CS-639 Building User Interfaces, Fall 2019, Professor Mutlu

Assignments — Week 02 | Design | Think-aloud + Ideation

In this assignment, you will practice the "empathy" method that will give you the most bang for the buck in terms of understanding user needs, preferences, and behavior. The think-aloud protocol involves (1) identifying users who represent your target group of users, (2) identifying/developing tasks that represent the functioning of the target system, (3) observing users as they perform the tasks, (4) analyzing your data to develop design insight, and (5) ideating design solutions that are informed by the insight you developed from your data. Imagine that you are given the task of redesigning UW–Madison's course search and enrollment system and follow the process below to perform a think-aloud and ideate for solutions.

Think-aloud

Step 1. Identify users. Who are the users of the UW–Madison course search and enrollment system? Describe below the characteristics of this user group, identify one person who might be willing to take part in your user research, and ask the person for their interest/availability. (If the person you identified is in this class, it is acceptable to swap roles.)

The person who are going to use the UW–Madison course search and enrollment system can be any student in the University, the advisors, and maybe Professors and other faculty members. These people are going to use the system to search for course information (such as time, credits, professor and etc.). They may have little experience using such systems. They need save their intended courses, enroll, drop or swap selected course(s), and they also need a scheduler to help them find the fit courses. A student in the university can be the best person to take the survey. My roommate is willing to take part in my user research. My roommate is a senior year student who majors Computer Sciences and Mathematics. At the moment, he would like to search for the courses that is cross-listed and available.

Step 2. Identify tasks. Study the course search and enrollment system and make a list of the main tasks that users of the system might be performing using the system. Rank your list in terms of importance (simultaneously considering impact, frequency, prevalence) and identify the top three tasks. Describe each task in 1–2 sentences in a way that your users can understand.

Main tasks (Rank in importance in decreasing order):

1. Querying: Get basic information of the course: Content, time, credits, professor, location and etc.
2. Basic operations: Basic operations includes adding, dropping, swapping courses.
3. Scheduling: A scheduler for students to schedule their courses.
4. Coordination: A waitlist system to coordinate the students enrolling classes.

Step 3. Perform think-aloud. Hold a think-aloud session with your representative user. First describe to your user how the think-aloud will work (refer to the reading and class notes), describe the tasks one at a time (answer any questions you might have), and ask them to perform each task while they say out loud what they are thinking.

> **Pro tip:** If you see your user performing the task but not speaking, probe them by asking what whey are thinking or reminding them that they should be describing.

As you observe your user performing the tasks, take notes (using the other sheet) of important actions, problems they encounter, confusions they might voice, and so on. For anything that stands out, after each task, ask your user why they did that or said that. Your observations and notes will form your data. Include your data in the data sheet provided at the end of this document.

During performing the task, it was easy for my roommate to find out the courses he needs. He asked to type "CS 475" and the system came up with "Computer Sciences 475: Introduction To Combinatorics". The information of the courses appeared, including Credits, Level, Breadth and Cross Listed. However, he asked if there exists a line of that tells the course meet what requirements. He said there should be a line contains that information. Next, he tried the functions such as add, drop, swap course and everything seems working. Finally, my roommate suggested that there may be a planner for the four years if necessary for the students in a lower standing.

Step 4. Create insight. In your data (e.g., notes), highlight where you saw significant breakdowns in functioning, need for better functioning, or user preferences that would require an alternative design. Make a list of your findings as design recommendations.

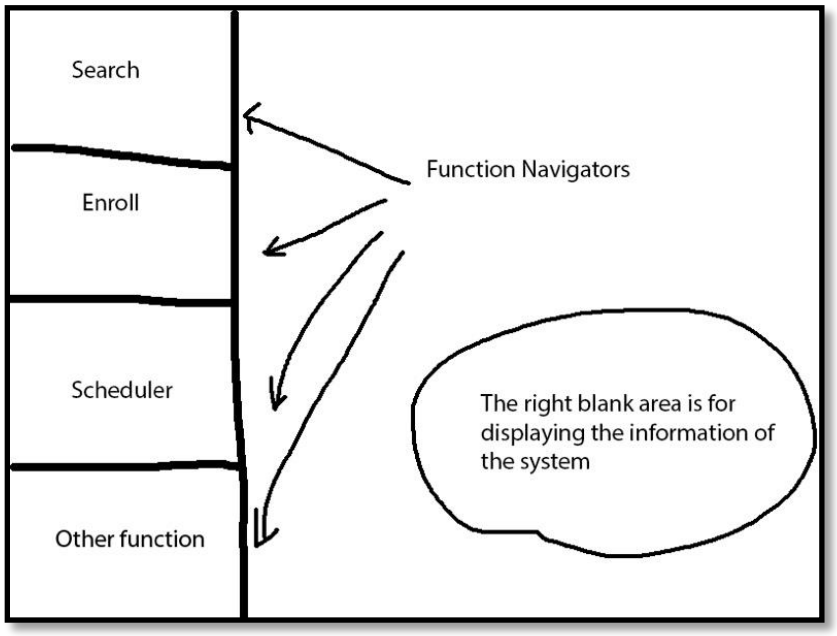
In the research period, the design meets the majority of needs of the user. However, there exists two tasks yet not been implemented or be considered of:

1) Details related to degree auditor (DARS),
   >This can be improved by adding more components demonstrating the degree requirement or a line with "Recommended for elective is CS major (major code)". This detailed, simple line can be helpful when choosing courses.
2) A four-year course planner.
   >This might be helpful, but somehow necessary. This task can be implemented by adding a new column at the navigation bar.

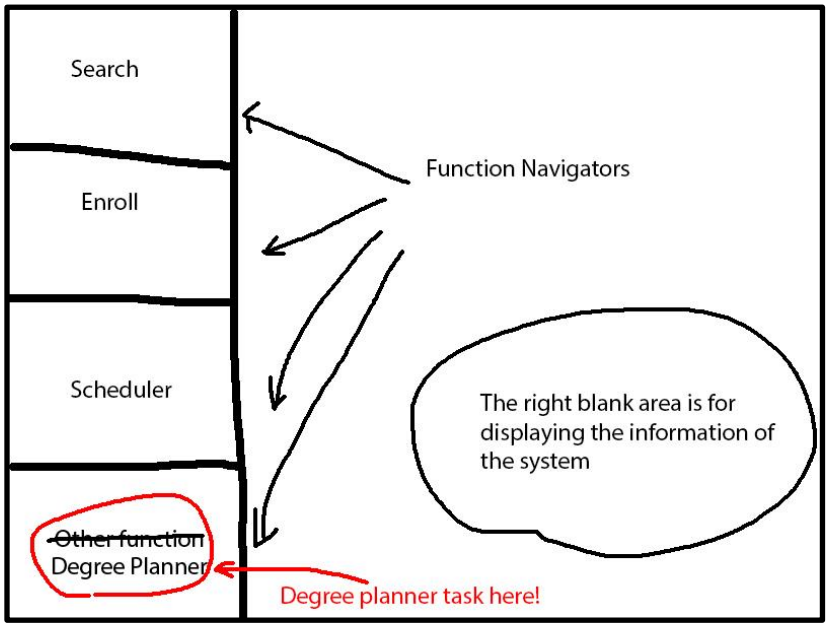
Ideation

Step 5. Ideate. In this step, hold a brief ideation session individually. First focus on generating ideas, and then critique these ideas in terms of how well they address the problems you identified in your think-aloud. Include sketches of <u>two</u> of your ideas below. Remember that these should be conceptual designs and not

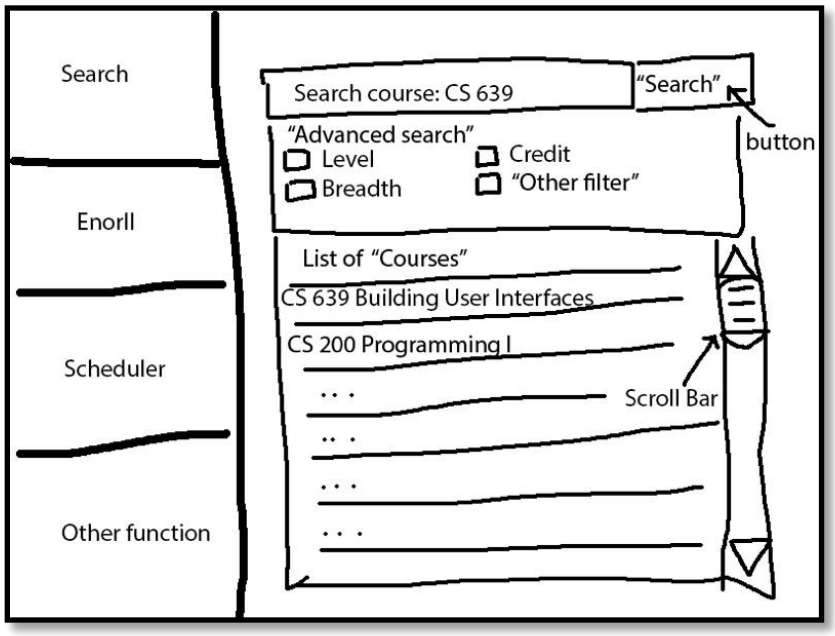
wireframes or illustrations, focusing on the core idea of a design and not on design elements. You can draw on paper, take a photo, and include the photo below; draw on a tablet computer and carry over the image here; or draw using the drawing tools of a word processor. Remember, these should be very simple drawings just to convey the idea.



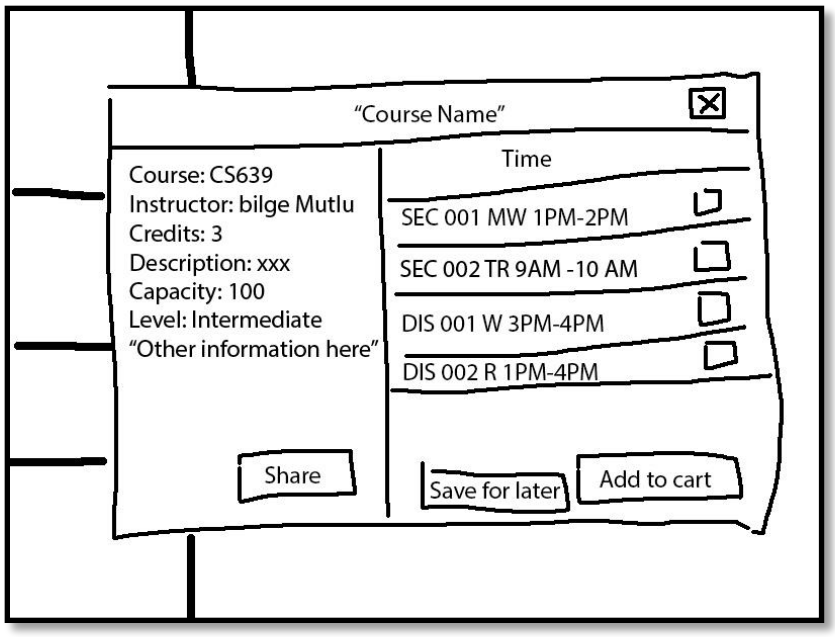
In my design, the idea is simple and useful, the navigator shows the basic essential tasks the user interface can perform.



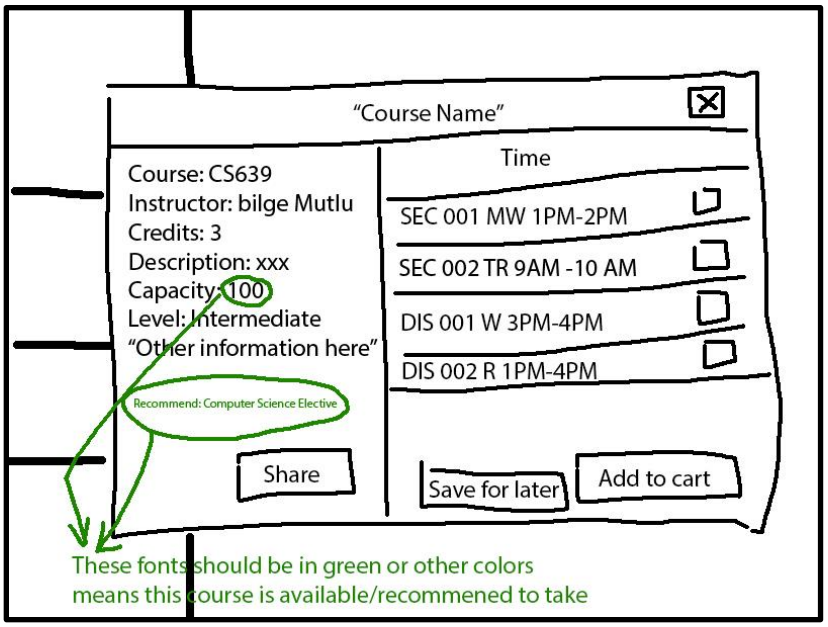
In the improved design, I add the task “Degree Planner” at the bottom.



This image demonstrates how search page should look like.



This is the original design of showing a course's information. Check box on the right allows user to make a choice.



This improved page demonstrates the minor change that relates to the user's need to the page.