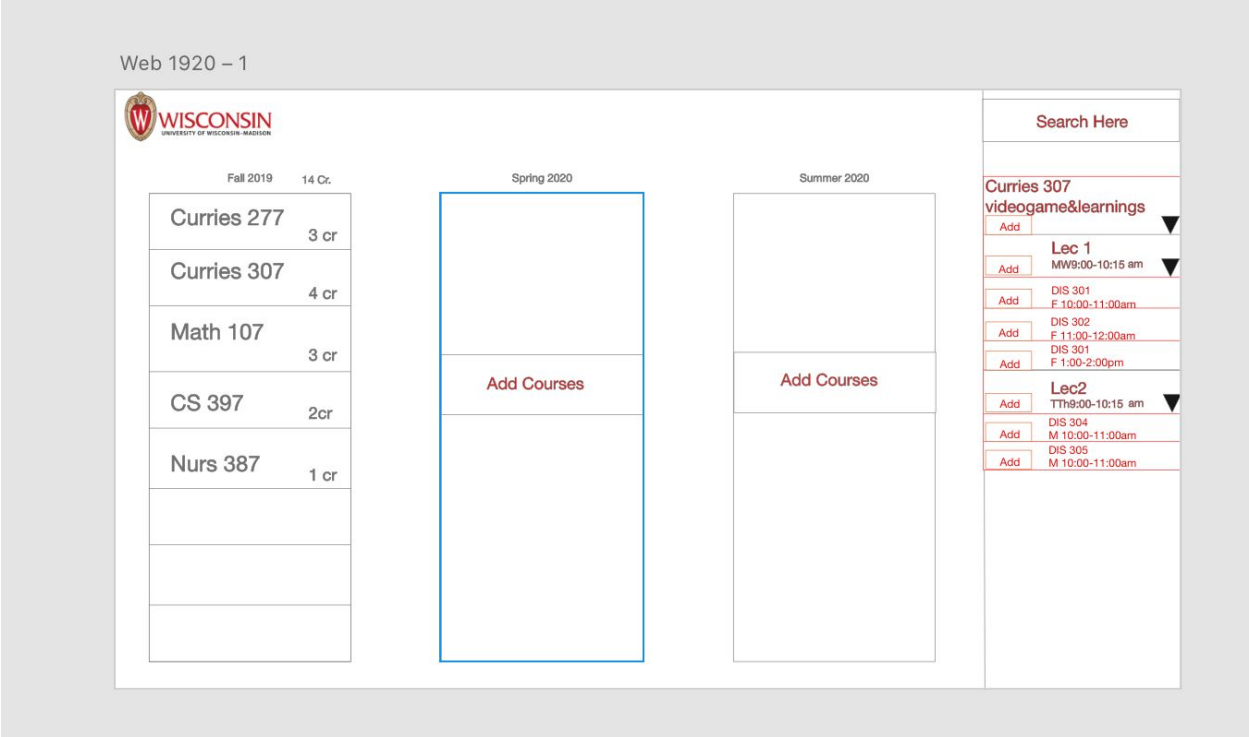
CS-639 Building User Interfaces, Fall 2019, Professor Mutlu

Assignments — Week 06 | Design | Designing for the Web

This assignment is designed to help you start making design decisions toward the final product you will build in Module 1. In the *React 3* assignment, you will have the option to build a *course recommender application* or a *course planner application*. The course recommender application will recommend the new courses to take based on user ratings of the courses they have taken in the past and the user's general areas of interest. The course planner application will construct schedules based on a tentative list of courses, enabling the user to plan a course schedule for a given semester. Review the React 3 assignment README for the specifications of each application. In this assignment, you will choose one of these options and make design decisions regarding what content you will include in your application, how the content will be organized within the application canvas, what navigation aids you will provide your user with, and what component hierarchy will result from your design.

Step 1. Conceptual Design. Choose one of the options for your application: *recommender* or *planner*. After reviewing the design specifications in the React 3 README, ideate on how it will work and sketch a conceptual design of the application. Your conceptual design can be hand-drawn or in the form of a digital wireframe (e.g., created in Adobe XD). Annotate your design to describe how the application will work and its main sections. Provide a photo or screenshot of your annotated design below.

<conceptual-design>



I designed a new planner. First, Students need to click the add courses button on each semester column to choose the specific semester that they want to plan their courses. Then, students can use the search function and add a section to the specific semester. Search function located in the right sidebar, students can search the course, and click the triangle to check the section, the same thing applies to the check subsection. Students can also click the add button to add this section to the specific semester column.

Step 2. Information Structure. Make a list of all the *content* that will be included in your design and displayed to the user, including content necessary to obtain user input, the output that your application will provide to your user, and other content that the user will need to effectively use your application. You can refer to previous lectures for discussion on Information Structure and Design Patterns for what kinds of elements/content your application might include. For each item in your list, provide a brief (2-to-3-sentence) description of the content, including the type of information included and its form (e.g., textual course description, shape that represents a class, a card that contains course information).

<content-elements>

- Shape that search function: the search function is on the right top side. Users can input the courses' name then the system will display the course information.
- textual course name and time: After users search the course, the system will display the course full name as well the lecture and section time.
- A card that contains a list of courses: each semester will be represented in a card form. The course that the student plan to take will list on the semester card.
- Shape that add courses function: when the semester card is empty, the add course shape will be displayed on the card to let students add courses on it.

Step 3. Content Organization. In this step, make decisions about how you will organize the content you described in the previous step on the application canvas. Specifically, make decisions about what will appear above and below the fold, whether there will be any content below the fold, whether the application will include multiple pages or a single page, and whether content that may not fit within a single page will be paginated or loaded using infinite scroll. For example, do you plan to show all recommended courses on a single page or show one on each page. If all courses are shown on a single page, will some of them be below the fold? If you are showing one course at a time, will you paginate the recommended courses or load more on the page as the user requests them? Provide a narrative description of your decisions and their justifications below.

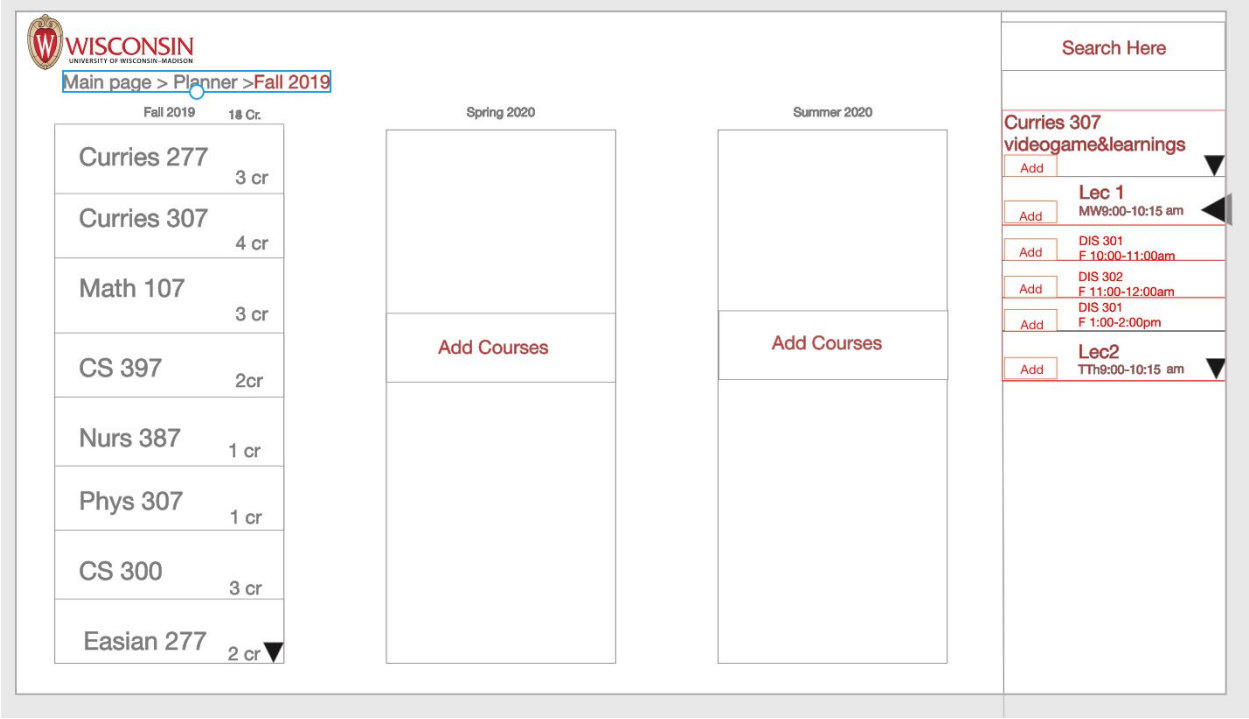
<narrative-description-of-design-choices>

In my design, there will be two parts that can exceed one page. One is the courses on the semester card. The other one is when students check the sections and subsections. In the first situation, students may add too many courses on the semester card, therefore some courses will be displayed below the fold. In this situation, since the courses that students add on the semester card are equally (this means there is no course important than other courses), I decide the course will display on system card by student add

Sequentially. Students add the course first, then it will display on the first position of the list, and the courses that added later will be displayed after the previous courses. In the second situation, there will be lots of sections, some sections will below the fold. Therefore, I decide that when the students first search the course, the sections and subsection will be hidden. Once the students choose the specific course and sections then the students can decide to check its subsections. Students can click the black triangle to check the hidden subsections. It can guarantee students choose the satisfied sections. Therefore, students don't have to scroll down the page to check the other information that they don't need to know.

Step 4. Navigation Aids. Determine what navigation aids will be necessary for the user to effectively use and navigate through your application. For example, if the user is reviewing multiple recommended courses or multiple course plans, how you envision the user to navigate through them? Do you need a menu that reflects the main sections of your application or the steps of the proscess users must follow? Create a hand- or digitally drawn mock-up of your application that illustrates the decisions you made in Steps 3 and 4 and annotate pieces of content and navigation aids.

<mock-up-illustrating-content-organization-and-navigation-aids>



Step 3: Students can click the black triangle on the Fall 2019 planner to check the more classes that students plan to take. The courses display logic is explained in step 3. The sidebar that for students search the courses. The student can click the triangle to check the section or subsection. Students can also click the triangle to hide the section or subsection.

Step 4: The menu is listed under the UW-Madison logo. Students can click the each section to go back to a different step. Once the student chooses a specific semester, the semester name will add on the menu. For example, now the student chooses Fall 2019 and he will plan his class for Fall 2019. Once student

wants to change the other semester, the student can only need to click the semester column to choose the other semester and add courses to that semester.

Step 5. Component Hierarchy. In this final step, review the mock-up you created in the previous step and describe the component hierarchy that you expect your application will have in its implementation. Review React 2 lecture for example hierarchies. An example/template is also provided below. Include a one-sentence description of each component. The output of this step will be the input into your React 3 assignment and guide the development of your application.

<component-hierarchy>

Example component hierarchy:

Component A — *description*
    Component A1 — *description*
    Component A2 — *description*
Component B — *description*
    Component B1 — *description*
        Component B1a — *description*
        Component B1b — *description*
    Component B2 — *description*

Semester Card— *Different card represents different semester, it caintains courses that student plan to take.*
    Course name — *show the course name to make sure that students add the correct course.*
    Course credits — *It can help students balance their workload*
    Add Courses — *Students can click the Add Courses button to add courses to an empty semester column.*
SideBar — *contains search function, course, and section information.*
    search— *once students choose the specific semester to add the courses, they can use search to find the course that want to take.*
        Course, section, subsection— *show the course as well as section information, such as name and time.*