CS422: User Interface Design and Programming, Spring 2022
Instructor: Nikita Soni, Ph.D.
University of Illinois Chicago

Group Project #2: Startup Client Project

Project Overview

This project involves student groups working as designers to design an interface for an emerging startup of your choice. In groups of 3 or 4 members, you will follow the design process covered in this course to understand **user needs**, **generate design ideas**, **refine** your design ideas to generate an **interactive high-fidelity prototype**, build a working **UI implementation** of your prototype, and conduct **user testing**. You will produce design documentation of your process and results. This project will conclude in a **public showcase event** which will be attended by members of the UIC community. You are encouraged to email the startup to share the final version of your high-fidelity prototype (email template provided)!

For this project, you have weekly deliverables, a mid-point critique as well as the final showcase assignments. Submission dates are color-coded in orange, purple, and green based on the submission type.

Selection of Project Idea

You will be designing an interface for an emerging startup of your choice (founded or launched in the years 2019, 2020, or 2021). You can find startups from the following lists or any other similar list: Y Combinator's 2019 (see demo day 1 and day 2), 2020 (see demo day 1 and day 2), 2021 (day 1, and day 2). Also see startups listed in Techstars Chicago demo day: 2021.

Pick a startup that has articulated a **problem** that it's trying to solve <u>while ignoring any interfaces they've built already - you'll come up with your own solution and design using only their problem description</u>. <u>You should not be doing a redesign!</u> For example, Simbiis described as a "bartering marketplace" – you might design an app that lets people list goods for barter and accept/reject offers. There is a **two-group limit per startup**. Once you have found a group, one member should fill in this sheet to claim your group's chosen startup. If you have a startup you're passionate about, move fast and claim it. Think about how you will reach out and talk to your representative target users when picking a problem area for the project. If your project requires talking to highly specialized users (e.g., children or older adults), you can use your network to gain access to those users (the instructor should be notified in this case); otherwise, you should consider choosing a project idea for which you can work with UIC student population. Not being able to find representative target users to talk to will not be accepted as an excuse.

Alternatively, with the instructor's permission, you can also choose to propose a project of your choice that is not listed as a startup.

Design Process

You will follow a similar process to that of Project #1, conducting user research to inform your design process, and creating a design solution first documented through wireframes. Please refer to Project #1's Process guidelines when needed, to supplement your understanding. **In Project #2**

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you will go beyond Project #1 into expanding your wireframes into interactive high-fidelity prototypes, conducting user testing, and building a fully functional UI implementation of your prototype.

1. Focus setting

i. **Team kick-off meeting:** To kick-off the project you will meet with your team during **class time on Feb 24th**. Conduct an initial team meeting to outline the project idea, project scope, target audience, and key design questions that you want to target in your project.

ii. **Set your focus**: Based on your meeting, take time as a group to set your **research focus**. What is the **relevant context**(s)? Who are your **target users** (see next)?

iii. Deliverable 1, 03/03, 11:59 PM (20 points): Create a **6-minute proposal idea video** presentation. Use this slide template. A text file containing a link to the proposal idea video should be submitted via Blackboard. **Reminder: don't look at your chosen startup's interface during the design process – we want you to create an original design not based on anything the company has done so far.** Submit a PDF file (named: `group[number]-demo.pdf`) containing a link to the proposal idea video via Blackboard. See page 6 for submission details for Deliverable 1.

2. User Research

I. **Create a discussion guide:** Based on the focus setting, create a discussion guide that your group will use during user research. Discuss guide template can be found here.

II. **Conduct focus groups or interviews**. You should recruit and conduct **one or more focus groups,** each focus group should have at least 3 users from your target population. You should also conduct **one-on-one interviews**. In total for both focus groups and interviews, **undergraduate** students should talk **to 6 to 8 target users** and **graduate** students should talk to **8 to 10 target users**. Each group should get this user signature sheet signed by their target users and submit it with Deliverable 2. *Clarification: Clarification: You should do at least one focus group and can pair it up with interviews (not compulsory).*

III. **Walking the data**. Use affinity diagramming to analyze the results of your focus group(s) / interview(s). Identify the main user needs that seem to be emerging. What are the target users' goals, priorities, preferences, and experiences? What are the existing breakdowns and opportunities in their current experiences related to the design context?

IV. Deliverable 2, 03/08, 11:59 PM via Blackboard (10 points): submit a PDF file containing your discussion guide via Blackboard (name it as `group[number]-guide.pdf`).

V. Deliverable 3, DUE 03/15, 11:59 PM via Blackboard (10 points): submit a combined PDF file containing (a) transcripts or notes of your focus group (s) and/or interview (s) with the required number of users, and (b) the participant signature sheet. Submitted transcripts should contain the name of the group member(s) who transcribed them. Submission should be made Blackboard (name the deliverable as `group[number]-transcripts.pdf`).

VI. Deliverable 4, DUE 03/18, 11:59 PM via Blackboard (10 points): submit a PDF file containing (a) an image of the final affinity diagram, (b) 4-5 key user needs that your group will focus on, (c) breakdowns, and (d) design opportunities. All the themes and sub-themes

should be clearly visible in the submitted affinity diagram image. Submission should be made Blackboard (name the deliverable as `group[number]-affinity.pdf`).

3. Generate Design Solutions

I. **Persona, Tasks, Scenarios, and Storyboards**: You should follow a similar design process as is outlined in Project #1. Process: creating personas (2-3) using the toolkit provided in lecture08 slides, key user tasks, brainstorming design ideas, and creating scenarios and storyboards (2-3), see lecture09 and lecture10 slides for tips.

VII. Deliverable 5, DUE 03/29, 11:59 PM via Blackboard (10 points): submit a PDF file containing the required number of personas, key tasks, scenarios, and storyboards. Submission should be made Blackboard (name the deliverable as `group[number]-artifacts.pdf`)

4. Design Solution

I. **Initial app design**: You should follow a similar process as outlined in the Project #1 Process to brainstorm design ideas based on your user research, and create task flow(s) and wireframe(s) for your initial app design. **Test the wireframe with 1-2 users** to incorporate their feedback **before** developing the interactive pixel-perfect prototype. Ask users to perform one of your key tasks. Discuss changes done based on the user feedback in the design documentation for Deliverable 6 and the final showcase assignment.

II. **Interactive pixel-perfect prototype:** You will create an interactive pixel-perfect prototype using one of the tools discussed in the class to showcase your final design concept at both mid-point and final showcase. Students must create pixel-perfect interactive prototypes (use of Adobe Photoshop or GIMP to create your screens is recommended). **The interactive prototype should contain every possible transition and feature that is included in your design, no non-functional interface elements should be present.** This is the version that you will present during in-class mid-point critique to receive feedback and guidance on improving your design.

III. **Demo script**: You should also prepare a demo script walking through the top **3 key features** of your design, which you will use to demonstrate your design to the audience during the final showcase (hint: use your scenarios and storyboards as inspiration for this script). This demo script should be submitted as a .pdf document via Blackboard by the final showcase assignment due date.

IV. In-class mid-point critique on 04/07 (40 points): For the critique, you should create a **5-slide presentation**; the *first slide* will give some context to your startup, and the design problem, your *second slide* should contain a task-flow diagram, the *third slide* should contain a link to wireframes, your *fourth slide* should contain a link to your interactive pixel-perfect prototype!, and the *fifth slide* should discuss how did your prototype follow key interaction design principles (e.g., affordances, constraints, signifiers, feedback, consistency, mapping – discussed in lecture04). During in-class critique, your classmates and the course staff will go around the classroom to look and interact with your wireframes and interactive prototype and give their feedback. This will be your chance to show off your work and get helpful feedback from your classmates and the staff!

V. Deliverable 6, DUE 04/07, 11:59 PM via Blackboard (10 points): A zipped file containing (a) a PDF file of the 5-slide presentation that will be used during the in-class mid-point critique and (b) a PDF file discussing **task-flow diagram**, **annotated wireframes**, **images of key-frames from the interactive prototype**, and **2-5 feedback points** received from your peers during in-class critique on your design artifacts

(e.g., interactive prototypes). Submission should be made Blackboard (name the deliverable as `group[number]-prototypes.pdf`)

VI. **Email the startup** to share the final version of your mockups with them. CC your group members and the instructor in your email. Here is the same email draft, but feel free to revise the draft to add details about your project or anything else if you would like.

"Hello [name],

We are a group of computer science [undergrad/grad] students. As a part of our user interface design and programming class project assignment at the University of Illinois Chicago, we were inspired by the problem description of your startup on TechCrunch [provide a link to the problem description]. We followed a user-centered process to design an interactive interface that [add a few lines about how your interface solves some of the problems highlighted in the startups' problem description]. If you are interested and have time, check it out [provide a link to the interactive prototype]. Since you are working on this problem a lot longer, we would love to know your thoughts or feedback!"

5. User Testing

I. **Incorporate feedback from in-class critiques**: You will update your initial app design based on feedback from your classmates and incorporate that in your interactive prototype and wireframes. Make a note of these changes in the design documentation.

II. **Define tasks that you will ask users to do**: To conduct usability testing, you only need 2-3 tasks (which may consist of several sub-tasks). Define success criteria for each of the tasks.

III. **Test with users**: Having participants try out an interface is an important part of testing and a valuable source of feedback.

- **Undergraduate and Graduate students**: Conduct a think-aloud user test of your final interactive prototype with 2 users and include the results in your report. Evaluation metrics may include the number of errors participants made when doing tasks or the amount of time it took participants to complete the task.

- **Graduate students only**: Conduct an A/B user test of your final interactive prototype with 2 users and include the results in your report. As a group, think about how you will change your interactive prototype into 2 versions (A and B versions). Consider principles like affordances, constraints, and feedback to make changes. Decide on your success metric or analysis criteria.

    - Write down your **null hypothesis** and **alternate hypothesis**
    - Explain the **reasoning** behind the alternate hypothesis
    - Discuss your **analysis criteria**
        i. **time to complete the task**: use a stop-clock to measure the time (in seconds) it took participants to successfully finish the task.
        ii. **number of incorrect clicks**: number of times a user tapped on or clicked did an incorrect interaction while doing the task

- Here's an **example** of a set of hypotheses for the number of errors:
    - Null hypothesis: The number of incorrect clicks participants got on Version A will be equal to the incorrect clicks participants got on Version B
    - Alternate Hypothesis: The number of incorrect clicks participants for on Version A is going to be greater than that of Version B, *because I changed images on my Version B to be colorful.*

IV. Deliverable 7, DUE 04/14, 11:59 PM via Blackboard (10 points):

(a) **All students**: submit a pdf (named: group[number]-think-aloud. pdf) containing a description of user testing: what task did the participants do? How did you determine the success or failure of the task? How many users evaluated your prototype? What was the users' feedback? See the User Testing section for more details.

(b) **Graduate students only**: submit a pdf file (named: group[number]-ABTesting.pdf) describing Version A and Version B of the interface. Discuss how both versions were different in terms of interaction design principles. What was your null and alternative hypothesis, what was the success measure, and how was it measured during the testing? How many participants did the A/B testing? What were the results in terms of evaluation metrics? Include links for both versions of the prototype in the pdf. See the User Testing section for more details. Also discussed on page 8.

6. UI Implementation (final showcase)

By 04/28, you should have a working UI implementation of your project. Your implementation should have a fully functional frontend functionality, with live user interactions. **Your implementation should not have a server-side component**. Project #2 implementation primarily focuses on front-end implementation. You can use hard-coded responses, browser-level storage (e.g., cookies or HTML5 local storage), or data storage APIs (e.g., Google's Firebase). Your application should not have its own backend (Django, Rails, or MySQL).

Final Showcase Assignment Deliverable

- Submit a zip folder ([group-number-UI.zip) of the working project
- The zip folder should include a **README** file containing instructions on how to start interacting with the frontend or any other notes that the grader should know about.
- The zip folder should include a **demo script**.
- The group should give a demo of their fully functional UI implementation on the project showcase day.

7. Video Sketch (final showcase)

The video sketch will be a permanent record of your design concept and your interactive prototype. It should follow the demo script you already prepared and illustrate one or more of your scenarios. Videos should **be 3 to 5 minutes** in length, recorded at good quality, but maybe no more than **100 Mb in size**. Accepted file types for the video will be .avi, .mp4, or .mpg. No .wmv or .mov files will be accepted. You may use spoken narration or text captions in your video; music can supplement your video but is not required. Some guidance, tips for creating video sketches,

and examples can be found on Blackboard under Group Project#2 Weekly Content. Videos must be submitted via Blackboard by the **final showcase assignment due** date. Ensure you include a title screen including course number/title and group member names. Use only publicly licensed media (e.g., CreativeCommons) in your video sketches and provide due credit.

8. Poster (final showcase)

Execution details for both digital and physical posters are the same: Posters can be hand-sketched or digitally produced but must be physically brought to class on the due date. Digital versions must also be submitted (either a photo or scan if hand-sketched are acceptable) via Blackboard by the assignment due date. Accepted file types for the posters will be .pdf, .png, or .jpg. The posters must be of size 2' x 3' (24" x 36").

9. Final Design Documentation Paper (final showcase)

The final papers must be printed out and brought to class on the due date, and submitted via Blackboard by the assignment due date. Papers should be printed single-sided and stapled. Include a cover sheet and table of contents for your paper. Accepted file types for the paper will be .pdf only. **Papers should be 10 to 15 pages in length (not counting cover sheet and table of contents), 1.5 spacing in Times New Roman font size 11 for the main body text (headings can be larger).** Group numbers and names of all team members should be listed on the cover sheet.

Project #2 Deliverables (All deliverables account for 40% of the final grade)

The deliverables for this project are separated into the weekly deliverables, the mid-point critique, and the final showcase. An overview of each deliverable is given below. For each weekly deliverable, you can look at the final showcase rubric as a reference to get an idea of what to discuss in the deliverable. All the feedback received on weekly deliverables should be addressed when submitting the final showcase deliverables.

1. Deliverable 1, DUE March 3rd, 11:59 PM (20 points, 3% of the final project grade): Create a **6-minute proposal idea video** presentation. Use this slide template. A text file containing a link to the proposal idea video should be submitted via Blackboard. **Reminder: don't look at your chosen startup's interface during the design process – we want you to create an original design not based on anything the company has done so far.** You should be able to defend all design decisions your team took based on the user research data and group brainstorming notes. Submit a PDF file (named: `group[number]-demo.pdf`) containing a link to the proposal idea video via Blackboard. See the Focus Setting section for details.
   - Rubric for proposal idea video
     - (1 point) Project name, group number, and group members' names
     - (3 points) The problem description is clearly defined and discussed
     - (0.5 points) Citation for where the project problem idea was derived from
     - (3 points) Groups' approach to solving the problem and what the group hope to accomplish

- o (3 points) Discussion of who will be your target users and answer pre-design questions listed on the template slide; include a properly credited example image of main target users.
- o (2 points) Key characteristics of the target users
- o (2 points) Plan to recruit target users
- o (2 points) Focus statement for the planned user research
- o (3 points) Key design questions that you will target
- o (0.5 point) The anticipated timeline for recruiting and user data collection.
- o (-2 points) Video longer than 6 minutes

2. Deliverable 2, DUE March 8th, 11:59 PM via Blackboard (10 points, 3% of the final project grade): submit a pdf (named: `group[number]-guide. pdf`) containing your discussion guide via blackboard. See Create Discussion Guide section for more details.

3. Deliverable 3, DUE March 15th, 11:59 PM via Blackboard (10 points, 3% of the final project grade): submit a combined PDF file containing (a) transcripts or notes of your focus group (s) and/or interview (s) with the required number of users, and (b) the participant signature sheet. Submitted transcripts should contain the name of the group member(s) who transcribed them. Submission should be made Blackboard (`name the deliverable as group[number]-transcripts.pdf`). See Conducting Focus Groups or Interviews for more details.

4. Deliverable 4, DUE March 18th, 11:59 PM via Blackboard (10 points, 3% of the final project grade): submit a PDF file containing (a) an image of the final affinity diagram and results of walking the data in terms of (b) 4-5 key user needs that your group will focus on, (c) breakdowns, and (d) design opportunities. All the themes and sub-themes should be clearly visible in the submitted affinity diagram image. Submission should be made Blackboard (name the deliverable as `group[number]-affinity.pdf`). The image of the affinity diagram should not be blurry; all the themes and sub-themes should be legible. See Walking the Data for more details.

5. Deliverable 5, DUE March 29th, 11:59 via Blackboard (10 points, 3% of the final project grade): submit a pdf (named: **group[number]-artifacts. pdf**) containing the required number of personas, key tasks, scenarios, and storyboards. See Generate Design Solutions for more details.

6. IN-CLASS MID-POINT CRITIQUE on April 7th (40 points, 7% of the final project grade): create and present a 5-slide presentation for the in-class critique session. See Design Solutions for a detailed description of the slide content and what will happen during the in-class critique. Deliverable 6 is a part of the mid-point critique and is due ~~before~~ after class (11:59 PM on April 7th).
   - Rubric for the mid-point in-class critique day
     - o (2 points) Did your slides include information about the startup and the design problem?
     - o (10 points) Did your slides include an appropriate task-flow diagram?
     - o (10 points) Did the wireframes include key screens based on your task flow diagram?

- o (5 points) Points based on the feedback received from peers
- o (3 points) Is your presentation delivery professional and clear?
- o (5 pts) Did you generate a task flow diagram that represents a realistic conceptual model of the tasks that can be performed through your design?
- o (10 pts) Did you generate a thorough set of wireframes documenting all transitions and interactions for each screen? Does your wireframe include all features of your design at the appropriate level of detail?
- o (5 pts) Did you iteratively engage in the design process in order to achieve a mid-point design idea that merges, refines, and improves on earlier iterations?
- o (10 points) Did your interactive prototype include all the screens? Are all the buttons, controls, and widgets interactive? Did your interactive prototype support navigation and interaction in a way that the user does not feel stuck?

VIII. Deliverable 6, DUE April 7th, 11:59 PM via Blackboard (10 points): Submit 2 pdfs: A zipped file containing (a) a PDF file of the 5-slide presentation that will be used during the in-class mid-point critique - make sure links to wireframe and interactive prototype are working and (b) a PDF file discussing **task-flow diagram**, *annotated* **wireframes**, **images of key-frames from the interactive prototype**, and **2-5 feedback points** received from your peers during in-class critique on your design artifacts (e.g., interactive prototypes). Submission should be made Blackboard (name the deliverable as `group[number]-prototypes.pdf`)

VII. Deliverable 7, DUE April 14th, 11:59 PM via Blackboard (10 points for undergrads and 40 points for graduate students, 3% of the final project grade):

(1) **All students**: submit a pdf (`named: group[number]-think-aloud.pdf`) containing a description of user testing: what task did the participants do? How did you determine the success or failure of the task? How many users evaluated your prototype? What was the users' feedback? See the User Testing section for more details.

(2) **Graduate students only**: submit a pdf file (`named: group[number]-ABTesting.pdf`) describing Version A and Version B of the interface. Discuss how both versions were different in terms of interaction design principles. What was your null and alternative hypothesis, what was the success measure, and how was it measured during the testing? How many participants did the A/B testing? What were the results in terms of evaluation metrics? Include links for both versions of the prototype in the pdf. See the User Testing section for more details.

VIII. Final Showcase Deliverables DUE April 28th at 10:55 AM (75% of the final project grade). See next page for a detailed Rubric for final showcase deliverables:

(1) Digital and Physical Poster (40 points, 5 % of the final project grade)

(a) Documentation of the context of use (focus), the user needs you uncovered in your focus group/interview (s), and your main user persona(s)—remind us!

(b) Documentation of the top 1-3 key features of your design, illustrated through storyboards.

        (c) Documentation of the revised wireframes for your design (with changes annotated), with the use cases shown in the storyboards highlighted or marked on the wireframes.

(2) Interactive Prototype (30 points, 3% of the final project grade)
        (a) A complete interactive prototype that contains every aspect of your design correctly linked and thoroughly tested (note: this is not a software prototype!).
        (b) A demo script walking through the top 3 key features of your design (bring a printout for the final showcase day)
        (c) Have the interactive prototype running on the laptop during the final showcase day.

(3) Design Documentation (100 points, 40% of the final project grade)
        (a) Documentation of your focus setting.
        (b) Documentation of your user research (focus group/interview (s)) and data analysis.
        (c) Documentation of key user needs and method to come up with user needs
        (d) Documentation of your user personas.
        (e) Documentation of key tasks selection process
        (f) Documentation of your design concept brainstorming process.
        (g) Documentation of your scenarios and storyboards.
        (h) Documentation of your task flow(s) and wireframes.
        (i) Documentation of your design iteration, and revised task flow(s) and wireframes.
        (j) Documentation of your interactive prototype.
        (k) Documentation of usability testing
        (l) Graduate groups: documentation of you're A/B user test.
        (m) Documentation of Implementation process

(4) UI implementation (50 points, 12% of the final project grade)
        (a) A fully functional frontend functionality, with live user interactions. Your implementation should not have a server-side component. Implementation should primarily focus on front-end implementation.
        (b) Have the UI implementation running on the laptop during the final showcase day.

(5) Video Sketch (30 points, 5% of the final project grade)
        (a) A video sketch of your interactive prototype showing the context of use and following your demo script.
        (b) Have the video sketch running on the laptop during the final showcase day.

(6) Peer-evaluations (10 points, 10% of the final project grade)

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Detailed Rubric for Final Showcase Deliverables, DUE April 28th, 10:55 AM (75% of the final project grade).

1. *Digital and Physical Poster), including Communication and Execution (40 points, 5% of the final project grade*

   I. *Communication (30 pts)*

      (a) (5 points) Did you include an updated and effective summary/overview of how your design fits into the context of the overall ecosystem of the problem description?

      (b) (5 points) Did you include an updated and effective summary/overview of the most critical user needs you uncovered in your focus group/interview (s)?

      (c) (5 points) Did you include an updated and effective summary/overview of your main user persona(s)?

      (d) (10 points) Did you include updated and effective documentation of the top 1-3 key features of your design, illustrated through storyboards that show these features being used in context from the user's point of view and the user's goals for the interaction?

      (e) (5 points) Did you include effective documentation of the revised wireframes for your design (with changes from the mid-point design annotated), at the appropriate level of fidelity? Did you highlight or mark the use cases shown in the storyboards on the wireframes?

   II. *Execution (10 pts)*

      (a) (5 points) Did you effectively use elements covered in class this semester about visual communication and design documentation to create a poster that clearly and concisely conveys the final state of your design? See poster creation tips.

      (b) (5 points) Did you spend the necessary attention to detail to create a professional, clean, and high-quality poster? Does your poster satisfy all required elements of execution (size, submission instructions, etc.)? Refer to the Poster section for more details.

2. *Interactive Prototype, including Communication and Execution (30 points, 3% of the final project grade)*

   (1) (10 points) Did you create a complete interactive prototype in one of the approved tools which include every aspect of your design correctly linked and thoroughly tested?

   (2) (5 points) Is your interactive prototype pixel-perfect, as required?

   (3) (10 points) Did you prepare a complete and clear demo script that walks through the top 3 key features of your design? This demo script should be able to be understood and followed step-by-step by someone not currently on your team.

   (4) (5 points) Did you prepare a demo script covering key tasks?

3. *Video Sketch, including Communication and Execution (30 pts, 5% of the final project grade)*

   (1) (15 points) Did you create a video sketch that effectively communicates the key features of your interactive prototype and design (e.g., by following the live demo script)?

   (2) (10 points) Did you spend the necessary attention to detail to create a professional, clean, and high-quality video? Does your video sketch satisfy all required elements of execution (file size, video length, etc.)?

4. *UI implementation (50 points, 12 % of the final project grade)*
   (1) (50 points): Front end is fully functional with no glitches. Users can successfully navigate between different screens of the interface, without feeling trapped or following a pre-determined order. UI implementation of the front end is the same as the high-fidelity prototype. Glitches include the following:
   - *(i)* user can interact with all the controls, widgets, and buttons on the screens
   - *(ii)* user is able to go between screens, a user is able to back to their previous action or the screen
   - *(iii)* difficult to read text, labels, or understand feedback provided in the application
   (2) (20 points): Frontend is generally functional with less than three glitches (e.g., more than 3 buttons or controls not working). UI implementation of the front end is not the same as the high-fidelity prototype.
   (3) (5 points): The front end is not functional or has more than three glitches. The application is not intuitive to use.

5. *Design Documentation Paper, including User Research, Design Process, and Design Solution (100 or 125 points, 40% of Final Showcase Grade). Graduate students total 125 points.*
   I. *Executive Summary (1 point)*
      i. (1 point) Did you discuss an executive summary of your project? Refer to the Design Documentation lecture to see the requirements for an executive summary.
   II. *User Research (25 points)*
      i. (5 points) Did you define the problem clearly with a citation for the startup the problem was derived from?
      ii. (5 points) Did you effectively set a realistic and clearly defined research focus?
      iii. (5 points) Did you conduct a focus group or interview with the required number of target users?
      iv. (5 points) Did you draw realistic and thorough conclusions from the user research as to what users of different types want or need from the new design?
      v. (1 point) Did you include an interview guide in the Appendix?
      vi. (1 point) Did you include transcripts of your user research in the Appendix?
      vii. (2 points) Did you submit the participant signature sheet?

   III. *Design Process (25 points)*
      i. (5 points) Did you discuss the process for your affinity diagram creation and include a legible image? Did you discuss different themes from the affinity diagram?
      ii. (5 points) Did you generate and refine your brainstormed ideas effectively through the use of good brainstorming techniques and affinity diagramming to group concepts by theme, opportunity, and breakdown? Did you identify the following while walking the data?
         a. 4-5 key user needs
         b. User goals or what do users care about

     c.   Breakdowns: what do users have problems with

     d.   Holes: additional information needed or questions to be answered

     e.   Opportunities: design ideas based on the affinity diagram

     f.   Any other positive or negative themes

     iii.   (5 points) Did you list users' key attributes and characteristics? Did you develop and detail the required number of persona(s) that reflect the range of target user types for this new design?

     iv.   (5 points) Did you identify 4-to 5 key user tasks to focus on? Did you generate the required number of scenarios highlighting key user paths through your design that span the range of features?

     v.   (5 points) Did you pair each text-based scenario with a sketched storyboard that effectively showcases the key features of the design?

IV. *Design Solution: Final (20 pts)*

     i.   (5 points) Did you revise your design adequately and efficiently to meet the user feedback (including documenting the feedback you received)?

     ii.   (5 points) Did you revise your set of wireframes from the mid-point versions, still documenting all transitions and interactions for each screen? Do your wireframes include all features of your design at the appropriate level of detail?

     iii.   (5 points) Are your changes from the mid-point wireframes annotated?

     iv.   (5 points) Did you successfully create and document an interactive prototype to represent and communicate your final design concept (with references to the live interactive prototype demo)?

V. *User Testing: Final (10 pts for undergrads and 25 points for graduate students)*

     i.   (5 points) Did you conduct a think-aloud test of your interactive prototype as required? Do you summarize the results and include concrete suggestions for improvements? (5 points free for undergraduate groups.)

     ii.   (1 point) Did you describe the process followed during user testing?

     iii.   (1 point) Did you describe the task used during user testing? Did the task used during user testing have a clear success criterion?

     iv.   (2 points) Did you conduct a think-aloud test of your interactive prototype as required? Do you summarize the results and include concrete suggestions for improvements?

     v.   (15 points) A/B testing: (**graduate students only**)

         i.   (3 points) Did you include working links of Version A and Version B of your prototype?

         ii.   (1 point) Did you include screenshots of Version A and Version B of your prototype in the document?

         iii.   (3 points) Did you describe how changes in Version A and B in terms of interaction design principles?

         iv.   (1 point) Did you discuss the A/B user testing process?

         v.   (3 points) Did you include null and alternate hypotheses?

         vi.   (1 point) Did you include analysis criteria?

       vii.   (3 points) Did you discuss your observations and feedback from user testing? Did you discuss results in terms of your analysis criteria?

VI.   *UI implementation (5 points)*

     i.   (5 points) Did you describe the internals of your implementation, while keeping the discussion on a high level? Discuss important design decisions you made in the implementation. Also, discuss how implementation problems may have affected the usability of your interface.

VII.   *Execution (4 pts)*

     ii.   (10 points) Did you spend the necessary attention to detail to create a professional, clean, and high-quality paper? Does your paper satisfy all required elements of execution (format, length, font size, etc.)?

Peer Evaluation (10 pts, 10% of Final Showcase Assignment grade)

Acknowledgments