GUI Component Description

The GUI component consists of the usability of the functions of the app, especially done so it can be accessible to the visually impaired.

**Input:**

The input to the GUI component will be the instructions given verbally by the user, which will be checked against the possible actions the app can perform.

**Output:**

The output to the GUI component is the triggering of certain commands/components, navigating menus, and verbal instructions and notifications that are relayed to the user that help them use the app. This consists of alerts for obstacles, turns, and ETA, triggering the navigation component, choosing options, returning to a previous menu, etc.

**Implementation:**

The app will use voice recognition to get input from the user. This is then compared against the index of possible commands. The process will go like this:

1. User gives a command
2. Command is compared to index of commands
3. If command exists, execute that command. If not, prompt the user for input again
4. Repeat steps 1-3 until the user closes the app.

List of commands prefixed by ‘Theia’:

“Take me to \_\_\_”

“Change destination to \_\_\_\_”

“Cancel navigation”

“Contact assistant”

“Contact emergency services”

“How long until my destination?”

**Validation**

The app will be tested based on its ability to complete the following actions:

* Prompt the user
* Recognize voice input
* Compare voice input to index of commands
* Execute commands

Unit tests for these can be generated by comparing the expected output to the actual output. For instance, we can generate a test that has a voice issue a command, and check if the app recognizes what words the voice is saying. If the output matches, we know it was processed correctly.