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

# Assignments — Week 05 | Design | Design Paradigms

In this assignment, you will explore the use of two design paradigms—metaphorical and idiomatic design—in the context of redesigning the UW–Madison course search and enrollment system. Consider any aspect of the system, *e.g.*, search, scheduler, and degree planner, and think about how you would redesign these systems using metaphors and idioms following the instructions provided below. The "aspect" of the system can be the high-level organization of the interface, such as the "master/detail" pattern that the panes of the course search function follow, or a smaller component, such as the "drawer" that shows course sections. As in past assignments, you will create annotated, hand-drawn or digitally created sketches/mock-ups/wireframes supported by design justifications.

## Part 1. **Metaphors**

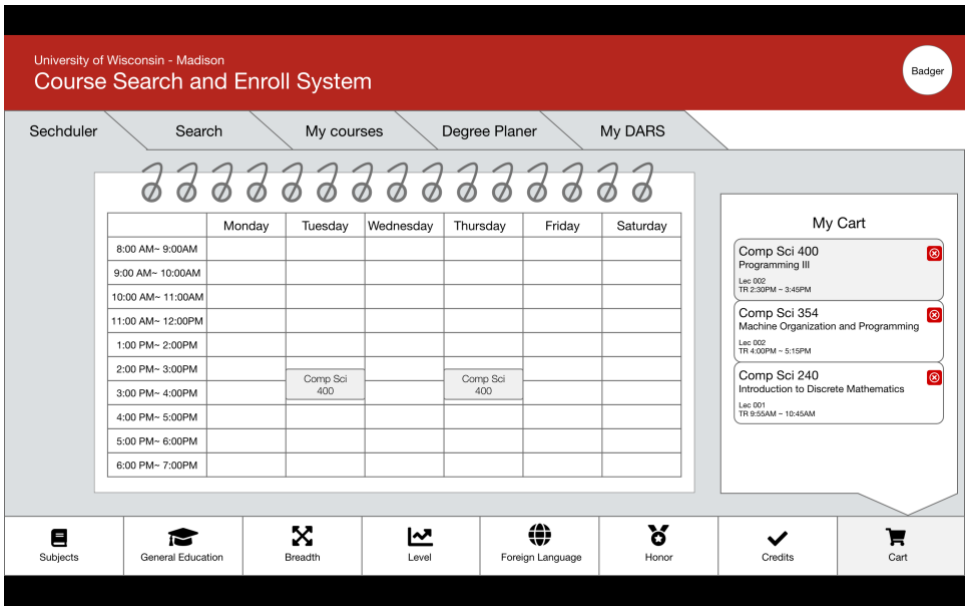
In this part of the assignment, you will borrow a "brick and mortar" metaphor from the real world that might serve as a good way to organize the functions provided by the system. For example, a rolodex can serve as a good metaphor for large lists, such as the list of courses; baseball cards might serve as a metaphor for information on each course; and a weekly planner can be a good metaphor for the scheduler. Follow the steps below to redesign the system function using metaphorical design:

1. **Identify the system element that you will redesign.** The element can be a major system function, such as the "scheduler," or a minor component that supports such a function, such as the ability to add courses to a cart.
2. **Search for appropriate real-world metaphors.** Think about situations in the real *physical* world where people perform functions that are similar to what the users do with the function/ component you chose.
3. **Apply metaphor to the design element.** This step would involve creating the appropriate visual and behavioral representations for the metaphor. E.g., if you chose to represent courses as baseball cards that students will collect, what should appear on the cards, and how should students collect them? Remember to consider and define both the **appearance** and **behavior** of your metaphorical redesign.

Provide an annotated mock-up/sketch of your redesign below. Your mock-up/sketch can be in any level of fidelity, e.g., a hand-drawn conceptual design sketch or a wireframe created in Adobe XD—whichever you prefer. Take photos of hand-drawn designs and screenshots of digitally created ones. Your annotations should highlight the different components of the metaphor, including its appearance and behavior. In a brief paragraph, justify your choice of the metaphor and describe how the metaphor supports the user's task in using the system element you chose to redesign.

---

Preview:




I redesigned the course scheduler and the layout of the course search and enroll system.

I used the idea of the folder to organize the system view. Since this is a course search and enroll system, the targets of users should be students, who are familiar with office supplies and know how to operate the folders. The folder serves as a metaphor for information display on each part of the system. In my design, I turned the vertical navigation bar, to tab on the folder tells the user that part he is using.


I used the idea of the calendar to design the scheduler. The calendar serves as a metaphor for course scheduler part of the system. Since this is a course scheduler and planner, the focus on the elements of the scheduler should be the days and time. In my design, when the user sees the interface, he will know that he is looking at a scheduler.

## Part 2. **Idioms**

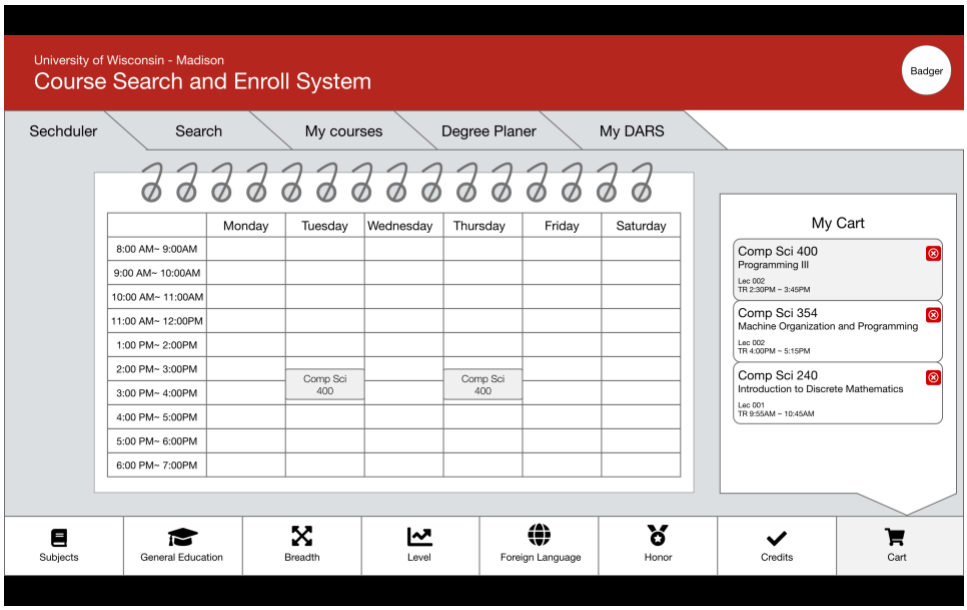
In this part of the assignment, you will practice idiomatic design by redesigning either the same system element you focused on in Part 1 or a different system element. Remember that idioms are highly expressive, dedicated interaction capabilities that users might learn. To practice idiomatic design in this part of the assignment, follow the steps below:

1. **Study the element.** Inspect the element to analyze how it is visually represented and how it behaves, *i.e.*, characterize the current idiom. What is the essential function of the element? For example, if there is a "drawer" that comes out to show more information on a course selection, how does that work, and what are the visual elements that make it up?
2. **Devise an alternative structure.** Now that you understand the essential functionality of the element, can you think of alternative—and potentially more effective—idioms to support its functioning? In the example above, what might be a novel way to present the necessary information?
3. **Define the idiom.** Remember the three levels of the idiom from Cooper et al., *idioms*, *compounds,* and *primitives*. Describe how your idiom will work at each level. What visual elements will cue users into using them, and how will your new design behave?

To describe your idiomatic design, provide an annotated mock-up/sketch below in the same fashion as you did in Part 1. Support your sketch/mock-up with a brief paragraph that justifies your design choices and describes the elements of the idiom.

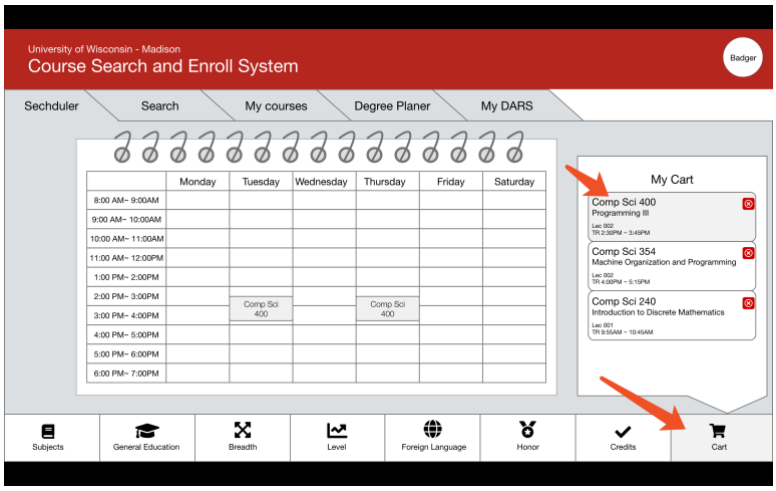
---

Preview:



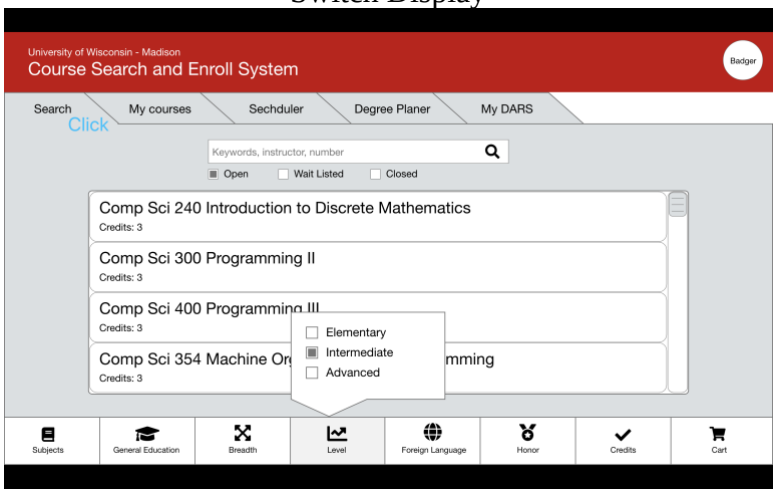

I redesigned the course scheduler and the layout of the course search and enroll system. I added several actionns on both the navigation bar and the scheduler.

Buttons and Selection



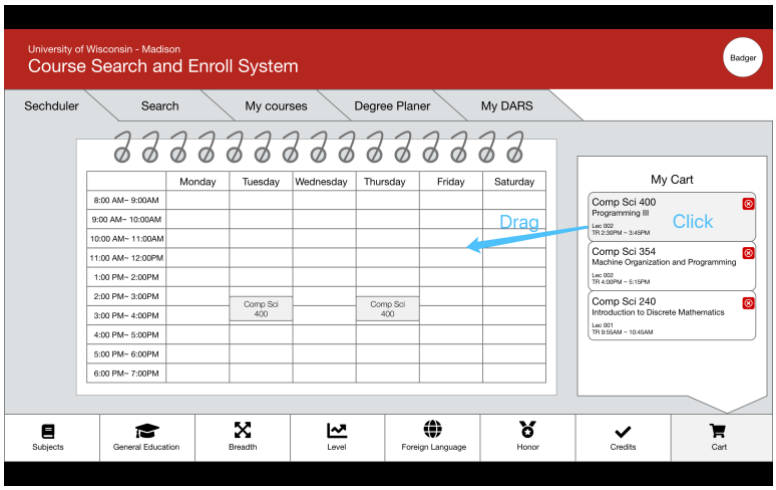

First is the buttons and selection. Sometimes, the users may not know the what function he is using because of lack of emphasize inn detail. By clicking on the buttons on course item on the display, the user will figure which part he is selecting. The atomic action is single click, the compounds are the cart drawer is opened and the feedback is that the section is on selected. This can be easily implemented by setting visual change on web development.

Switch Display



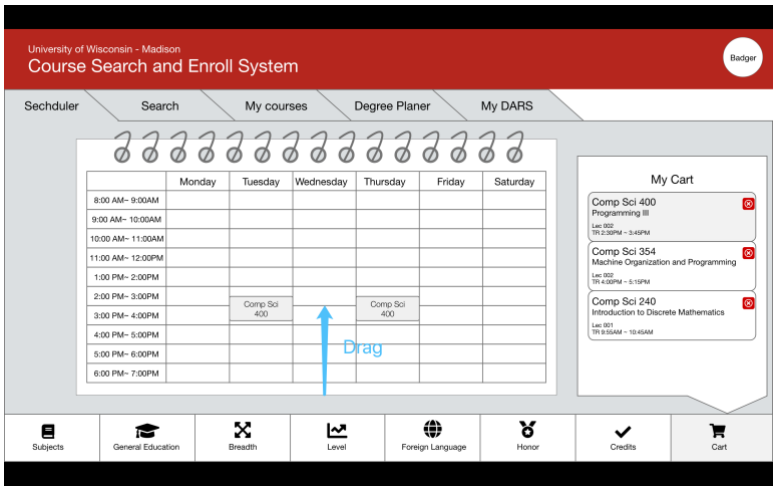

Second is the switch display. This is a simple idiom design. By clicking on the folder tag, the user can switch to a new section. The atomic action is single click and the feedback is that the section is displayed. This can be easily implemented by rendering new component on web development.

Add Course




Third is idiom is adding course. In this design, the user is allowed to either click on the course to add a course from cart or drag the course into the timetable. The atomic action is single click, the compounds are dragging and releasing the course and the feedback is a course is added to the timetable. This can be easily implemented tracking mouse action.

Switch Schedule




The last part is switch schedule. This function allows the user to switch schedule as if he is turn to a new page in a real calendar. The compounds are dragging and releasing the timetable and the feedback is a new schedule is displayed. This can be easily implemented by tracking mouse action and update the display component.