CIS 443/543 User Interfaces

Exercise #4 Interaction

This exercise will help you understand the relationship between UI design choices and human performance. You will also practice how to evaluate and predict the time it takes for an expert user to perform basic actions such as keying and pointing. Please turn in your work and keep a copy for discussion in class. I will grade this with either (submitted and did a reasonable job) or (not-submitted or a lousy job).

Due: Friday, February 10 at 10:00am

Assumptions:
Key press time is 0.2 secs
Fitts law time to point:
   Pointing time with a mouse = a + b log2 (D/W + .5), where a= 1.03; b=.096
The display is 17”
The camera is in the “home” or origin position
The image is 8” x 12”
The user’s cursor is in the middle of the image when the task is started
Each command icon is 0.2” x 0.2”
Each “click” on an icon is 1 unit
Pull-down menus are standard size for Windows or Mac OS. Specify which you are using.

Task: Using some of the tasks from Exercise #2:
Move Camera Horizontal LEFT 5 degrees
Move Camera Vertical UP 3 degrees
Move Camera Vertical DOWN 1 degrees
Rotate image CLOCKWISE 90 degrees
Zoom IN 3 clicks

PROBLEM:
  1. How long will it take to do the above task using three different interfaces?
     a. Command icons spread around the video image from the camera.
     b. Commands grouped together
     c. Pull-down menu selection
  2. Discuss differences in terms of the UI layout and design.
  3. What is the fastest? How could you speed it up even more?
  4. What have you left out of your analysis in terms of time to perform this task?
1. Command icons spread around the video image from the camera. (Courtesy of Gary Anson)
2. Command icons grouped together. (Courtesy of Alex Haugland)
3. Pull-down menu selection. (Courtesy of Joe Cannon)