CSC 2002S: Mobile Design & Development

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# Introduction

Your assignment is to design a mobile app that will address the problem statement below. A5 (Phase 1, due 26 Oct) is the first step towards this goal – gaining empathy for potential users through interviews and analyzing the results. Based on these results and principles covered in lectures, in A6 (Phase 2, due 9 Nov) you will prototype a mobile solution and justify the design.

Both assignments are to be done individually or in pairs. At the top of each page of your assignment please indicate your names (both names for students working in pairs). If you are working in pairs only one person should submit the assignment.

To help you plan and prepare, both assignments are being released and described in this document.

*This assignment is based in part on “*[*The Wallet Project*](https://dschool-old.stanford.edu/groups/designresources/wiki/4dbb2/the_wallet_project.html)*,” a resource created by the Hasso Plattner Institute of Design at Stanford.*

# Problem Statement

Design a way for caregivers to read digital picture books to small children.

Regularly reading books with children under six is great for early childhood development. Libraries can be a great resource for this, but there’s also many free digital picture books available through services such as Book Dash ([bookdash.org](http://bookdash.org/)) and [Project Gutenberg](http://www.gutenberg.org/wiki/Category:Children%27s_Bookshelf) ([gutenberg.org](http://www.gutenberg.org/wiki/Category:Children%27s_Bookshelf)). However the experience of selecting and downloading the books can be complicated, and the apps used to support reading the books are primarily designed for individuals reading books alone, rather than parents reading books to or with young children. This results in accidental page turns, unintended downloads, or frustrated kids wanting to read books that aren’t actually available. Design a better way for people to read digital picture books with small children.

# A5 (Phase 1) Gaining Empathy

Due 26 October

Marks – 40 points

The goal of this assignment is for you to explore user-centered design by gaining empathy for potential users of your design. For this assignment you will interview three potential users - anyone who reads books to young children. From there you will analyze the interviews by building an empathy map and ideate by making some quick sketches. You will also provide peer feedback on sketches done by your classmates.

You will find Lecture MDD-02 on Empathy especially useful as you do this assignment.

## Interview (20 points)

Keep interviews fairly short, aim for about ten minutes each. Do maintain social distance – interviews via call or chat are fine, but make sure to establish rapport with the interviewee before you start asking questions.

Participants can be anyone but should include no more than one university student. They should be people with experience reading books to young children, and preferably with mobile device experience. Try to find people that may provide different perspectives.

The questions that follow are intended to help guide your interview. You may find that answers (especially typed in chat) are a bit short. If that happens, “dig deeper” and invite them to tell you more. If they share something unexpected, ask “why?”

**Interview Guide**

1. When did you last read a book to a child? Tell me about that.  
   *Potential follow up questions. What time of day was it? What book did you read? How did you pick the book? What is your relationship to this child? How often do you read books to kids?*
2. Do you ever use your phone or another device for reading picture books?
   1. *If yes:* What apps do you use? Where do you get the books? What is it like*?* What works and doesn’t?
   2. *If no:* Why not? *Dig deeper.*
3. How do you feel about the idea of reading digital picture books with small children? Why?
4. What features would you want to see in a digital picture book reader? Why?

You will submit transcripts or detailed notes of each interview, but make sure to remove/redact any personal information (e.g. names, phone numbers). In addition, write a short paragraph summarizing how you recruited each participant, provide a bit of demographic background on your participants, and discuss any potential biases of your selection (i.e. who is or is not represented).

## Affinity Sorting (5 points)

Once you have completed the interviews, you should do an affinity sort on the insights from each user. You can do this with paper stickies and take a photo (make sure it is legible) or use an online virtual sticky service such as Jamboard (jamboard.google.com), Stormboard, Miro, or even just squares in PowerPoint. Submit a photo or screenshot of the stickies.

## Empathy Map (5 points)

Based on the affinity sorting, build an empathy map for your interviewees. Submit a photo or screenshot of the empathy map.

## Ideate (5 points + 5 points for providing peer feedback)

Based on your results, take a stand with a point of view. Completing this statement:

Caregivers need a way to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ because (or “but” or “surprisingly…”)

user's need

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insight

Sketch at least 5 radical ways to meet your users’ needs. They do not need to be perfect – merely to capture your ideas! Try not to spend more than 5-10 minutes doing these sketches – go for volume! You can use words to help clarify or capture your ideas – the goal is to brainstorm many ideas. You will also submit this as a separate assignment. Peers will be asked to give you constructive feedback on the sketches.

You are not being marked on the quality of the sketches, just the quantity. Your score for this section will be 1 point for each unique sketch provided plus five points based on the quality of feedback provided to your peers. You are expected to provide feedback on three other submissions.

Submit a single document with your problem statement at the top, followed by your sketches.

## Format for report

Submit a single PDF or DOCX document with all of the above (including the Ideate section), making sure to clearly mark each section:

1. Interviews
   1. Transcript 1
   2. Transcript 2
   3. Transcript 3
2. Affinity Sorting (paste readable image)
3. Empathy Map (paste readable image)
4. Ideate (number the sketches)
   1. Sketch 1
   2. Sketch 2
   3. Sketch 3
   4. Sketch 4
   5. Sketch 5

You will also submit another copy of the Ideate section separately for peer marking.

## Peer Marking

For each submission give written feedback (50-100 words each) on your likes and dislikes about the different sketches, which one is your favorite? Would you like to mix any of them up?

Give a score of 1-5 based on the number of unique ideas submitted.

# A6 (Phase 2) Design a Prototype

Due 9 November

Marks – 60 points

You need to design a prototype based on your results from Phase 1. You should start by listing three or more primary features for the system, explaining why you think those features are useful on a mobile device. Do not just give your personal opinion - think about the social issues discussed in lectures, and design patterns you may have seen in similar apps. You may want to quote interviews or peer feedback where relevant.

Next, you need to design how the interface for this functionality will appear. To that end you need to create a prototype and annotate it with a rationale for your design; be prepared to explain why your design looks the way it does with reference to the design ideas in the lecture. Simply stating that you think your design looks nice does not constitute an acceptable rationale. The more (relevant) information you can give about why the interface looks and works the way it does, the more marks you will receive. Where relevant, reference specific design principles and sources using academic conventions for referencing[[1]](#footnote-2).

You do not need to implement this as an android application – you may use any prototyping tool, such as Invision, POP, Fluid UI, or PowerPoint. Hand-drawn images are also acceptable, but must be readable. You should justify and discuss the fidelity of the prototype.

For this assignment, you will submit a written report of up to 3500 words, containing:

* Overview of the app, describing your problem statement, your target audience and any assumptions you have made. You will want to show how the features you choose fit together in the overall app.
* A list of features with an explanation for their inclusion
* An initial design for each feature. This will consist of a number of screenshots, with clear markings of how one transitions from one screen to the next. It may be easiest to have a diagram with numbered elements and refer to those numbers in the text. Be sure to show how errors or edge cases would be handled in your design. *Diagrams may be hand-drawn if desired but must be clear to the reader.*
* For each feature, justify the design; explain why it looks and works the way it does. Do not just state the name of relevant design principles, but make an argument for why others will appreciate your design.

For resources on academic report writing, please refer to Vula resources, and visit the [UCT Writing Centre website](http://www.writingcentre.uct.ac.za/) for additional resources. Any images included should be clearly numbered and captioned. Please use the [ACM citation style and reference formats](https://www.acm.org/publications/authors/reference-formatting).

## Grading

### Feature Rationale and Design: 45 marks

Each feature is worth 15 marks. Up to 3 features will be marked. If you have added more than three features, you should clearly indicate which you want to be marked, or they may be selected at random.

* **Feature Rationale (5 marks):** Fully justify the features that you decided to include. Include details of any research or experience that lead you to choosing them with referencing.
* **Design (5 marks):** Document your screenshots, showing how to trigger transitions, and clearly showing the interface for your feature.
* **Design Rationale (5 marks):** Explain your design fully, linking it to the concepts and ideas that you were taught in class. Include in this the ways in which it conforms to the different standards and models, if appropriate. Every design decision should be motivated.

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|  | Not Done (0) | Fair (1-2) | Good (3-4) | Excellent (5) |
| Feature Rationale | No feature specified. | Feature described adequately but not justified. | Feature justified. | Clearly articulated and cited rationale for feature. |
| Design Prototype | No design specified, or design unclear. | Prototype provided (of any fidelity) but transitions and where it fits in the existing app are unclear | Clearly depicted prototype including transitions, error handling  and synthesis with current app | Innovative prototype, clearly articulated, leverages affordances and mappings in an intuitive way. |
| Design Rationale | Design not justified. | Justification is given but doesn’t reference design principles or other concepts taught in class | Justification includes either an explanation of how it adheres to standards and models or it is linked to HCI and design concepts | Justification correctly references both appropriate standards and HCI design concepts. |

### Overall Design and Layout: 15 marks

Provide an overall design for your finished app, showing how all of your features will interact. Make sure this corresponds to your explanations with the rest of the assignment. You should discuss your target users and state any assumptions. Specifying the device(s) that the app would run on may be helpful too.

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| Score | Description |
| Not complete (0) | No layout section or screenshots provided |
| Poor (1-3) | Screenshots incomplete or screenshots provided but it is not clear how the different features and screens will interact. |
| Minimal (4-7) | Layout is specified but the features or designs do not mesh well together, or are confusing to the projected user. |
| Sufficient (8-10) | Interactions between features are clearly specified, with markings for how various features are invoked, and how different user interactions lead to changes in screen layout. Fidelity of the prototype discussed and justified. |
| Good (11-13) | All of the above, and the screenshots adhere to the appropriate platform design principles (probably android). Clear synthesis of the app overall (i.e. consistent fonts, buttons, etc). |
| Exemplary (14-15) | Strong discussion and targeting of the designs to a target audience, complete application specification, accounting also for application and user errors. |

1. Do not reference lecture slides. [↑](#footnote-ref-2)