Homework 3  Total 50 Points  Due Weds, Mar 2nd

Overview:
Through your project work, second homework and class lectures, you have now observed users interacting with several user interfaces. In this assignment you will use your knowledge and skills to redesign the UI that you observed in HW2 Part 2. If you observed more than one UI (i.e., used two different systems to complete different tasks) just choose one.

This homework has two parts and you will need to do PART 1 (before Mon, Feb 22) to complete PART 2. Please read each one carefully.

PART 1 (10 points). Choose one task that you observed for HW2. To complete this part, do the following on your own:
   A. Review the observations you made for HW2 Part 2, corresponding to the task you choose (i.e., review your field notes, sketches, photos, and HW2 Part 2 report). Take notes on the successes and failures of the UI design of the system used to complete the task.
   B. Review the guidelines and heuristics we studied in class (http://b.gatech.edu/1Qkny9q) and the relevant readings (http://b.gatech.edu/1RL6PBM).

Choose at least five guidelines from the sources you reviewed and fill out the worksheet below.

Specifically:
   State the system and task you chose in the worksheet.
   Fill in a table by listing, in each row:
      i. One guideline or heuristic
      ii. A portion of the UI that you studied
      iii. Visual evidence (e.g., photo, sketch) of the portion of the UI
           (you can get this from HW2 Part 2)
      iv. Whether the guideline was upheld or violated
          Why you believe the guideline was upheld or violated
          (See the example provided below and use template at:
           http://wilcox.gatech.edu/3750/hw/HW3_TableTemplate.docx
           or: http://wilcox.gatech.edu/3750/hw/HW3_TableTemplate.rtf )

PART 1 Deliverables:
   • Bring your notes (from A) and filled-in table (from B) to class on Mon, Feb 22nd
   • Submit with the rest of Homework 3 by Weds, Mar 2nd
   • Also plan to append notes (from A) and filled-in table (from B) to your Homework 4 report (details coming soon)
**Example:**

**SYSTEM AND SITE:** Park Atlanta Parking Machine in front of Atlanta City Hall

**TASK:** Purchase 15 minutes of parking time for spot #803

<table>
<thead>
<tr>
<th>i. Guideline</th>
<th>ii. Portion of UI (physical and/or digital, be as specific as possible)</th>
<th>iii. Visual Evidence</th>
<th>iv. Guideline upheld or absent?</th>
<th>v. Why do you think it is upheld or absent?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visibility of system status (Nielsen and Molich, 1990)</td>
<td>Screen &gt; Purchase parking</td>
<td>Upheld</td>
<td>When the user selects an option, the display area corresponding to the selected option is highlighted in a different color than the other elements in the UI, indicating that the selection has been recognized by the system.</td>
<td></td>
</tr>
</tbody>
</table>

Access templates at:

[http://wilcox.gatech.edu/3750/hw/HW3_TableTemplate.docx](http://wilcox.gatech.edu/3750/hw/HW3_TableTemplate.docx)

[http://wilcox.gatech.edu/3750/hw/HW3_TableTemplate.rtf](http://wilcox.gatech.edu/3750/hw/HW3_TableTemplate.rtf)
PART 2. Redesign the UI facilitating the task that you chose in PART1. Create sketches (including paper prototypes) that represent a redesigned UI. For successful completion of this assignment, attend all HW3 design workshops that will span three classes next week (M, W, F: Feb 22\textsuperscript{nd}, 24\textsuperscript{th} and 26\textsuperscript{th}).

C. On Monday (Feb 22\textsuperscript{nd}) you will reflect on HW2 Part 2 to sketch a redesign of the UI for the task you chose in PART1. Bring to class the information you gathered from your observations of user interactions, as well as the table you created for PART1, and use it to make decisions about how the interface should be redesigned. You can begin sketching before class and bring your work to class, or you can begin sketching in class. Note, only the ideas expressed in the sketches will be evaluated, not the aesthetic quality of the sketches. You might make several sketches in the class—it is okay to explore several different possible designs. For example, you can try varying the form factor (e.g., mobile, tablet, desktop) or the size of buttons, their location on/off-screen, etc. Take advantage of what you now know about the previous system's limitations; this could include rearranging layout, simplifying instructions or restructuring the steps to complete the task. Take photos of your sketches. (10 points).

D. On Wednesday (Feb 24\textsuperscript{th}) you will finish refining your sketches. Then, using your refined sketches, create a paper prototype. Make sure that you label the user interface elements so one can understand quickly the intended functionalities of the UI. Make sure that you have all possible states “sketched out” (including but not limited to error states and confirmation messages) and a way for you to quickly switch between them. Also make sure that you have paper versions of input and selection techniques (e.g., pointers, keypads for input, etc.). Take photos of your paper prototype. Bring the paper prototype to class to TEST on Fri, Feb 24\textsuperscript{th} (10 points).

E. On Friday (Feb 26\textsuperscript{th}) you will TEST your redesign. You will bring your paper prototype to class to allow students to interact with it. Fellow students will conduct the task that you chose in PART1, interacting with your paper prototype to do so. (10 points)

In class, you will work in groups of four as follows:

i. The “owner” of the paper prototype will be the “computer”—simulating state changes and transitions. In this way, they will use the “Wizard of Oz” method taught in class.

ii. One person (the “user”) (from another pair) will simulate conducting the task chosen by the “owner” of the UI, by “using” the “owner’s” paper prototype. They will also use a think-aloud protocol to articulate their experience.

iii. After using the paper prototype, the user will comment on what they liked and disliked about it noting:

a) What they thought worked well and why
b) What they thought did not work well and why

iv. **The other students will take notes and photos.** They will document:
   - What they witnessed during use (e.g., the user wanted to go back but had trouble finding the “back” button, the user had questions about how to make a payment, etc.)
   - Photos of the user conducting the task with the paper prototype
   - Notes of what the user says during use
   - Any feedback given after use of the prototype

At the end of the usage session, **these notes and photos should be given to the “owner” of the prototype** (using the phone/camera of the owner to take photos will help). Note: you will take turns in class being the “user”, the “computer”, and the person creating the documentation.

v. On **Mon, Feb 29th** you will **attend a tutorial on Prototyping tools.** Observe the tutorial in class on prototyping tools. Read additional supporting materials and links provided by the teaching staff. Download or access online versions of one of the prototyping tools presented (Pop, Balsamiq, Keynote, or Powerpoint) to prepare for Homework 4.

**HW3 DELIVERABLE (Due Weds, Mar 2nd):**
Summarize what you learned from the in-class paper prototype usage sessions. For example, did you learn that you needed to create more error states, change some of the wording of the labels, or layout of the controls? Incorporate any further changes to your paper prototype, based on the user’s feedback in class and the documentation you have describing the user’s experience.

Submit a report containing the following information:

**PART 1 (10 points)**
A. Your notes from PART1 A.
B. A description of the system, site, task and your table from PART1 B.

**PART 2 (40 points)**
C. Images of the sketches created in PART2 C with captions (10 points).
D. Images of the sketch-based paper prototype you created in PART2 D with captions (10 points).
E. All documentation given to you by the students handling documentation in PART2 E (10 points).
F. A detailed description of any final changes made to your paper prototype based on in-class usage sessions (5 points)
G. A summary of what changed from the original UI that you studied in HW2 Part 2, to your final paper prototype design, and why (5 points).

Turn in your report on T-Square. Your filename should be in the form of:
**Lastname_Firstname_HW3.pdf**
Homework 4 (preview)  Total 50 Points  Due Weds, Mar 30th

Create an interactive, digital prototype representing the final version of the paper prototype that you created for Homework 3, using one of the prototyping tools covered in class on Mon, Feb 29th.

The tools you will learn are used mostly for web design and mobile application design, and we realize that most of you will be redesigning a kiosk. However, you can still prototype the redesigned screens and transitions.

Include text descriptions to note any physical elements (credit card readers) that might not be possible to include in your digital prototype.