

# Accessibility in Heuristic Evaluations

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# Heuristic Evaluations

- Method of evaluating an interface
- Uses a small set of experts and a set of guiding principles
- Experts perform tasks and see how interface fits principles
- Can be used at various points of the design process

# Existing Frameworks

- Set of guiding principles
- Several exist:
  - Nielsen 10
  - Amélie Boucher's Ergonomic Criteria
  - Arhippainen's Ten User Experience Heuristics
  - Kaniasty's CARMEL Guidelines
- Few mention accessibility, none focus on it
  - Boucher's say to make interface accessible without specifics
  - CARMEL gives some technical accessibility details

# Accessibility

- Defined here as:
  - a design that is capable of being used and understood by people with a range of abilities and disabilities and using a variety of tools to interface with the design
- Legally required, but with limited guidance
  - Technical
- Need for heuristic framework earlier evaluation
- **Nondisabled person cannot make heuristics for disabled people**

# Proposed Plan

- Use disabled people as the experts
- Have experts conduct cognitive walkthrough on three levels of prototype:
  - Production
  - High fidelity
  - Low fidelity
- Note accessibility concerns as they perform walkthrough
- Card sort the issues to generate themes

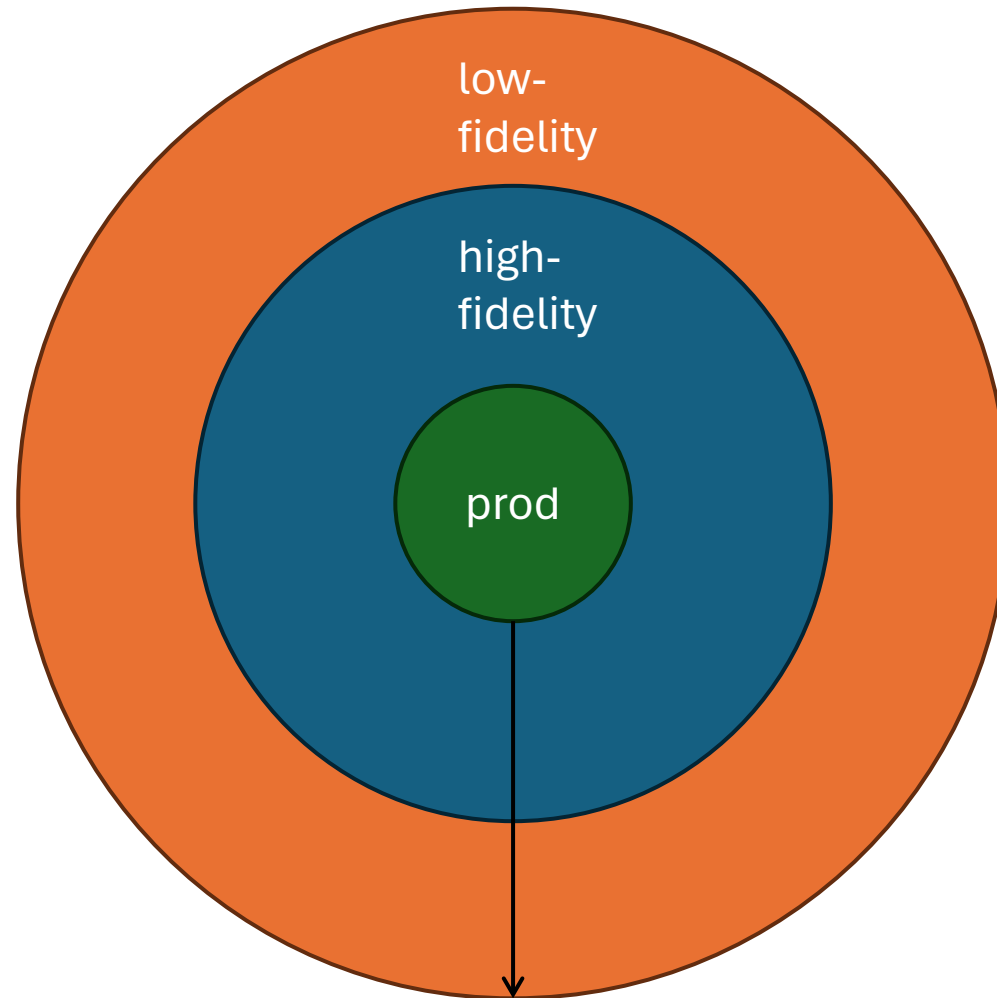
# Cognitive Walkthrough

- Example app is a notetaking app
- Participants will complete series of tasks:
  - Create a note
  - Edit an existing note
  - Delete an existing note
- As tasks are completed, participants will note accessibility concerns in the design
  - Description and design detail separately

# Card Sort

- Used to sort the issue descriptions into groups
- Generated groups will form the foundation of the heuristics
- Generating groups using card sort will allow for general themes to emerge from the data in a bottom-up approach to making the heuristics
  - Groups generated by disabled people

# Levels of Fidelity

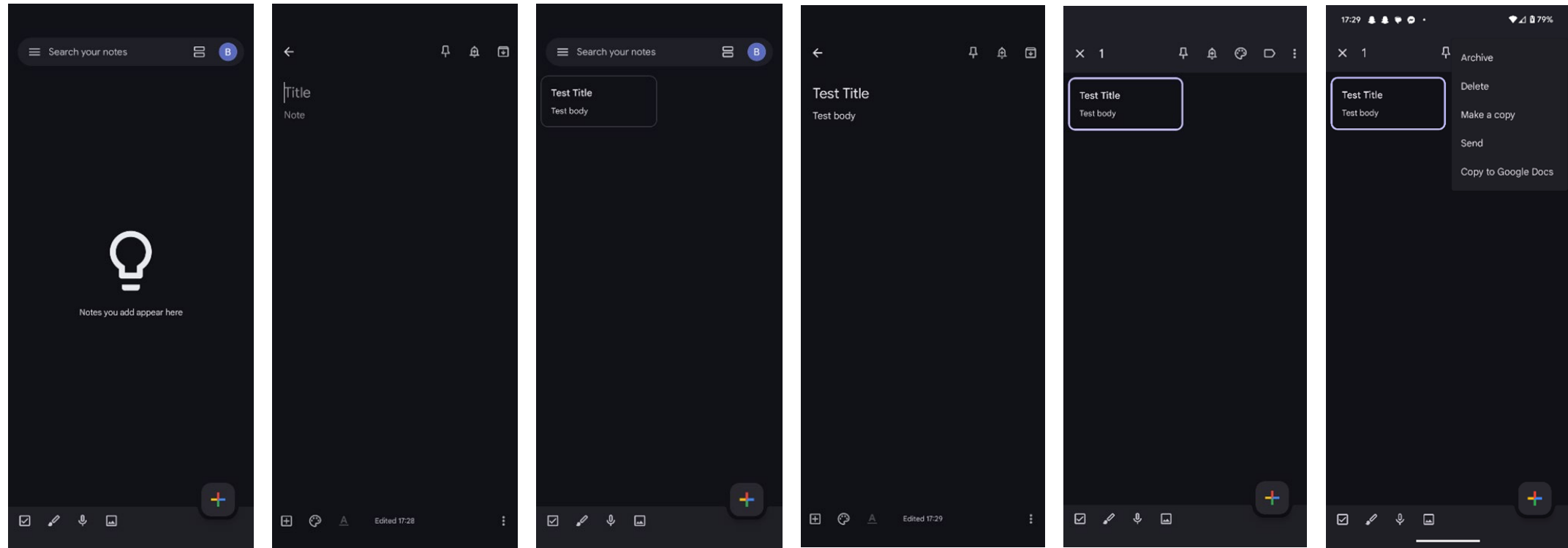




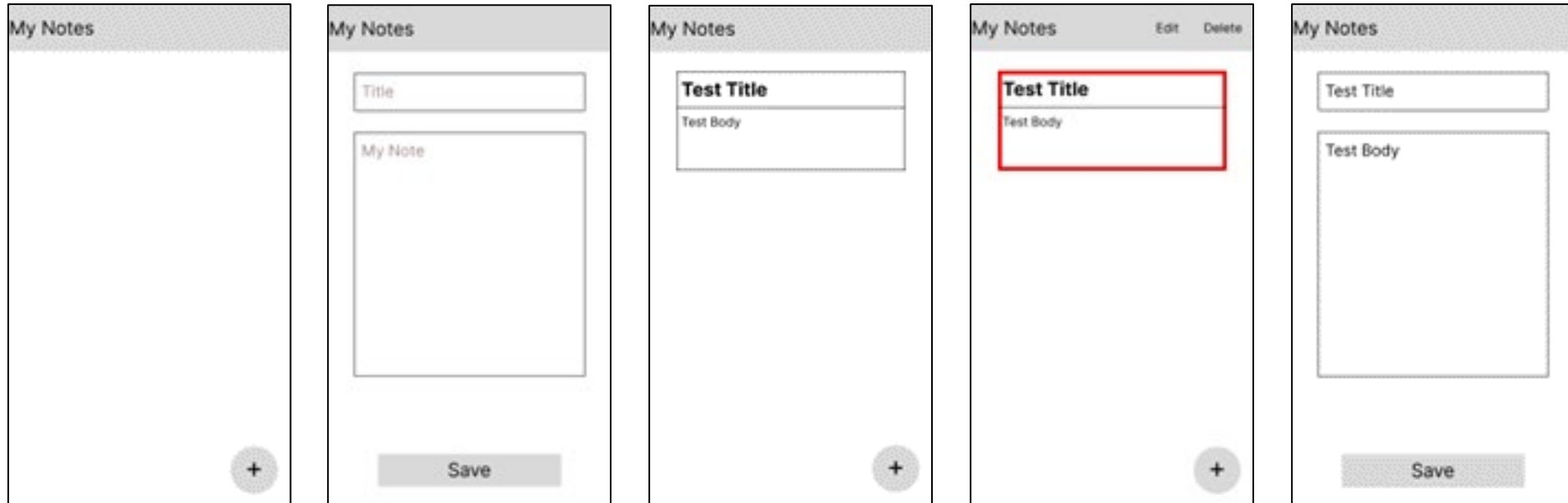
# Why three levels?

- Moving from production-level to low-fidelity, in that order, will move from technical issues to more abstract issues
- General principles are needed, not technical guidance
  - Technical guidance already exists
- Heuristics should be implementation agnostic

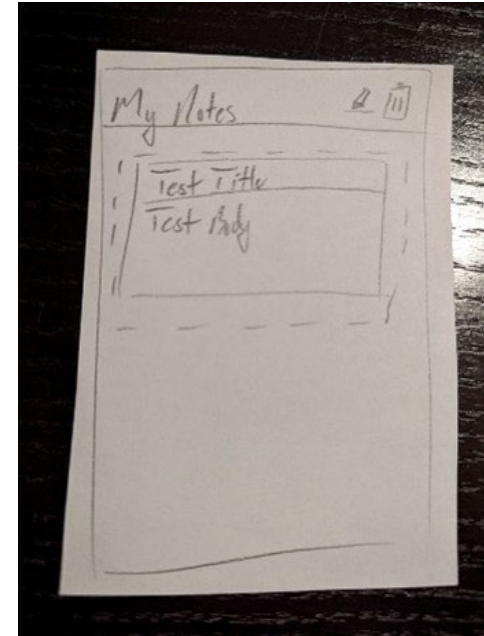
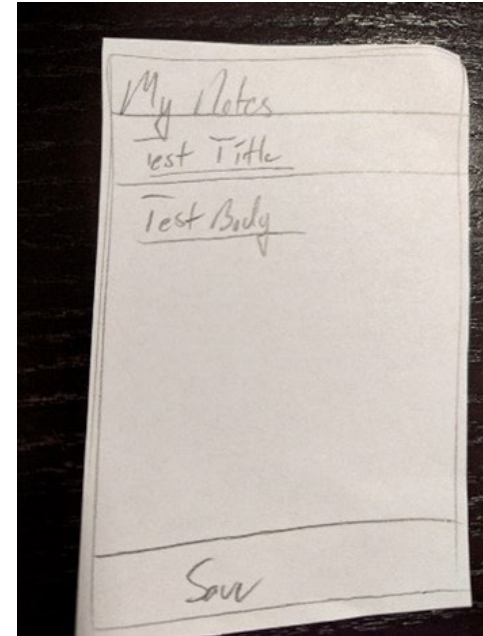
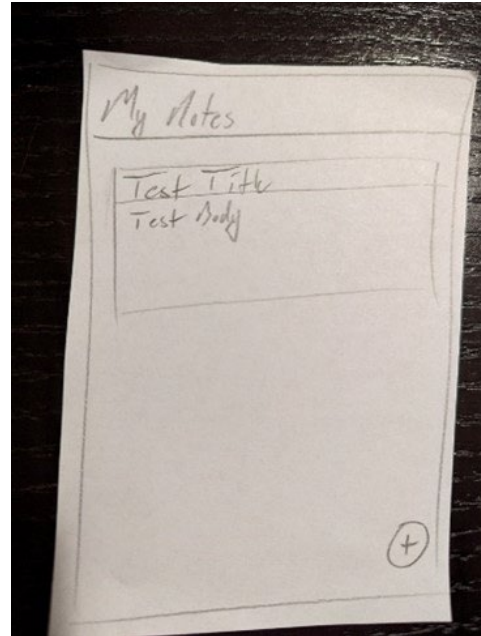
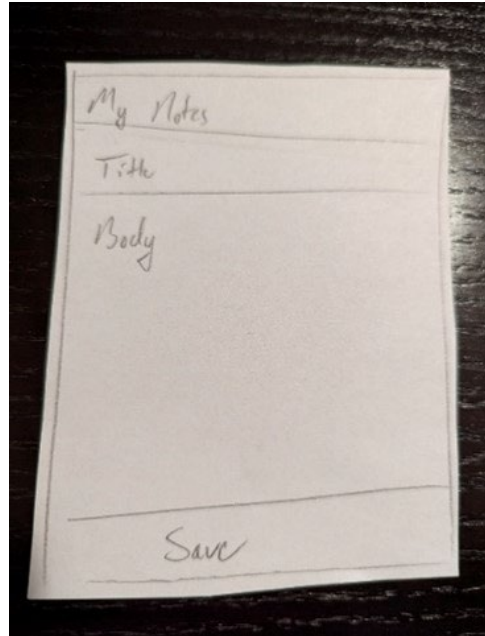
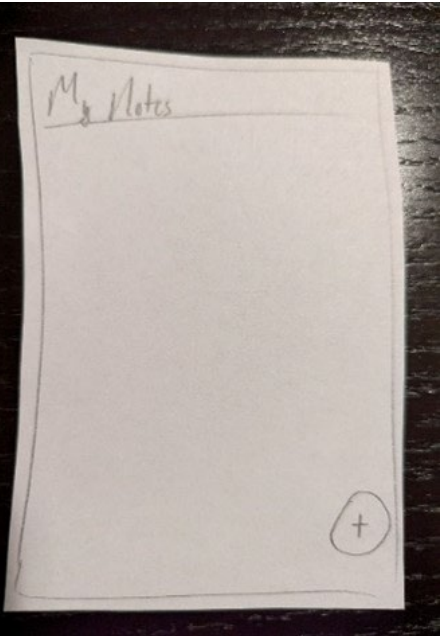
# Production Design



# High-Fidelity Prototype



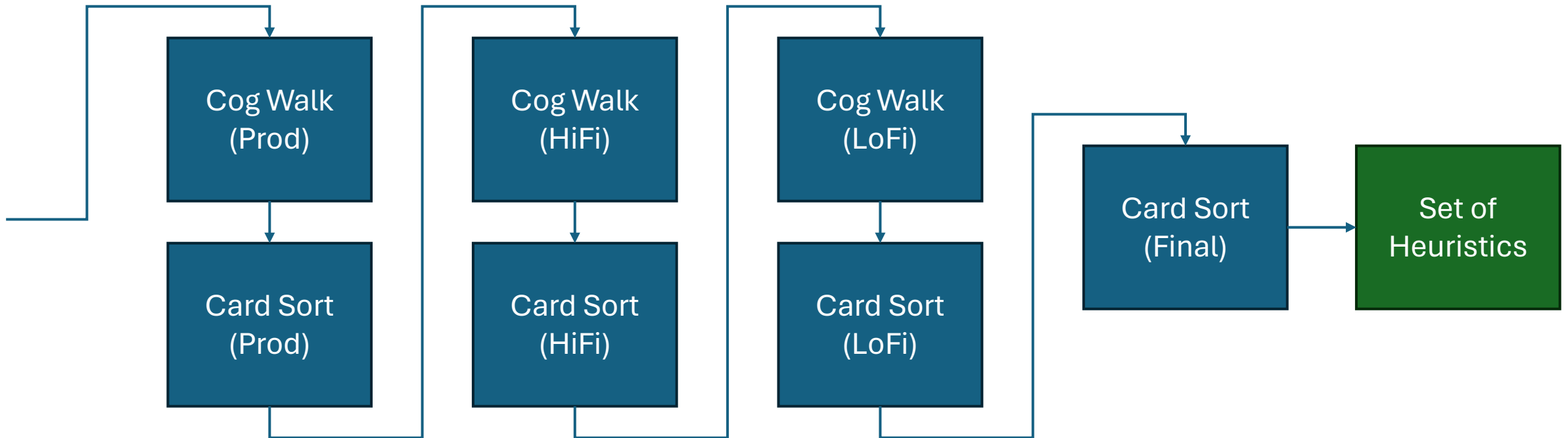
# Low-Fidelity Prototype



# Final Card Sort & Validation

- Final card sort will be performed on all three sets of generated groups
  - Final set of general principles to be heuristics
- A new design from new domain (not notetaking) will be given to participants with known accessibility issues based on heuristics, which participants should identify using new framework
  - Only known to research group
  - Results used to refine heuristics

# Process Diagram



# Refinement

- Proposed plan uses only one domain (notetaking), which is limited
- Process could be used across multiple domains to develop broader heuristics
  - Or more targeted sets of heuristics
- Final heuristics will also be validated through discussion with participants
  - Any noted issues or concerns must be handled before using new heuristics framework

# Conclusion

- Heuristic evaluations allow for feedback at multiple stages of design by experts
- However, existing heuristics do not focus on accessibility
- Proposed process for generating accessibility-focused heuristic framework using cognitive walkthroughs and card sorts on multiple prototypes
- **Representative population used throughout the entire process**



Questions?