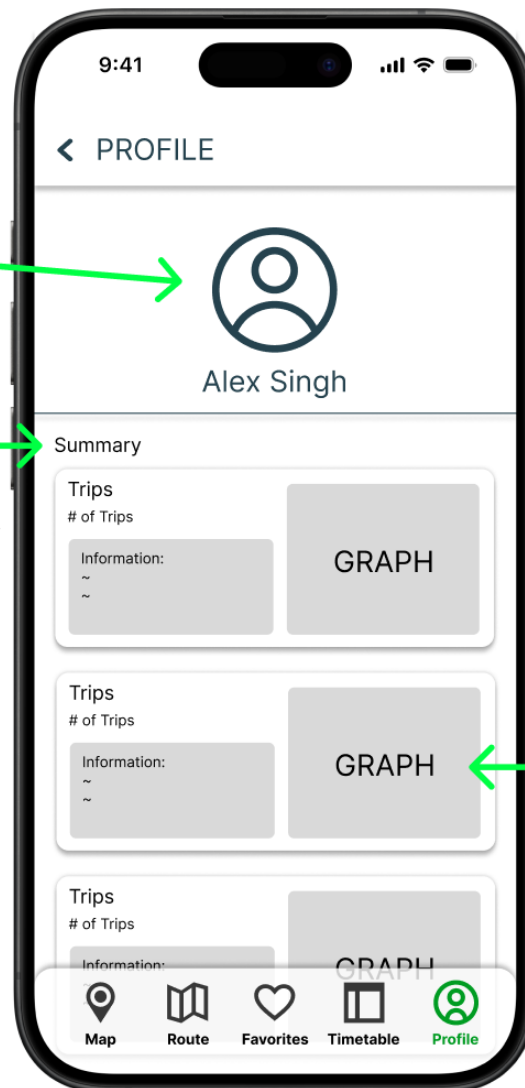
Each section has a name, a main statistic, some more sub-statistics, and a graph.

Tapping on one of these will make a pop-up of the section's in-depth information.

- Profile screen displays user's uploaded profile picture & name. User can click on their picture to upload and change it. There is a summary section which contains all the user's statistics that are available to view. Clicking on a section will create a pop-up that covers the center of the screen to display the section's information more in-depth.

Statistic Info Screen:
When user taps on a statistic, this screen is displayed over the top. User can see further information about the statistic type they tapped on in the previous screen.

Statistic info name →

User can tap the 'x' or anywhere on the darkened area of the screen to close the alert info screen to see all alerts again.

< PROFILE

Trip Information   ×

# of Trips

GRAPH

Graph of statistics →

In-depth information about past trips:
~
~
~
~

Further information relevant to the statistic type. →

Information: GRAPH

Map   Route   Favorites   Timetable   Profile

- In-depth statistic information screen. User can tap on the 'x' or anywhere on the darkened area of the screen to return to the profile screen. User can scroll if there is enough info that it exceeds the size of the white pop-up.

Part 02: User Flows (20%)

Task 1 // To save time each day, Alex wants to set up a shortcut to quickly check the best route from his house to his work. He opens the app, types in his start and end locations, and views several route options. He chooses the one he likes the most and taps "Save as Favorite."

    1. User Goals:
- Alex wants to save time by quickly accessing important routes.
- Alex wants to stay organized with structured travel plans.

Main Menu Screen:
Here, the user can tap the 'Route' button to move to the Route Planner Screen:
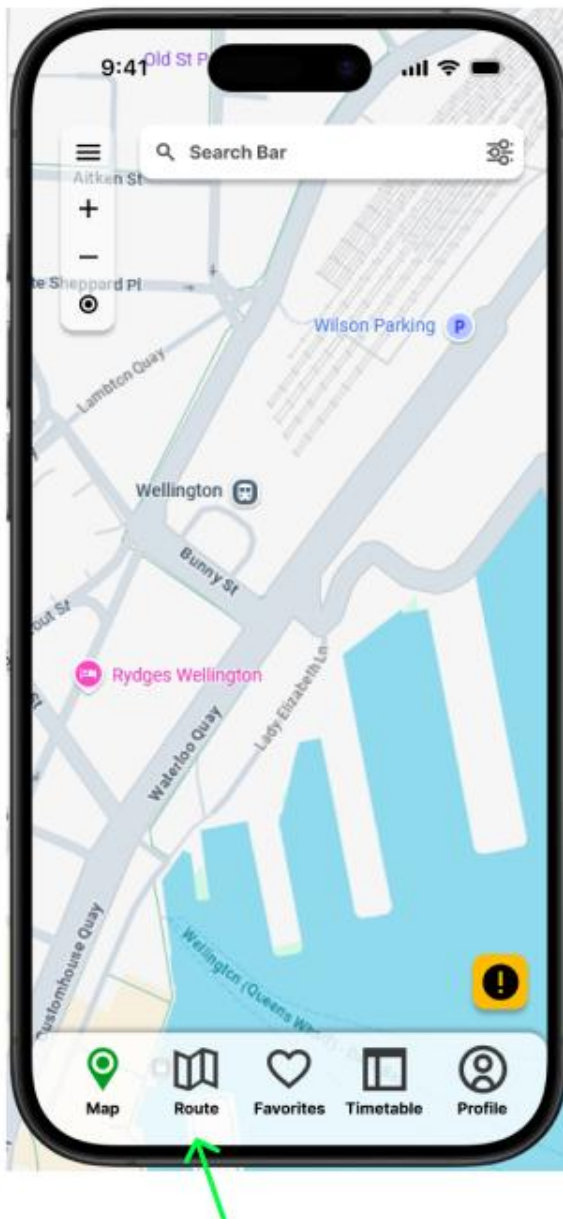
1. User clicks on Route button to access the route planner screen.

2.

Route Planner Screen:
Here, the user can enter a starting location (or use their live location requiring user permission) as well as a destination. If they'd like, they can also add stops to the route. It is also possible to reverse the starting location and destination (but only available for single destination routes). They can change their departure time, sort and filter the routes displayed. Once the user has entered a starting location and at least one destination, they can scroll (if there are enough routes to require scrolling) to view routes and their information.

2. User enters starting location and destination. Optional: user can give permission to use live location, and add stops to their route.

3. User selects this route to view further information on it.

3.

Route Information Screen:
Here, the user can view all indepth
information about the selected route.

4. User views indepth
information about the
route's starts, stops,
travel times, transport
type (e.g., bus, train),
fare information (i.e.,
price, adult fare, etc.).
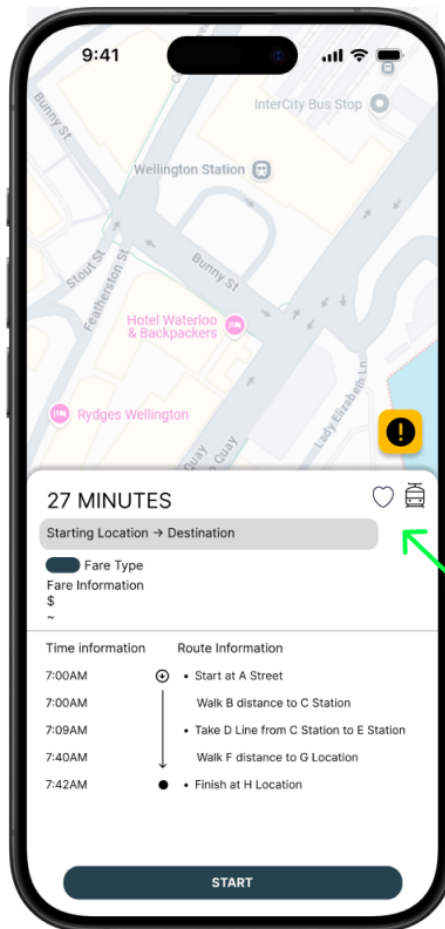
5. User can then save
the route via the
'Favorite' heart-
shaped button.

Task 2 // Alex hears that there's a delay on his usual bus route. He opens the app and sees a warning on the side of his screen. He taps the icon to view the alerts and check all current and upcoming alerts.

1. User Goals:
- Alex wants to avoid unexpected delays or disruptions.
- Alex wants to stay informed and in control of his schedule.

Main Menu Screen:
Here, the user can tap the 'Alert' button to move to the Alert Screen:
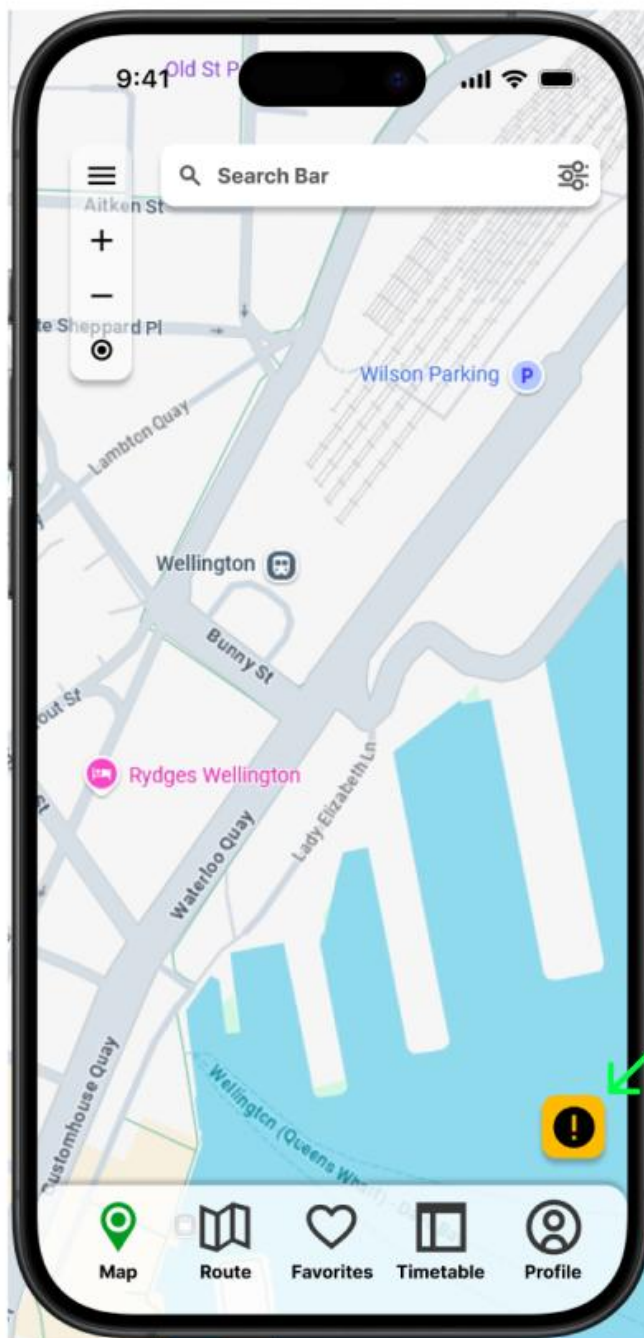
1. User taps on the alert icon.

2.

Alert Screen:
Here, the user can view all existing alerts on the public transport network. The user can switch between current and upcoming alerts, change alert type by transport type, and tap on the alerts to view their info in full.
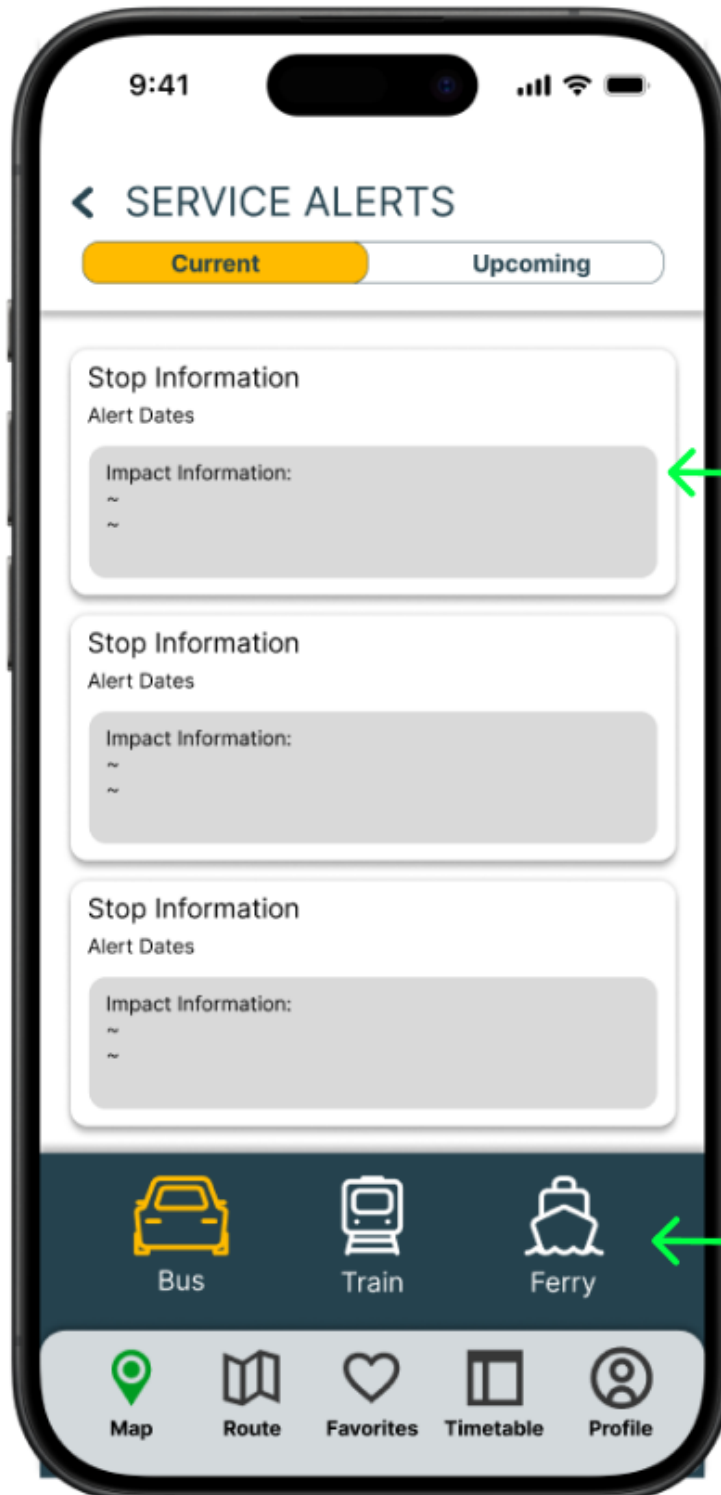
2. User can view, scroll, and tap on any alert to view further information on them.

User can look at alerts affecting different service types if desired.

3.

Alert Info Screen:
Here, the user can see in-depth information on any alert they tap on. The user can scroll if there is enough information within the gray box. It also tells the user when the alert was last updated.

SERVICE ALERTS

| Current | Upcoming |

X Stop Maintenance ✕

Monday Jan 1 2025 - Sunday Jan 7 2025

Impact Information:
Stop moved due to roadworks.

Stops Affected:
Z Stop

Last updated: 12:01am Tuesday 2 January 2025

Bus   Train   Ferry

Map   Route   Favorites   Timetable   Profile
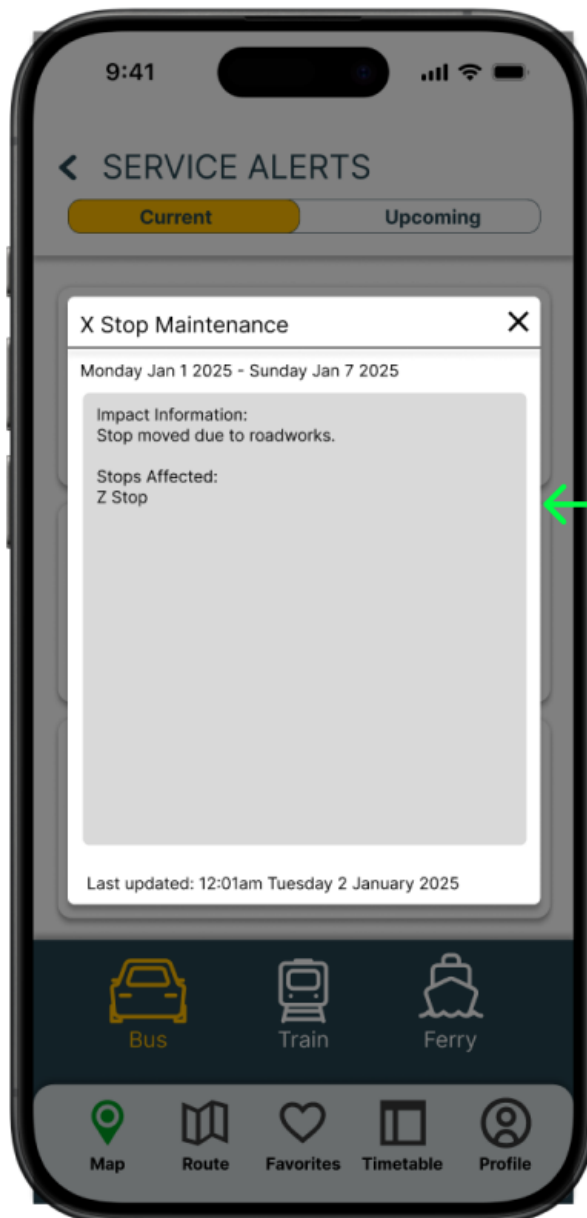
3. User views in-depth information about the service alert they tapped on. If there is enough information that they cannot see it all within the gray box, the user can scroll within the gray box. The user can either tap the 'x' or anywhere on the darkened area of the rest of the screen to exit the alert info screen.

Task 3 // Alex is curious about how much time and money he's saved by using public transport this month. He opens the app and taps into the "Profile" section. There, he sees a summary of his monthly usage, including the number of trips taken, total distance covered, and money saved by taking public transportation instead of driving. Alex scrolls through the graphs and taps to expand a few sections, viewing his statistics.

1. User Goals:
- Alex wants to reflect on his transport habits and improve over time.
- Alex wants to understand the environmental impact of his choices.

Main Menu Screen:
Here, the user can tap the 'Profile' button
to move to the Profile Screen:
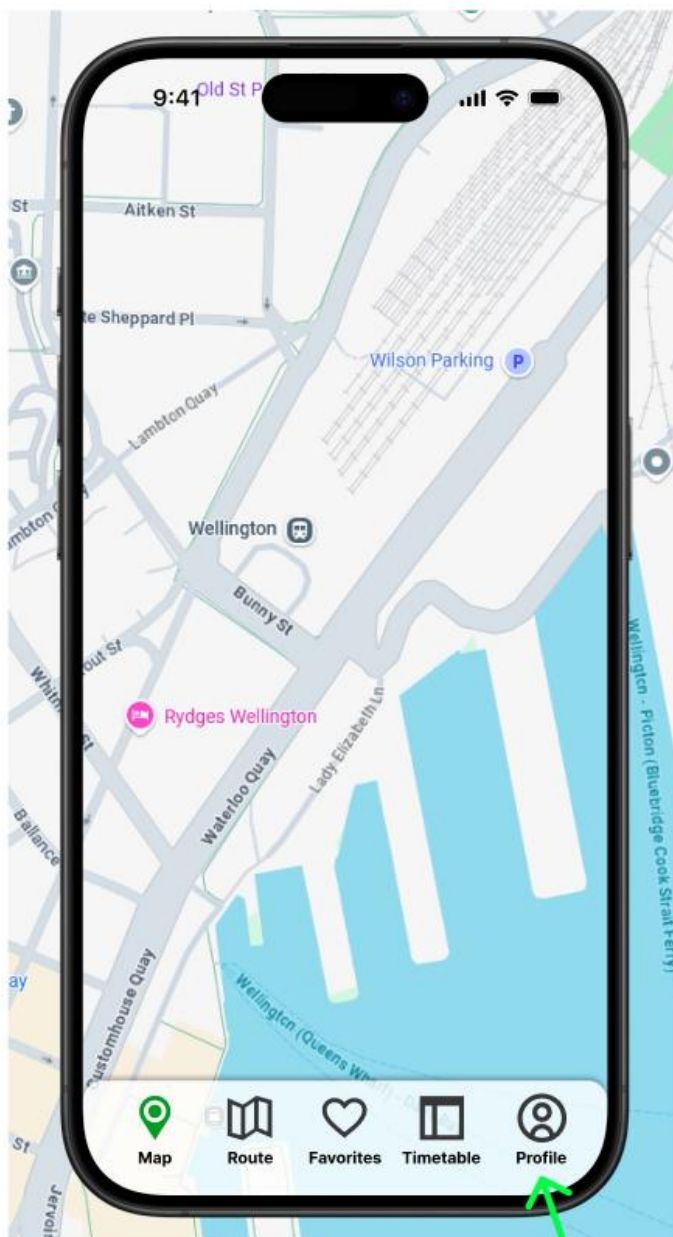
1. User taps on 'Profile' to
access their statistics.

2.

Profile Screen:
Here, user can see their account picture, name, and a summary of all their statistics since creating their profile. These statistics include (but are not limited to): trips taken, time spent on public transport, money spent, money saved, etc.

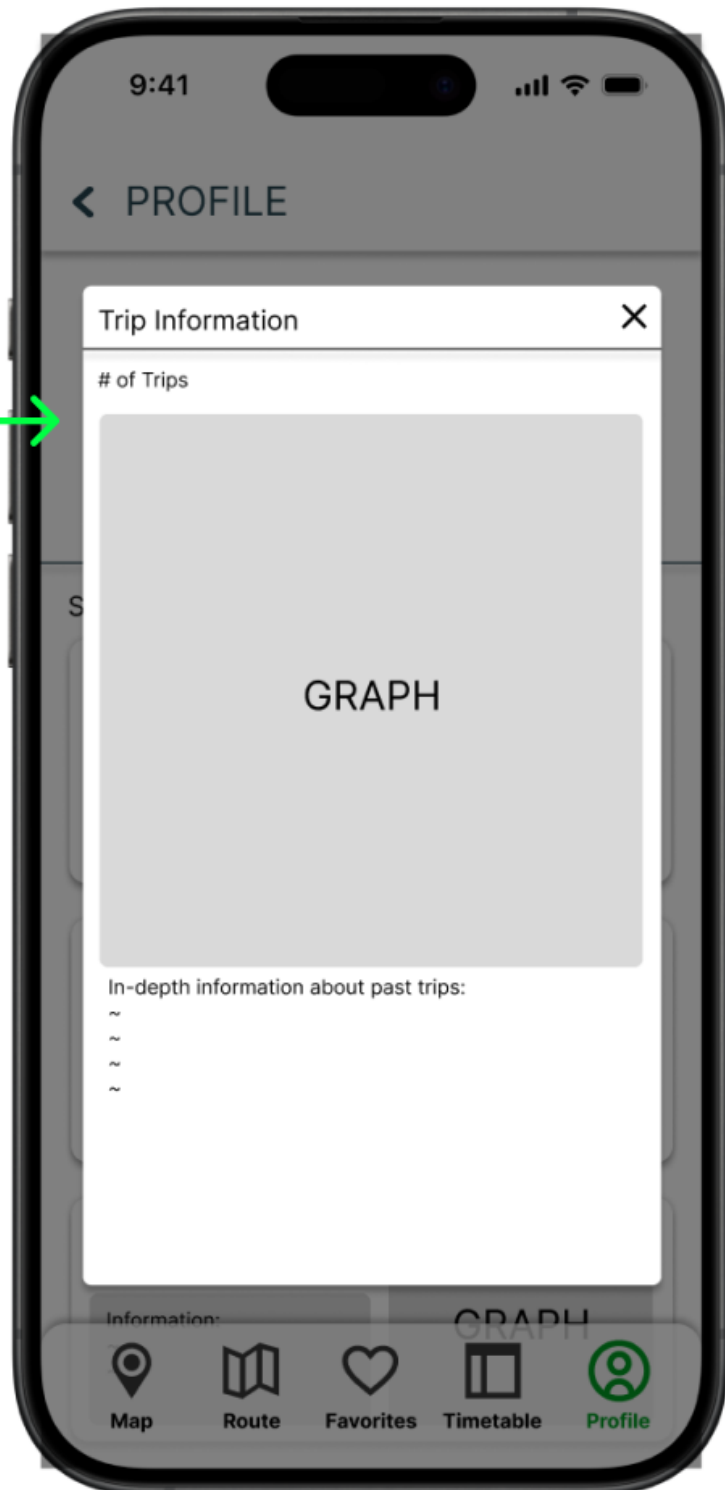2. User taps on a statistic section to view in-depth information on that statistic type.
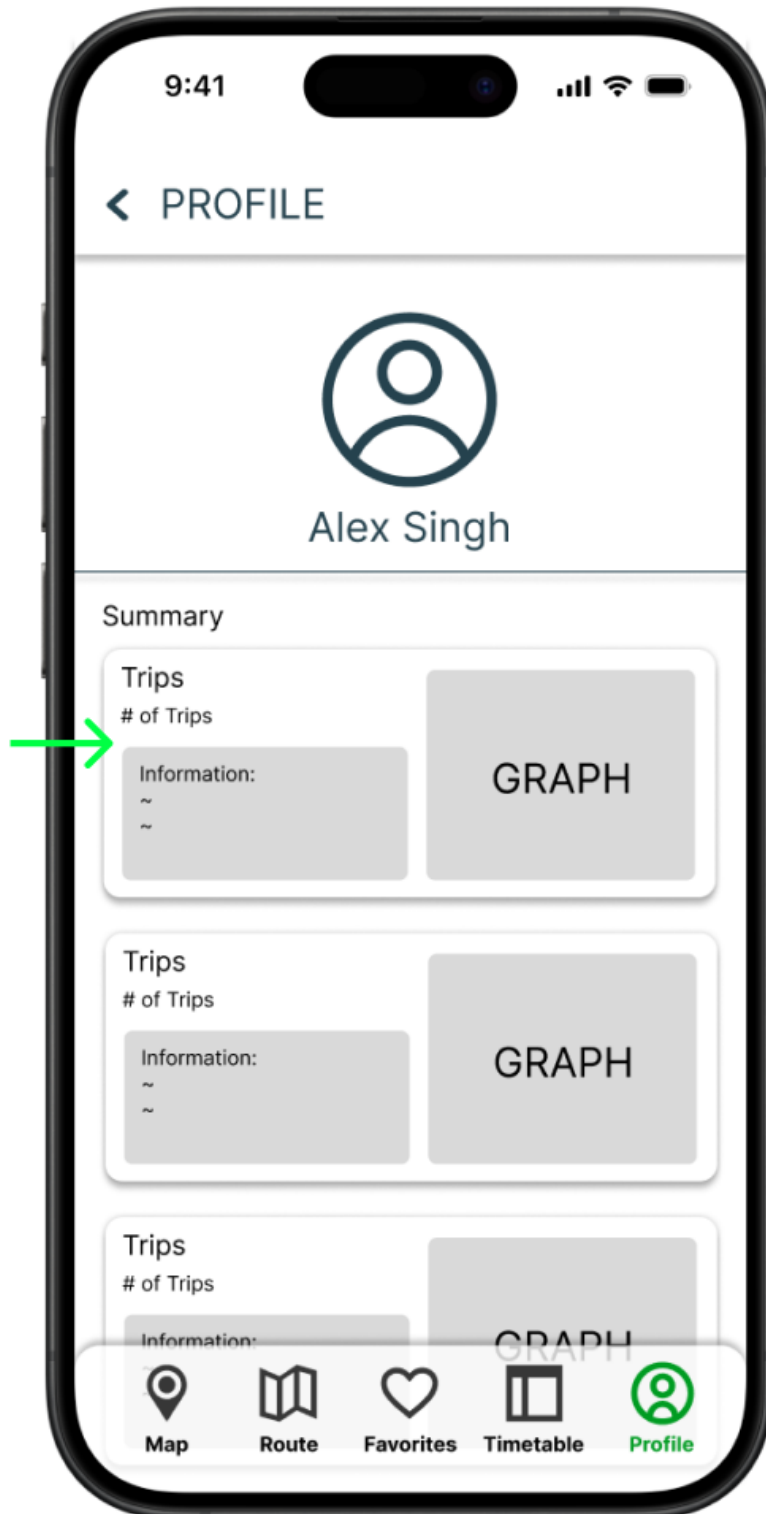
3.

Statistic Screen:
Here, user can view in-depth information on statistics. Here, there will be a graph displaying all the data, as well as number statistics underneath. If the amount of info exceeds the size of the white box, the user can scroll to view further info.

3. User can view data and graph, and scroll to see further info if needed.

9:41

< PROFILE

Trip Information   ✕

of Trips

GRAPH

In-depth information about past trips:
~
~
~
~

Information: GRAPH

Map   Route   Favorites   Timetable   Profile

Part 03: UX Guidelines (20%)

I think the biggest strength of my wireframes is the consistency of the designs across all the menus. This follows with Nielsen's heuristic which talks about maintaining a familiar layout and standard across screens for consistency. This allows for users to quickly learn each screen, meaning that they do not have to spend more time wondering what new words, menus or actions mean during their time using the app [1].

Another strength I think my design wireframes has is efficiency, especially for repeat actions such as checking a saved route. By allowing users to favorite routes and receive notifications about alerts on those routes, the app supports experienced users in completing frequent tasks quickly. This aligns with Nielsen's heuristic of "flexibility and efficiency of use", which allows the design of the app to cater to both new and experienced users. This speeds up interactions for expert users, while allowing inexperienced users to easily and quickly learn [1].

One of the current biggest weaknesses of my wireframes would be accessibility options. The current wireframes do not have support for audio information for those with visual impairments, while the current color palette also does not consider color blindness. This means that the app will not have an inclusive experience and restricts usage of the app from those who may need it the most. For example, a person with vision issues such as partial blindness, may want to understand their route well before leaving their starting location in order to save as much time as possible, but if the app does not consider this type of person and has no options for audio instructions, this may push them back from using the app [2].

Another weakness that my designs currently have is the clarity of alerts. After reaching this point in the process and looking back on my designs, I feel that there should be a menu for alerts that the user can reach from the main menu, ideally slotting into the bottom menu as shown in the figure below. This would improve clarity as now there would be a clear alert button that is always accessible regardless of whether there are active alerts or not. I think that the current alert design with the yellow icon visible only on the map screen is unintuitive and only restricts the user, making the app less perceivable [2].
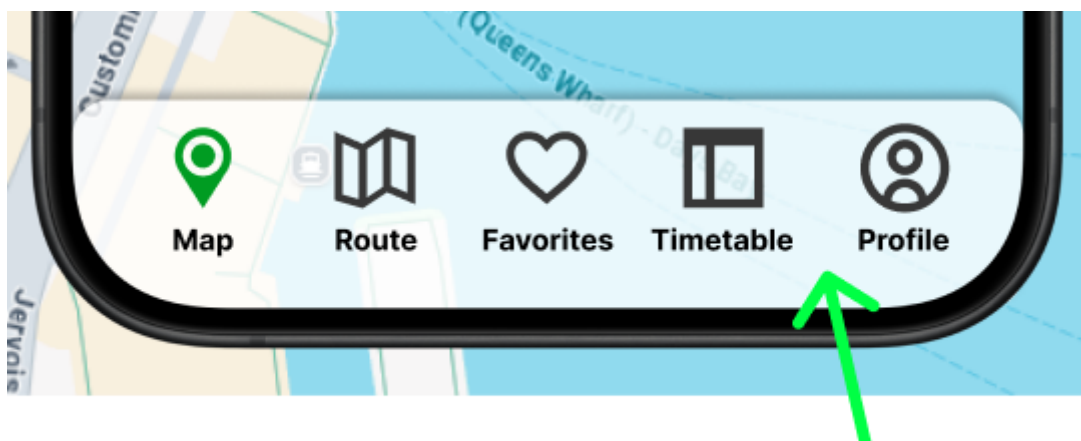
- Figure 1: slotting an alert button to easily access all alerts in this menu.

Another feature I have since realized that I should have added is error prevention and feedback. For example, when saving a route, the app should have some kind of feedback that confirms to the user that the route has been saved. This could be via the heart button being filled with a pink color to show that it has been saved, and/or a quick, fading pop-up that displays a message to the user that the route has been saved. This would help keep users informed about the status of the system, meaning that users can learn the outcome of their interactions with the app, and help them determine their next steps [1]. Clarity here to support visibility of system status will create predictable interactions, helping users feel confident that the system has registered their input correctly and creating an experience that create trust in the product [1].

Overall, I think the design successfully supports Alex's goals through simple flows and an efficient layout. However, refinements in accessibility, discoverability, and clarity of alerts could further improve usability and overall user experience. Future iterations would benefit from user testing to validate and refine key features in order to better meet user needs, goals, and reach a wider audience, which is vital for a public transportation application.

References

[1] "10 Usability Heuristics for User Interface Design" NN/g. https://www.nngroup.com/articles/ten-usability-heuristics/ (accessed Apr. 29, 2025).

[2] "Accessibility" Apple Developer Documentation. https://developer.apple.com/design/human-interface-guidelines/accessibility (accessed Apr. 30, 2025).

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