# COSC3331 Human-Computer Interaction

# (Assignment 1)

**Assigned on Jan 31, 2017. Submit through Blackboard before midnight Feb 14, 2017.**

**Question 1: Rapid Prototyping.**

**Part 1: Designing a Teaching Theater Control Panel (50 points).**

Suppose you are asked to design the facility control panel for a teaching theater. The purpose is to make it easy to use even for novice users. The control panel is used by the instructor to control and monitor the status of the following facilities:

* There is one instructor computer screen, a keyboard, and a mouse. There are also 10 student computer screens, keyboards, and mice (numbered from 1 to 10, and each computer also has a 6-alphanumeric-character name). Finally, there is one projector which projects the computer display to a large whiteboard. The instructor should have full control of them, including but not limited to:
  + Sending the content on the instructor's screen to all the students' screens and/or the projector.
  + Taking a student's screen content (by specifying the number or the name) and sending it to all the other students' screens and/or the instructor's screen, and/or the projector.
  + Taking a student's keyboard and/or mouse (by specifying the number or the name), which means the keyboard input and/or the mouse input to the student's will be from the instructor's keyboard and/or mouse.
  + Releasing all control so each student has full control of his screen, keyboard, and mouse.
* The instructor should also be able to control the intensity of the lights in the room. There should be nine lighting levels, ranging from high to low.

Guidelines

* Visual Basic or similar design environment is recommended. So basically just drag-and-drop controls to enhance your interface and set options in the properties dialog. No coding is required. However, some obvious restrictions should be enforced when appropriate. E.g., if you use groups of radio boxes, there should be one and only one item in each group that is selected.
* You should use only a single form.
* The focus is on the interface, and the grading criterion is centered on your interface design. Use command-buttons, check boxes, images, color, labels, etc. wherever and whichever way you feel is right.
* Please attach the screen shot as your answer for part 1.

**Part 2: Justify your design based on the guidelines, principles and theories in Chapter 2 (20 points).**

* My display is simple and uniform. Every type of element looks separate and unique. Everything is labeled with text. The colors are not too bright or jarring.
* Teachers usually aren’t the most technically savvy so I decided to make the interface as simple as possible to lessen the learning curve. There is no need to use a keyboard, and with a few tweaks I could make this interface touch-screen compatible as well.

**Question 2: Name a piece of software you often use where it is easy to produce an error. Explain ways you could improve the interface to better prevent errors (15 points).**

* Bash terminal. I often forget a piece of a command when deleting full directories or using rsync. An easier way is already designed. Using a good GUI like Windows Explorer/Mac Finder can do a lot of what the terminal does and much easier, like clicking a file/folder and just hitting the delete button. Or dragging a file from one folder to another. Each of these graphical processes take more time but find it much easier than inputting a command with multiple flags.

**Question 3: Give a brief explanation of the Eight Golden Rules of Interface Design. State an example you have seen on a device, computer interface or web site that violates those rules (15 points).**

1. Strive for consistency
   1. The NTTA site is inconsistent with its moving menus, multiple login forms on the same page and changing colors.
2. Cater to universal usability
   1. NTTA’s webpage is inconsistent from current standards, it has multiple log in forms on the same page in different places, menu items when you navigate to a different page.
3. Offer informative feedback
   1. There is no feedback button or a support area. There is a customer service number which is only working from 8-5 on work days. Which isn’t very helpful. There isn’t even an auto attendant to answer simple questions.
4. Design dialogs to yield closure
   1. For most actions in the terminal there is no success prompt. So if you type a command and it runs quickly then there will be no indication that it ran.
5. Prevent errors
   1. In the NTTA Login page there are two different login forms. And the create account form isn’t like what you would usually expect from a create account form so you never know what you’re supposed to be inputting or which forms should be filled out or not.
6. Permit easy reversal of actions
   1. In the Terminal if you use the delete command (rm) then that data is effectively gone. You need to get a professional to recover those.
7. Support internal locus of control
   1. The ATT site doesn’t let the user feel like they are in control. It’s very difficult to find or even login to your account to pay your bill.
8. Reduce short term memory load
   1. The terminal makes you remember every command you would want to use and then you also need to remember the flags for each command you want to use.