Lab 2: Carlpedia Project

Objectives

- Draw conclusions from the user tests by applying statistical and visual analyses to the test data
- Apply these conclusions to propose a redesign of the Carlpedia site, in terms of usability and functionality

Introduction and background

In last week's lab, we met Carlpedia, Carleton's knowledge base and IT wiki. By now you should be familiar with Carlpedia: its look-and-feel, what you can do with it, its limitations.

This past week, you conducted tests and collected data to test out a hypothesis about the usability of Carlpedia as it exists today. By now, you should have uploaded your test results to Google Docs, completed the first part of your experimental writeup, and written a Python program to statistically analyze the results.

At this point, we have data to either confirm or deny our initial hypothesis. The next step in the process is to take this information, synthesize it, and use it to draw conclusions about what works well and less well about the Carlpedia design. We will then use these conclusions to develop a redesign of Carlpedia, one that will work more effectively for our target user population(s).

Your tasks

Visualization

At this point, your Python program reports means and standard deviations for various quantities of interest. In a few moments, you will share these results with your classmates. We are going to spend the next part of lab learning how to take this data and create a visual representation, so that we can more clearly make the point we wish to make with the data.

On the CS Moodle page, you will find a link to "Files for Lab 2". Click on this link and download the 2 files there (graphics.py and sampleGraph.py) into your home directory. Run sampleGraph.py and note what it does. Then open it up in TextWrangler and take a look at the code. See if you can match up lines in the code with what the code does. Not all of the code will make perfect sense right now, but you should be able to follow along with most of it at this point.

Locate the point in the code where I've used dummy data in the graph(s). Replace this data with your own data, and rerun the program. You should see a visualization of your experimental data.

Spend some time now modifying and playing around with the code. Can you think of a new and interesting way to show off your results? Mija and Amy will be walking around to answer questions at this point.

Design changes

Spend some time with your group discussing possible design changes for Carlpedia, related to your original research question. Here are some points you may want to consider:

- Do your results support or refute your initial hypothesis?
- How much do you trust that your results are an accurate representation of the user experience?
- What is the main conclusion you can draw from your test results?
- What do your results and conclusions imply about what needs to be changed about the Carlpedia design?
- In what ways does the website make use of what you know about human cognition?
- In what ways does the website force you to think (a la Krug)?
- In what ways could you make the system easier and/or more intuitive to use?
- Are there affordances that help users navigate the web site with ease? If so, what are they? If not, how could this be improved? (Hint: Consider the readings from Norman.)

Homework

Writing

For next Friday, you will add the Results and Discussion sections to your writeup. The Results section should include an analysis of the findings from your user tests, including relevant quantitative and qualitative data. (You will also want to include visual references, like charts and graphs, to illustrate your results.) The Discussion section should review the data in the framework of the background research presented in the introduction, including a discussion of any conclusions that can be drawn and any important implications for the research field or society at large. In addition, as part of the Discussion section, you will provide a description of the paper prototype of your system (see below). You should also justify your reasons for making the changes you propose, using evidence from your user tests. Refer to the handout from Lab 1 for more details on style, the evaluation rubric, etc.

Paper prototype

For next Friday, create a "paper prototype" representing your revised design of the Carlpedia site, based on the results of your user testing experiments. A paper prototype is more than just a paper sketch of the system. Rather, it is a series of sketches that demonstrates not just how the system appears visually, but also how it reacts to various user interactions. So, for example, the paper prototype should "change" when a user presses a button, to represent the action taken (and the visual change in the interface's appearance) by the system as a result of that action. Your paper prototype should represent an improved workflow for the wiki home page based on your experimental findings.

Your prototype should contain all of the elements required to be on the wiki's home page that are relevant to the chosen task(s). Your prototype can also include information and/or elements that do not currently appear on the page, as long as these are things that the users indicated were necessary in testing.

There is no coding for this assignment. Rather, your task is to think through the complete redesign and to come up with a paper model representation of that system. The site http://www.alistapart.com/articles/paperprototyping (also linked on Moodle) provides a good introduction to what a paper prototype is, how it's used, and how to construct one.

Your paper prototype should consist of the following:

- The "main" view of the page for your chosen task(s)
- "Clickable" buttons, menus, etc. depending on the task
- Alternate views that show the changes in the interface as a result of clicking each button, selecting each menu item, etc.

Each group will present the results of their user tests and their prototypes to the class during next week's lab period (September 30). The presentation should be thesis-driven: it should have a main point (the hypothesis), present relevant evidence (results from your user

tests), and logical conclusions. As part of the logical conclusions, you will do a walk-through of the paper prototype you developed. You will use the doc camera to demonstrate what happens when a typical user interacts with your revised interface. (You should call up a volunteer from the audience to "drive" your prototype for this part. This will give you a better sense of what a typical user will do with your interface and give you better insights into what works and doesn't work in your design.)

As you are presenting your results to the class, your classmates will be evaluating your design using the rubric below. You will see your peers' feedback at the conclusion. This feedback will be factored into your grade for this assignment.

For this part of the assignment, you will turn in your paper prototypes after your presentations next Friday. **There is nothing to hand in for this part on Moodle.** The prototype will be evaluated as part of your writing grade for this week, and your talk grade for next week.

Helpful hints

Your prototype should address the following criteria:

- **Technical elements:**
  - Appropriate selection of user interface (UI) elements
  - Prototype "responds" to user input in correct and appropriate ways
- **Style:**
  - Prototype elements are logically structured, with like/similar elements grouped together
  - Appropriate technical terms are used (not too jargony)
  - Language is clear and concise
  - Parts of the prototype are clearly and appropriately labeled
  - No grammar or spelling issues
- **User-centric design:**
  - The design clearly indicates to the user what input is expected, and in what format
  - The design clearly present instructions, data, etc. to the user
  - The interface is neat, uncluttered, and logically organized
  - Button presses, menu selections, etc. result in expected/correct behavior

Presentation Evaluation Rubric

Mockup usability

10 9 8	7 6 5 4	3 2 1 0
Mockup improves user interaction with the site for the chosen tasks, and enhances the user's overall experience with the site. The aesthetics are clean and professional-looking.	Mockup improves some user interactions with the site for chosen tasks, but not others. The aesthetics neither detract from nor enhance the user's overall experience with the site.	Mockup does not appropriately capture proper user interaction with the site for the chosen tasks. The aesthetics are distracting.

Evidence-based design

10 9 8	7 6 5 4	3 2 1 0
Design makes persuasive use of course readings and experimental data.	Design incorporates course readings and experimental data, but not to their full potential.	Design decisions do not utilize principles from course readings and/or heavily based on anecdotal evidence.

Visuals

10 9 8	7 6 5 4	3 2 1 0
Clear and concise visual aids complement presentation.	Visual aids neither add to nor distract from presentation.	Visual aids distract from the presentation.

Organization

10 9 8	7 6 5 4	3 2 1 0
Talk is well organized with a strong introduction, good transitions, and clear summary.	Presentation has occasional problems with unclear organization or sentence clarity; some abrupt transitions.	Presentation lacks clear organization.

Delivery

10 9 8	7 6 5 4	3 2 1 0
Good vocal delivery, with effective use of body language, engagement with the audience, and a professional manner.	Competent delivery that lacks polish.	Delivery distracts from the content of the presentation.