Accessible Survey Logic

# Background

Accessible survey logic does not exist. Most external survey tools don’t take accessibility into account, and when they do, it’s an afterthought. Rather than making the tool itself fully accessible, they just say to not use certain types of questions, or to write a note at the top saying people using screen readers will experience issues. This is a cop out.

For people who are blind or have low vision who need to use a screen reader, this makes it so they can no longer participate in surveys. This locks them out of research, and prevents them from having their voice heard for feedback and decision-making.

# Current Problems

Today, if someone with a screen reader tries to use a survey that includes these branching logic paths, it will throw errors. The surveys may show hidden questions from other sections that aren’t relevant. The numbers of each question as presented to screen readers will be off, which can confuse people further.

# Design Requirements

* Creation of state machine with branching logic.
  + Ex> Waits for an answer. If someone answers “Yes” to the first question, it takes them to a separate page than if they answered “No.”
* This explicitly needs to work for screen readers.
  + Proper headings, reading order, and use of ARIA tags & HTML 5 landmarks for navigation
  + Would likely be best suited for vanilla JS/CSS/HTML as that allows for the most direct control over accessibility related attributes. Many JS frameworks don’t do a great job of generating accessible HTML by default and need to be overwritten.
* State machine
  + E.g. Wait for an answer -- based on that, fetch the next question.
* Storing data and working dynamically
  + Would need a static representation (likely incorporating JSON) of both the survey definition and of the filled out survey
  + For the first iteration, we don’t need a backend integration. Simply a ‘load survey JSON’ in the beginning and ‘download response JSON’ at the end will suffice at this stage.
* Nice to have:
  + Some thoughts around an accessible interface for the design/creation of a survey (e.g. specifying question type, content, and logic).
  + This could be anything from a mockup to some beginning code samples.

# Useful Links and Additional Information

* **Guidelines for accessible surveys and forms (University of California):** <https://www.ucop.edu/electronic-accessibility/web-developers/tools-and-testing/guidelines-accessible-surveys-forms.html>
* **Web Content Accessibility Guidelines (WCAG) 2.1** W3C Recommendation 05 June 2018: <https://www.w3.org/TR/WCAG21/>
* **Accessible Rich Internet Applications (WAI-ARIA) 1.1** W3C Recommendation 14 December 2017: <https://www.w3.org/TR/wai-aria-1.1/>