Designing Interactive Systems I

A04 and Week 5 Discussion; Introduction to Week 6 and A05

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http://hci.ac/dis
In-Class Exercise: Memex, Sketchpad, and NLS

• What are some features of Memex, Sketchpad, and NLS that we currently use? How have these features evolved?

• What are the features from these systems that do not currently exist? Why do you think they do not exist?
Memex Animation from SIGIR '95
http://www.youtube.com/watch?v=c539cK58ees
Part 3: Historical Perspective: “Computer Sketchpad” (Excerpt)

* a classic and beautiful system
* first CAD system

(not shown at CHI’83)

Part 1: https://www.youtube.com/watch?v=USyoT_Ha_bA
Part 2: https://www.youtube.com/watch?v=BKM3CmRg
Mother of All Demos: https://www.youtube.com/watch?v=yJDv-z
Midterm Exam Preparations
5. [9 points] Philipp is about to buy a new input device for his shooter games. He can either choose SuperMouse or CheapMouse that can only register horizontal and vertical movements. To make a decision, he applies a Fitts’ Law test for the game screen shown below in which he has to click targets in a sequence.

Philipp uses Shannon's formulation of Fitts' Law ($M_T = a + b \log_2 \left( \frac{D}{W} + 1 \right)$) and knows the device specific parameters:

SuperMouse: $a = 0 \text{ ms}$, $b = 100 \frac{\text{ms}}{\text{bit}}$
CheapMouse: $a = 0 \text{ ms}$, $b = 80 \frac{\text{ms}}{\text{bit}}$

(a) [4 points] Using SuperMouse, Philipp clicks the targets along the following path: Start $\rightarrow$ A $\rightarrow$ B $\rightarrow$ C. Identify the corresponding $D$ and $W$ values (in cm) for Shannon's formula and calculate the total movement time.

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$M_T = \ldots$

(b) [4 points] Since CheapMouse cannot register diagonal movements, Philipp uses a different path for this device: Start $\rightarrow$ B $\rightarrow$ C $\rightarrow$ A. Identify the corresponding $D$ and $W$ values (in cm) for Shannon's formula and calculate the total movement time.

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$M_T = \ldots$

(c) [1 point] If Philipp had chosen the remaining path Start $\rightarrow$ B $\rightarrow$ A $\rightarrow$ C for CheapMouse, would $M_T$ be different compared to (b)? Justify your answer! (No calculation necessary!)
\( M_T = 600 m/s \) or: 200, 200, 200

\( M_T = 560 m/s \) or: 160, 160, 240

c) Yes, because different direction of movement: different distance/width ratio
Slips

- Marcel is receiving a phone call. Instead of grabbing his button cell phone, he accidentally picks up the calculator.

Name the slip Marcel made and briefly explain why it happened.

Description-similarity slip

“I need to pick up the device with the buttons.”
CMN Model

- Fill in the blanks below each “?” in this diagram of the CMN model. For the processors, also give their average timings.
Gestalt Laws

- Identify three Gestalt Laws that are violated in the interface below by marking the issue with a circle and writing the name of the law that has been violated next to it.
Gestalt Laws

- Which Gestalt law has been applied here? Justify your answer.

Law of proximity lets you see the U as a single object

Also law of similarity
Information Content

- What is the information content (in bits) for the following UI? Keep your answer in a mathematical formula.

\[ \log_2(3) + \log_2(6) \text{ bits (this is the same as } \log_2(3 \times 6) \text{ bits) } \]
How to Fail Easily

• Write down more than what is asked for. E.g., write down two examples of affordances, when we have just asked for one. (⇒ No points for the answers.)

• Write down the answers in other languages. E.g., “Hallo meine Freunde, das ist meine Antwort.” (⇒ No points for the answer.)

• Repeating yourself or writing down lengthy, verbose answers. E.g., “This is an example of an affordance because it affords the action of pressing it. An affordance is the action that is afforded by an object. In this case, the action is pressing the object. So, the affordance of the object is pressing it.” (⇒ No points for the answer and 1 week detention.)

• Writing the answers using a pink (i.e., not black or blue) pen or pencil. (⇒ No points for the answer, but you do get some unicorn points. :))
A05: Understanding the Evolution of Interface Design
Course Content for Week 6
Phases of Technology

Virtual Fixtures (1982)
Wright Patterson AFB

Virtual Overlay

Virtual Reality

Interactive System

Augmented Reality

AR Game

AR Architecture
Ubiquitous Computing
LAURA AND MATT
LANCASTER ESTATE, HERALDSBURG, CA, NOVEMBER 2, 2012

TONIGHT YOU’LL BE EATING...

first course: Whole Leaf Romaine Salad with Pt. Reyes blue cheese dressing, bacon, avocado & radish

second course: Pumpkin Ravioli with Brown Butter Sage

entree: Zinfandel Braised Short Ribs, Horseradish Mashed Potatoes, Brussel Sprouts with Sherry & Zin Bacon

dessert: Cupcakes by Sift Bakery

THANK YOU FOR BEING HERE

we appreciate the travel, effort + time it took

YOU ARE SPECIAL TO US

THANK YOU FOR BEING OUR SUPPORT SYSTEM.
YOU HAVE HELPED MAKE US WHO WE ARE TODAY.
SO PLEASE ENJOY TONIGHT! WE LOVE YOU
Which one to use when?

2010-2012
2010–2012
2010—2012

Serif (pronounced “sairiff,” not “suh reef”)
What Next?

• By Friday (Nov. 22), submit A05
• By Friday (Nov. 22), watch Visual Design videos
• By next Tuesday (Nov. 26), watch the remaining videos of History 1 & 2
• Prepare for the midterm exam!
  17:15–18:45 (for 60 min.) on Wednesday (Nov. 27) in room 0.109
A04 Presentations