

1. Strive for consistency

-The button positioning of the back/undo button is quite inconsistent. At screen (1) after setup it says 'no back button...' at the top left corner, yet in that exact same spot it says there is one in screen (3). And then in screen (4), the back button seems to be gone again. On screen (5), to go back to the previous screen one has to select 'X' button at the top right instead, or by swiping left/right to dismiss. To resolve this, one can simply standardize a back button at the top left corner for all screens so that users don't have to keep track of different positions/gestures for different screens

-Also, there is some lack of gesture consistency; screen 1 says tap anywhere to dismiss whilst screen 5 says swipe left or right to dismiss. Additionally, for screen 3 one can 'shift' left/right to adjust map view, a similar gesture to the one mentioned above yet with a different functionality. To resolve this, I recommend simply removing the functionality of swiping left/right to dismiss, and using the back button mentioned above, to have the same gesture performing the same function.

2. Cater to universal usability

Prototype has several aspects catering to universal usability:

→ different language options and distance units to accommodate cultural and international diversity

→ Users with disabilities are considered as well, through colorblind and disabled-friendly pathway preferences, where even handicapped toilets and lifts more visible if disabled pathing has been selected.

→ escalator or lifts for short paths can cater to the elderly

-In addition, a different initial setup page appears for first time users, allowing them to do a quick setup. After subsequent logins, the page is not shown anymore; hence attempting to cater to users with different levels of experience.

-However, there is some lack of plasticity as the navigator may not run well on a specialized GPS device (a possibility as stated in Lab manual 1). It was mentioned 'users will use back button on smartphone', so this undo functionality could be missing in specialised GPS software lacking an undo button. Again, a solution would simply be to have an undo button on the top left corner.

3. Offer informative feedback

-Some visual feedback is present, e.g. in screen (3), if a user has selected a shop, it would be shaded. However, this could be increased to try and provide visual feedback for more user actions. For instance, the pathway/route arrows can be shaded or dulled after user has crossed that part of the path (as detected by the GPS). This would give additional feedback to the user as to where they have walked past. Also, feedback could be given if user rotates to switch to floor view (screen 4), e.g. a 2-second message that says "Switched to floor view", as it seems like a starkly different mode switched to with just a 180-degree rotation.

4. Design dialogs to yield closure

-The initial page for first-time users is clearly defined with a "Get Started" button. After initial setup, the feedback "You're all set up" indicates its completion; hence I think the initial setup action sequence is defined relatively clearly.

-Whilst the wayfinding program has a prompt on 'Where would you like to go?' that could be interpreted as the start, and cards disappear when user passes the area, feedback can also be added at the end when user reaches destination. E.g. "You've reached your destination!", which could potentially also provide the user with some sense of accomplishment.

-In addition, instead of just providing a textual description, a turn-by-turn visual depiction of each step involved in the process of reaching the destination could be provided. E.g. when the user taps on the step, the corresponding arrow is highlighted on the map, so as to make clear to the user where the step begins from, where it ends etc. and make the action sequence more well-defined.

5. Permit easy reversal of actions

- The back/undo button is not seen on some pages as mentioned in part 1; and if used on GPS specialized software the lack of an inbuilt back button could result in no undo functionality in some scenarios.
- Also, whilst swiping left is present on some screens to go back, some novice users may be unaware of this. Once more, this can be resolved with the solution mentioned previously of adding an undo button on the top left for all screens, which could encourage some level of interface exploration.

6. Support internal locus of control

- There is an initial setup to choose preferences, which also allows skipping of initial setup with default values, as well as subsequent skips for specific preferences. Also, within the main wayfinding program, users can change destination of the route-finding program if they see a store they like. These allow users to have some customization and sense of control.

-However, reaching the floor view screen (4) by rotating vertically may cause user confusion if they accidentally do so (as they may want to return to landscape mode but rotate in the opposite direction) and do not know where the original wayfinding screen 3 disappeared to. Such a situation could confuse users as there does not seem to be a clear on-screen undo option at screen (4). Hence, I would suggest including an additional option in the settings page to select either floor view or map view, and this option can be explained in the initial setup screen. This could help avoid surprising interface actions that may build anxiety and dissatisfaction among users who experience this.

7. Reduce short term memory

- In screen (3), cards disappear when user has passed the area but can be retrieved by scrolling up if the users wants to recall where they previously travelled past, hence user doesn't have to memorise those.
- However, a few actions may not be so intuitive / common and might require some memorizing, e.g. the gesture to switch to floor view (screen 4) and swipe left/right to dismiss. To switch to floor view, one can instead have a corner button or in settings there can be an option as mentioned earlier, so that users don't have to memorise these gestures just for the app.
- Also, the settings button seems to appear only in 1 screen (screen 1); users may have to remember which screen that appears in if they want to change settings. To resolve this, the settings icon can appear at the bottom right corner of every screen instead to avoid needing to remember that.
- Last but not least, search suggestions based on search history/favourite places can be added if users want to access previously or commonly searched places whilst avoiding having to recall what they typed previously.

8. Prevent errors

- Drop down spelling suggestions are present during search for places to avoid typos.
- However, if the user types a different location (from current location) into 'from' at screen (2), and since starting location on the map seems to be based on current user location, would an error occur? Would there be a route on how to get from current location to the starting point? It is not well-elaborated in the diagram so I can't tell for sure. To avoid this one can simply gray out the 'from' part if that is the intended functionality to prevent this error from occurring.
- Also, there could be an option in settings for 'help' or 'FAQs' because of the many gestures involved, which users can access if they face an error and read error troubleshooting messages.

Additional comments:

- One can have 'X' button to hide directions list too at screen 3 for users who don't want to see textual directions
- One can also show what is in settings page to display what settings are available
- At screen 3, does 'clicking back exits from program' refer to exit entire program or just the wayfinding program? Whichever one, it could be labelled 'exit' or 'back' for clarity
- Also, in the initial setup screen, skip is for skip initial setup and skip is also for skip current choice. To differentiate between the 2, the 'skip initial setup' could be labelled as default instead to reduce confusion.