CSCI 130(0) – Redesign

Release Date: October 4, 2018
Due Date: October 18, 2018 at 12:00PM (noon)

Overview

A design of an interface can be judged by many factors. The visual aesthetics can affect a user's impression, but the quality of the design goes beyond its appearance. For example, the quality of an interface also depends on its **usability** (the ability for users to learn and use the interface to achieve their goals) and **responsiveness** (the ability for the interface to adapt to the medium in which it is presented).

In this assignment, you will choose an interface and redesign it to improve its quality.

Notes:

- Please read through the entire handout before selecting an interface.
- The 1300 version of this assignment includes web design in Part 4: Responsive Redesign. If you do not have prior experience using HTML and CSS, we recommend you set aside some extra time to read and experiment with the included guides.
- Each part of your submission should be rendered **digitally -- photos of hand-drawn redesigns should not be submitted**.

Getting Started

Choose an interface that you think could be **convincingly** improved through a redesign in terms of usability, responsiveness, and visual design. The interface should meet the following requirements:

- The interface has to be a **public website.** For example, it shouldn't be a website your friend designed for a college club or an event they were holding, but it can be the website of a hotel where you can see their amenities, contact them, see pictures, make reservations, find events happening, find menus for the restaurants, etc.)
- The interface has to comprise of **at least five screens** with **an assortment of elements** (text, images, tables, menus, etc.) **on each screen** , so that you have enough material to work with. For example, the homepage of a university's website may be a good choice, but not Banner (Brown's Self Service site) which is mostly a series of menus on a page.
- The interface should not have already been highly refined by a UX team (such as an interface that would be considered one of the 100 most popular websites, apps, or products) because it may be difficult for you to make compelling improvements.

Remember that this is a redesign, not a tweak! Feel free to check your choice of interface with a TA.
After you choose an interface to redesign, **take a screenshot of it and describe it in a few sentences so we know what it is.**

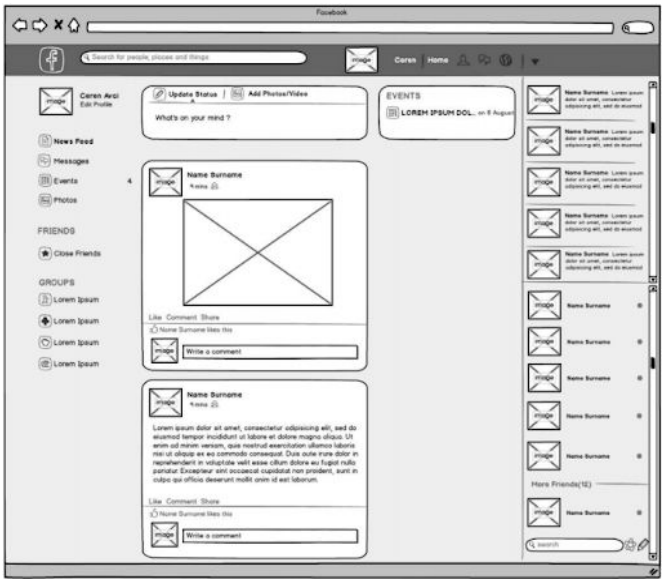
Part 1: Usability Redesign

You will first redesign the interface to improve its usability.

Finding Problems

Begin by analyzing the usability of the original interface using the criteria from usability.gov: intuitive design, ease of learning, efficiency of use, memorability, error frequency and severity, and subjective satisfaction. Use user-free methods explained in class such as heuristic evaluation or contextual design to find initial problems. Think of ways to improve the usability based on the above criteria. Also consider the usability principles being covered in class to make interfaces more intuitive.

Wireframing



A wireframe represents the skeletal framework for a website. Wireframing allows the designer to plan the layout and interaction of an interface without being distracted by factors such as colors and typeface. **Redesign five pages of the interface, creating a wireframe for each one.** Make enough wireframes so a user could complete some key tasks on them. Your wireframes should display the key page elements (header, navigation, footer, etc.) and interaction elements (buttons, text boxes, etc.), while leaving placeholders for large amounts of text and images. Use lorem ipsum for your placeholder text and denote images with empty boxes. Pictured on the right is a wireframe of Facebook.

Then, connect your wireframes with arrows to show the navigation flow between the 5 interfaces only. There should be ways to get in and out of each page. Think about whether it's clear from the user's point of view, where they can go from each page.

The tool you use for your redesigns is up to you. For example, you can use Balsamiq to create the wireframes, or use a higher fidelity editor like Sketch, proto.io, etc. if you are more comfortable

with those. However, you will not be graded on the color, font and the visual design, only the wireframe. (Remember that a wireframe is meant to be lo-fi/low fidelity, which is only used to plan the layout and interaction of your pages and interface overall, not to work on the visual design of your interface.) Refer to the Software Licenses document on course website for downloading/using the software, and lab materials are available on the course website.

Write Up

Address each of the six usability criteria listed above in both the old interface and your new design. Write a couple of sentences on what works and what doesn't in the original design, and what changes (if any) you have made in your new design to address these issues. Consider creating a table like the one pictured below.

	Original Interface	**Redesigned Interface**
Intuitive Design		
Ease of Learning		
Efficiency of Use		
Memorability		
Error Frequency and Severity		
Subjective Satisfaction		

Part 2: Wizard of Oz (CS 130 Only)

You will conduct a Wizard of Oz evaluation (as shown in the Evaluation lecture) with your wireframes from Part 1 (Usability Redesign). This will allow you to get a sense of how someone will use the interface without actually developing the interface.

Print your wireframes so they each take up the entire page, and then separately, **make cutouts of interface elements** that change when interacted with (e.g., menus, sliders, interactive components, tabs, panels that change) so you can simulate interaction. Make enough such that a user can cleanly complete a task of your choice.

Then **find two people** who will be able to act as the user in separate sessions. For each user, **describe to them the task, and play the Wizard** while they are interacting with the interface to complete their task. Encourage them to think aloud. During the interactions, **take some photos** (your user's face does not need to be included in the photos).

After making your observations, **write a paragraph for each user**. In each paragraph, describe the tasks, what the user did, what reactions you observed, what you learned from the evaluation, and ways in which you could improve your design. **Include at least one photo per user** when handing in.

Then, **Redesign all 5 of your wireframes** based on your learnings from the Wizard of Oz. This redesign should include redesigning each of the pages and making changes to the connections showing the navigation flow, if there are any. Keep in mind any relevant comments that you received.

Part 3: Visual Redesign

Next, you will redesign an interface for its visual appeal, using principles about color, hierarchy, typography, layout, and simplicity. **Choose a single key screen from Part 1 (for CS 1300) or Part 2 (for CS 130: your redesigned screens) and create a visually appealing high-fidelity interface.** (If you decided to use a high fidelity editor in Part 1 or 2, you can continue to use the wireframe that you created in Part 1 or 2 for your visual redesign. However, the interface created for this part should differentiate from its original wireframe by adding more details and reflecting visual design principles.) You may still use placeholder text (Lorem Ipsum) and stock images for any text and visuals on your new webpage. Remember, your visual redesign should look like an actual screenshot, and the main elements of your site should be structured based on your usability redesign from Part 1 or 2.

Provide a brief explanation of your visual design choices. Have you improved readability? Employed a grid or improved alignment? Changed the color palette? Considered navigation flow? Support your explanation with concepts covered in the Layout, Visual, and Text lectures.

Tools and References
Use a high-fidelity UI editor for your web interface, not a wireframing tool like Balsamiq.
Here are some examples of redesigns that you can use for inspiration: Airline boarding pass, Fixing Windows 8, Soundcloud redesign.

Part 4: Responsive Redesign

With so many different devices--and even different windows and browser settings on a single desktop--available to use, it's increasingly important that our interfaces consider screens of all sizes, of which you will represent in your responsive redesign.

Annotated Mockup

First, annotate your mockup from Part 3 to specify how the interface elements change on different screen sizes. Besides the standard laptop screen, your redesign will be graded based on 3 screen sizes: a small phone in portrait orientation, a tablet in portrait orientation, and a 4K widescreen desktop monitor. For example, do elements shrink or expand, wrap to the next line or disappear in some cases, or move relative to the screen edges? You may annotate in any specification language like CSS Flexbox, CSS Grid, Springs and Struts, or even a mix. See the relevant slides in the Layout lecture for an idea how to annotate some of the elements in that interface (you should be annotating them all for this assignment). For each specific screen size, one or two sentences for each feature on the mockup that changes would be sufficient. **However, make sure your annotations are informative enough for someone else to successfully sketch the interface based on them -- there should be no ambiguity**.

Second, write a summary for your redesign to describe the layout changes of your design between the different sizes, and how each size presents the content in a usable way. Mention how each of the elements change or don't change and **justify your design choices**.

After finishing the tasks above, we suggest that you test on your own whether your annotations are clear by trying to sketch the interface in the different sizes mentioned above (a small phone in portrait orientation, a tablet in portrait orientation, and a 4K widescreen desktop monitor). At each size, check how clearly specified the interface would change, and whether the interface change is appropriate for that display size in terms of usability and visual design.

Responsive Website (CS 1300 Only)

Now is your chance to create a responsive web page based on the annotated mockup you just made. Your goal is to to create a web page with components that change according to the annotated mockup depending on screen size.

It should match in structure to the annotate mockup that you made before, but **does not need to be pixel perfect** (in other words, the elements should be laid out roughly in the same place, but do not need to be positioned exactly like the visual redesign).

Create the elements in HTML, and specify the style and layout with CSS. Write the HTML and CSS by hand, such as the example from class, with similar amounts of detail. Do not copy and paste

code from elsewhere. We suggest **using CSS Grid and/or Flexbox, because those are the only tools the TAs will provide support for.** However, you can use a different tool if you feel strongly about that. Note that either one is usually enough to make a responsive interface. Grid is better for interfaces with elements laid out all over, while Flexbox is better for single-column interfaces. The Layout lecture from class will be helpful for understanding the capabilities of each. There are also online guides (below) that you can refer to as you complete this portion.

Here are resources for making web pages with HTML and CSS:

- Learn the basics of HTML and CSS
- Jeff's example from class

Once you're comfortable with HTML and CSS, learn more about Grid and/or Flexbox.

- Learn CSS Grid, or play Grid Garden
- An Introduction to Flexbox, or play Flexbox Froggy

It may also help to view your site with Chrome's built in device-mode tool. This will allow you to easily see how your site looks in standard mobile and desktop sizes. You can find the tool by right-clicking a page and clicking "inspect element."

Handing in your assignment

You should follow the steps listed below to hand in your assignment:

1. Put your pdf file (all students) and web code (for 1300 students) in one zipped folder.
2. Upload your zipped folder on Google Drive, and get the shareable link for the file. **Make sure your sharing settings are correct - if we cannot access the shared folder on Google Drive, then we cannot grade you and you will receive a 0 for the assignment.** You can test out whether someone can access the folder by trying to access the folder in Incognito mode.
3. Put the shareable link in a pdf file and hand it in Gradescope.

Make sure everything is included in your zipped folder. The rubric below may serve as a good reference.

Grading and requirements (22 points)

Usability Redesign (7 points)

- 3 points — Wireframes of five redesigned pages are clear and demonstrate usability principles
- 1 point — Navigation between wireframes is appropriate
- 3 points — Explanation of usability improvements from original to redesigned interface is clear and reasonable

Wizard of Oz (3 points, CS 130 only)

- 1 point — Insightful descriptions and evaluations of the Wizard of Oz test plus suggestions on how the interface could be improved
- 1 point — Updated Wireframes based on feedback
- 1 point — Appropriate photos for each user engaged in the Wizard of Oz

Visual Redesign (5 points)

- 3 points — The redesign (mockup) reflects visual design principles
- 1 point — Visual design is believable as a finished product
- 1 point — Justification of design choices is convincing

Responsive Redesign (5 or 8 points)

- 2 points — An annotated mockup that clearly reflects the changes that happen on different screen sizes
- 2 points — The different screen sizes retain good usability and visual design
- 1 point — The written justification of the responsive choices is appropriate
- 3 points — The responsive web page of the mockup works as expected (CS 1300 only)

Style (2 points)

- 1 point — Is this the quality of a portfolio piece? (redesigns are a classic portfolio item!)
- 1 point — Review the style guide for details