

CIS 375 – Human-Computer Interaction

Gersh, J. R., McKneely, J. A., and Remington, R. W. (2005) Cognitive engineering: Understanding human interaction with complex systems. *Johns Hopkins APL Technical Digest*, 26(4), 377–382. Also available at <http://www.jhuapl.edu/techdigest/TD/td2604/Gersh.pdf>

Computer applications that run on desktop and laptop computers have, for a long time, been designed to be driven by dragging and clicking a mouse. With the introduction of tablet personal computers, the trend has shifted toward using touch-based screens. We now have access to touch-based TVs, touch-based monitors, and touch-based laptops. Touch and multi-touch devices provide end users with the ability to interact physically with an application much more naturally.

Imagine that you have been assigned the task of redesigning your company's applications to run on all devices. Examine a multi-touch computer monitor and a mouse-driven computer monitor and think about how the end user interacts with an application running on each of these types of monitors.

Write a four to five (4-5) page paper in which you:

1. Compare and contrast the metaphors used in the design of applications that run on each type of monitor. Use Microsoft Visio, Microsoft PowerPoint, or any other modeling tool to create.

Differentiate between the interaction types and styles that apply to these monitors and applications running on them.

Describe the conceptual model employed in the design of these types. Describe the analogies and concepts these monitors expose to users, including the task-domain objects users manipulate on the screen.

Use at least three (3) quality resources in this assignment. **Note:** Wikipedia and similar Websites do not qualify as quality resources. You may use the resources above or others of your choosing.

Your assignment must follow these formatting requirements:

Be typed, double-spaced, using Times New Roman font (size 12), with one-inch margins on all sides; citations and references must follow APA or school-specific format. Check with your professor for any additional instructions.

Include a cover page containing the title of the assignment, the student's name, the professor's name, the course title, and the date. The cover page and the reference page are not included in the required assignment page length.

The specific course learning outcomes associated with this assignment are:

Describe the relationship between the cognitive principles and their application to interfaces and products.

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Explain the conceptual terms for analyzing human interaction with affordance, conceptual models, and feedback.

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Explain the importance of user abilities and characteristics in the usability of products.

Use technology and information resources to research issues in human-computer interaction.

Write clearly and concisely about human-computer interaction topics using proper writing mechanics and technical style conventions.

Grading for this assignment will be based on answer quality, logic/organization of the paper, and language and writing skills, using the following rubric.

Points: 100 Assignment 1: Multi-Touch Screens vs. Mouse-Driven Screens					
Criteria	Unacceptable Below 60% F	Meets Minimum Expectations 60-69% D	Fair 70-79% C	Proficient 80-89% B	Exemplary 90-100% A
1. Compare and contrast the metaphors used in the design of applications that run on each type of monitor. Use Microsoft Visio, Microsoft PowerPoint, or any other modeling tool to create. Weight: 30%	Did not submit or incompletely compared and contrasted the metaphors used in the design of applications that run on each type of monitor. Did not submit or incompletely used Microsoft Visio, Microsoft PowerPoint, or any other modeling tool to create.	Insufficiently compared and contrasted the metaphors used in the design of applications that run on each type of monitor. Insufficiently used Microsoft Visio, Microsoft PowerPoint, or any other modeling tool to create.	Partially compared and contrasted the metaphors used in the design of applications that run on each type of monitor. Partially used Microsoft Visio, Microsoft PowerPoint, or any other modeling tool to create.	Satisfactorily compared and contrasted the metaphors used in the design of applications that run on each type of monitor. Satisfactorily used Microsoft Visio, Microsoft PowerPoint, or any other modeling tool to create.	Thoroughly compared and contrasted the metaphors used in the design of applications that run on each type of monitor. Thoroughly used Microsoft Visio, Microsoft PowerPoint, or any other modeling tool to create.
2. Differentiate between the interaction types and styles that apply to these monitors and applications running on them. Weight: 30%	Did not submit or incompletely differentiated between the interaction types and styles that apply to these monitors and applications running on them.	Insufficiently differentiated between the interaction types and styles that apply to these monitors and applications running on them.	Partially differentiated between the interaction types and styles that apply to these monitors and applications running on them.	Satisfactorily differentiated between the interaction types and styles that apply to these monitors and applications running on them.	Thoroughly differentiated between the interaction types and styles that apply to these monitors and applications running on them.
3. Describe the conceptual model employed in the design of these types. Describe the analogies and concepts these monitors expose to users, including the task-domain objects users manipulate on the screen. Weight: 25%	Did not submit or incompletely described the conceptual model employed in the design of these types. Did not submit or incompletely described the analogies and concepts these monitors expose to users, including the task-domain	Insufficiently described the conceptual model employed in the design of these types. Insufficiently described the analogies and concepts these monitors expose to users, including the task-domain objects users manipulate on	Partially described the conceptual model employed in the design of these types. Partially described the analogies and concepts these monitors expose to users, including the task-domain objects users manipulate on	Satisfactorily described the conceptual model employed in the design of these types. Satisfactorily described the analogies and concepts these monitors expose to users, including the task-domain objects users manipulate on	Thoroughly described the conceptual model employed in the design of these types. Thoroughly described the analogies and concepts these monitors expose to users, including the task-domain objects users manipulate on

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	objects users manipulate on the screen.	the screen.	the screen.	the screen.	the screen.
4. 3 references Weight: 5%	No references provided	Does not meet the required number of references; all references poor quality choices.	Does not meet the required number of references; some references poor quality choices.	Meets number of required references; all references high quality choices.	Exceeds number of required references; all references high quality choices.
5. Clarity, writing mechanics, and formatting requirements Weight: 10%	More than 8 errors present	7-8 errors present	5-6 errors present	3-4 errors present	0-2 errors present