

Computer Science 321.001
Human-Computer Interaction Design
Fall 2018

Design Project – Phase Zero (50 points)
Due on your team’s USB drive and turned in
by 3:30 PM on Tuesday, September 4, 2018

This assignment is designed to familiarize you with the team of classmates with whom you will be working for the rest of the semester, as well as with the HCI Lab (EB 3048) and the Morae software that your team will be using when conducting usability interviews.

							
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In this assignment, your team must schedule one one-hour session in the HCI Lab for each member of your team. Each session must occur on a different calendar day, and all team members must attend each session. (Although your scheduled sessions will be one hour in length, it is expected that you'll finish some sessions early, once your team becomes familiar with the lab and the Morae software.)

In each session, a different software application will be tested. Each team member will play a role in the usability test being conducted:

One team member will be the **interview facilitator**, who will start the Morae Recorder software on the iMac in the HCI Lab's User Interaction Room and, using the supplied interview outline, assign the interview subject several specific tasks to complete using the designated software application being tested.

It is strongly recommended that, prior to the actual session, the facilitator become familiar with the designated software application and the tasks being assigned. However, the facilitator should not tell the interview subject how to accomplish the assigned tasks, since the purpose of the session is to determine how easily the subject can accomplish the tasks with no help.

If the subject cannot determine how to accomplish a particular task after repeated attempts, the facilitator may ask the subject to proceed to the next task, but only after asking the subject to explain the difficulty and to suggest improvements in the application to address the problem.

Remember that it's the software that's being tested, not the interview subject.

One team member will be the **interview subject**, who will use the software package being tested to attempt to perform the numbered tasks assigned by the facilitator, asking for clarification when necessary and responding to any questions asked by the facilitator.

Prior to the actual session, the interview subject should not become familiar with the designated software package or the tasks that will be assigned.

Remember that the point of this exercise is to determine how usable the software and its functionality is to a relatively inexperienced user.



The remaining team member(s) will remain in the HCI Lab's Design Room, observing the interview session by means of the Morae Observer software running on the PC in that room. One team member will be designated as the **lead observer**, who must activate the Morae Observer software and annotate the recorded session with markers indicating the beginning and ending of the numbered tasks, as well as logging any comments regarding the session that are noteworthy (e.g., tasks that the interview subject found difficult to complete, insightful remarks by the interview subject, observer suggestions for addressing the problems experienced by the interview subject).

Any additional observers should assist the lead observer by suggesting annotations, but conversation between the observers should be minimized during the session in order to pay closer attention to the session in progress.

At the end of each session, the lead observer must organize the annotated Morae Observer session into an organized list of observations and suggestions for improvement, and insert this list into the Phase Zero Word document that your team will submit on the instructor-provided USB drive.

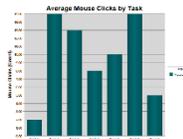
Each session will have a different software application to test, a different facilitator, a different interview subject, and a different lead observer, and each team member will play each of these primary roles exactly once for this assignment.

It is strongly recommended that your team schedule an early session in the HCI Lab to familiarize yourself with the Morae software before your first interview session. A printed copy of a full users guide to the Morae software is available in the HCI Lab, and on-line material about the Morae software, including help documentation and video tutorials, is available at <https://www.techsmith.com/tutorial-morae-documentation.html>.

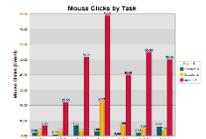
Also, keep in mind that, due to the large number of students taking CS 321 this semester, no team will be permitted to schedule more than one hour-long session in the HCI Lab in a single calendar day. Exchange contact information with your fellow team members right away and coordinate your schedules so that all team members will be able to attend each of your planned sessions.

After your last interview session, your team will need to schedule one additional session in the HCI Lab to use Morae Manager (installed on the iMac in the User Interaction Room) to analyze the results of the interview sessions conducted by your team. Using the recorded and annotated sessions from Morae Recorder and Morae Observer, your team will produce bar charts with Morae Manager that illustrate:

The task times for all of the tasks from each interview session, with each software package's task times placed in a separate bar chart.



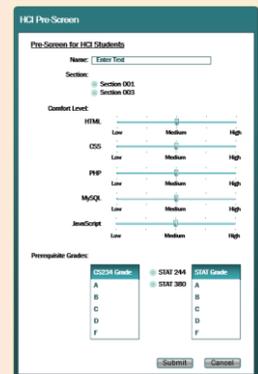
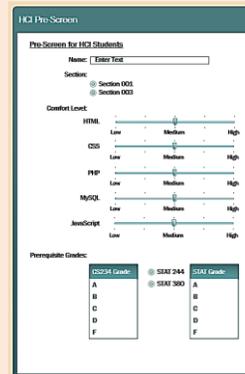
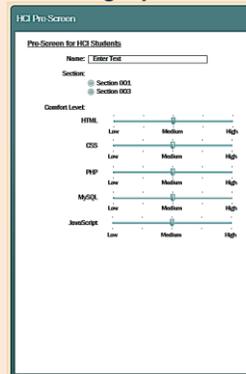
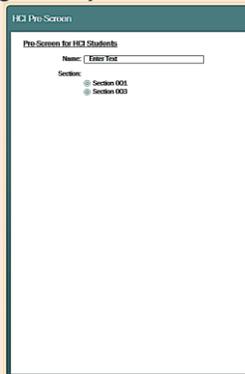
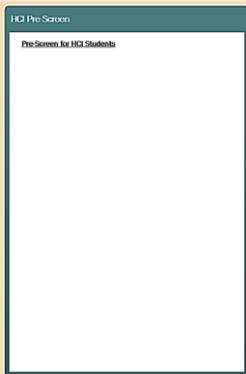
The number of mouse clicks used in each session, with all of the mouse click counts for all of the software packages placed in a single bar chart.



Place screen shots of these bar charts in the Phase Zero Word document. Include the dates, times, and durations of each interview session, as well as a specification of the role played by each team member in each session.

Interview Session 1 Tasks: Microsoft Visio

1. Start the "Visio" application under Microsoft Office in the Start menu.
2. Create a Wireframe Diagram layout in the Software category.



3. (First Figure) Create a Dialog Form in the middle of the Visio page with empty space of about 1.5 inches surrounding it on all sides. Apply the Ion theme for its design, with a title bar containing the text "HCI Pre-Screen". Change the font in the title bar to be 14-point. Then put a 12-point bold, underlined label in the upper left of the dialog's interior, with the text "Pre-Screen for HCI Students".
4. (Second Figure) Below the first label, add a 10-point label with text "Name:" followed by a 10-point textbox (wide enough to hold a reasonably long name) to its right. Below these, add a 10-point label with text "Section:" and below that, place two 10-point radio buttons, the top one with text "Section 001" and the bottom with text "Section 003". Use alignment to right-align the colons on the "Name:" and "Section:" labels.
5. (Third Figure) Add a 10-point "Comfort Level:" label below the radio buttons, aligning its colon with the colons of the previous label. Below that, add a slider control that is about the same width as the original "Name:" textbox. Place 9-point labels "Low", "Medium", and "High" at appropriate locations below the slider's tick marks. Place a 10-point "HTML" label to the left of the slider. Then copy the slider and its labels four times, lining the new sliders up below the first slider. Change the left labels on the four new sliders to "CSS", "PHP", "MySQL", and "JavaScript", and then right-align all five of these slider labels.
6. (Fourth Figure) Add a 10-point "Prerequisite Grades:" label below all of the sliders, right-aligning its colon with all of the previous colons. Add a listbox with title bar text "CS234 Grade" below that, and insert the letters "A", "B", "C", "D", and "F" as its listbox items. Copy this listbox and place the copy to the right of the first listbox, right-aligned with the sliders, changing the title bar to read "STAT Grade". Between the two listboxes, place two radio buttons, the top with text "STAT 244" and the bottom with text "STAT 380".
7. (Fifth Figure) Finally, place two medium gray buttons side-by-side in the lower right corner of the dialog. Give the left button black 12-point text "Submit" and give the right button black 12-point text "Cancel".

Interview Session 2 Tasks: Calculator

1. Start the "Calculator" application.
2. Use the calculator to calculate "eight factorial" (without just multiplying the sequence of numbers). Take that number's square root. Then take the reciprocal of that number.
3. Use the calculator to calculate "e" to the "pi" power and to calculate "pi" to the "e" power (without typing out the decimal values yourself). Determine which of the two values is larger.
4. Use the calculator to convert 100 US dollars into Canadian dollars, Australian dollars, New Zealand dollars, and Singapore dollars.
5. Use the calculator to compute how many days between today's date and the date of next presidential election, November 3, 2020.
6. Use the calculator to convert the decimal number 200,211,150 into hexadecimal.
7. Use the calculator to convert a 98.549 degree angle into radians.

Interview Session 3 Tasks: Math Input Panel

1. Start the "Math Input Panel" application from Windows Accessories.
2. Use this application to create the relativity formula: $E = mc^2$
3. Use the application to create the quadratic formula:

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

4. Use the application to create the summation formula:

$$\sum_{i=0}^n i = \frac{n(n+1)}{2}$$

5. Use the application to create the formula for the dot product:

$$\vec{a} \cdot \vec{b} = |\vec{a}| |\vec{b}| \cos \theta$$

6. Create a new Word document and copy the dot product formula into it.

7. Use the application to create the set notation formula:

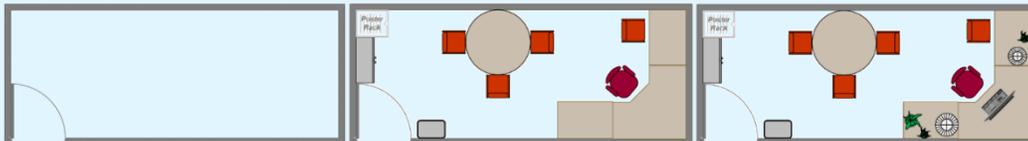
$$x \in \{r \in \mathbb{R} | r \geq \pi\}$$

and copy that formula into your Word document.



Interview Session 4 Tasks: Microsoft Visio (Only if your team has four members)

1. Start the "Visio" application under Microsoft Office in the Start menu.
2. Create an Office Layout floor plan.
3. Create a basic room layout measuring 18 feet by 7 feet to represent the HCI Lab Interaction Room. Place a door in the appropriate location along the bottom side of the room layout.



4. Place a 2x3 table, a 3x2 table, and a 4x4 corner surface (with a 2-foot radius section missing) in the appropriate corner. Then place a 3.5-foot diameter round table in the middle of the opposite wall and a 1.5x2.5 storage unit next to the open door.
5. Next, place a desk chair, four side chairs with arms, a trash can, and some object to represent the poster rack in appropriate positions within the room.
6. Recolor all of the objects placed thus far to match their real colors. Label the poster rack object with text indication what it is.
7. Finally, place two lamps, three plants, a keyboard, and a monitor at appropriate places on the tables and corner surface.

Phase Zero Deliverables (in the "Phase 0" folder on the instructor-provided USB drive):

1. Recorded .wmv files for each of your interview sessions.
2. A single Microsoft Word document containing the following items, in order:
 - Session summaries written by each session's lead observer
 - Identify the names of the interview subject, the lead facilitator, the lead observer, and any additional observers.
 - Specify the date, time, and duration (in minutes) of the entire session.
 - Itemize all difficulties experienced by the interview subject in performing the session tasks, explaining the problem that caused each difficulty, as well as possible improvements to the application's interface that might overcome that difficulty. Identify whether the suggested improvement came from the interview subject or one of the observers.
 - Include the task time bar chart that was generated from Morae Manager for this session.
 - Closing section containing the single Morae Manager bar chart comparing the number of mouse clicks employed by the interview subjects in all of the sessions.