Designing Interactive Systems I

A05 Discussion, Introduction to Week 7 and A06, Midterm Exam Preparation, and A04 Presentations

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Interesting Solutions from A05

Interesting interaction-based features you identified: Sun Starfire

- A wand to select objects in an image
- Editing images so that they retain the structure (e.g., when moving the arm)
- Interacting with hybrid interfaces
- Pressure-based scanning

Interesting interaction-based features you identified: Put-that-there

- Screen pointing with gestures
- Detect who is issuing voice commands

Interesting interaction-based features you identified: Apple Knowledge Navigator

- Human-like AI appearance
- AI can perform semantic understanding of documents, work with diagrams, and understand phone calls
- Can pause the VA when talking

Midterm Exam

- Where? **TEMP2 (1515|002)**
- When? For 60 minutes, 17:15–18:45h on Wednesday (Nov. 27)
- What should you bring?
  - A blue or a black pen; please do not use pencils
  - Photo ID (RWTH bluecard or a valid Ausweis with photo)
  - No calculators or smart watches

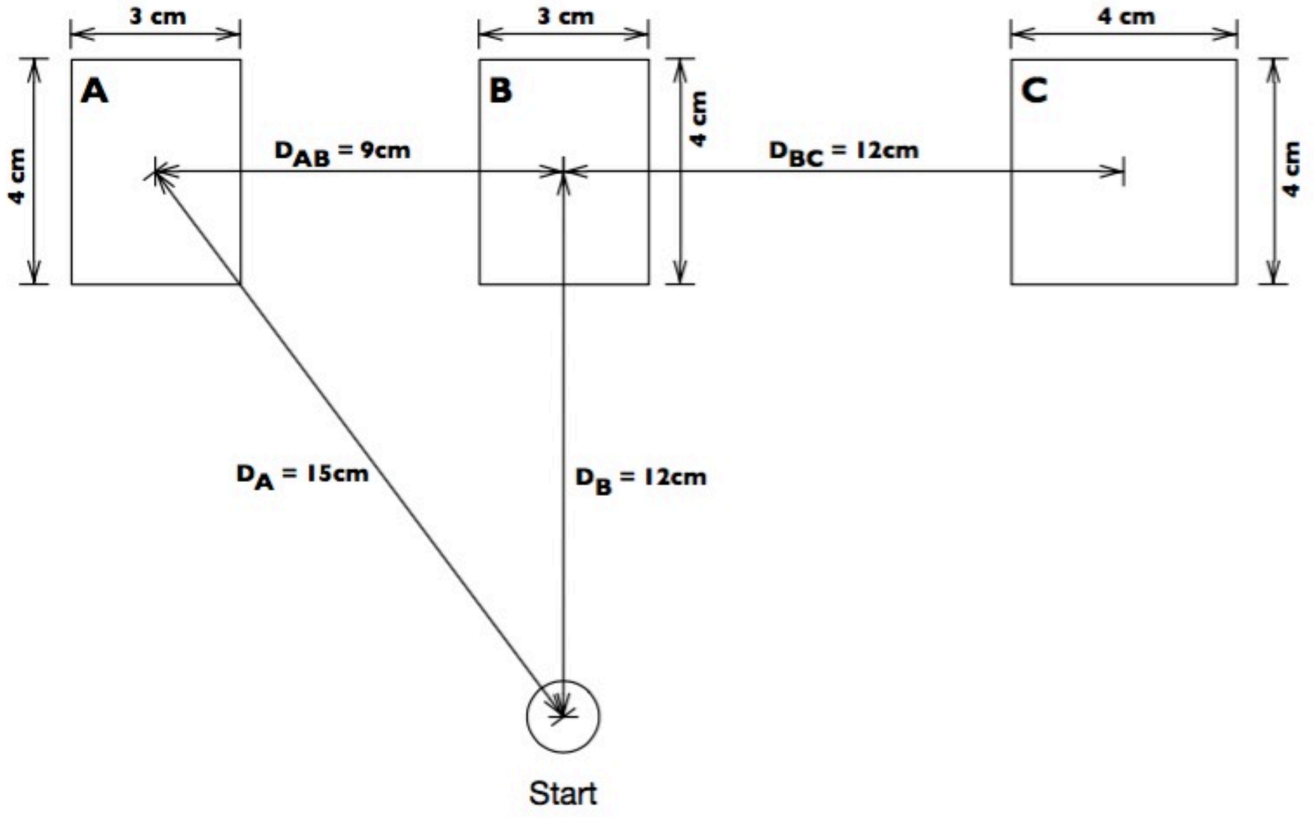
Midterm Exam Preparations

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 ($\mathbf{M_T = a + b * log_2(\frac{D}{W} + 1)}$) and knows the device specific parameters:

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

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



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

	S→A	A→B	B→C
D			
W			

$M_T =$

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

	S→B	B→C	C→A
D			
W			

$M_T =$

(c) [1 points] If Philipp had chosen the remaining path **Start** → **B** → **A** → **C** for *CheapMouse*, would M_T be different compared to (b)? Justify your answer! (**No calculation necessary!**)

a)	S→A	A→B	B→C
D	**15cm**	**9cm**	**12cm**
W	**5cm**	**3cm**	**4cm**

$$M_T = 600ms$$ or: 200, 200, 200

b)	S→B	B→C	C→A
D	**12cm**	**12cm**	**21 cm**
W	**4cm**	**4cm**	**3cm**

$$M_T = 560ms$$ 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.

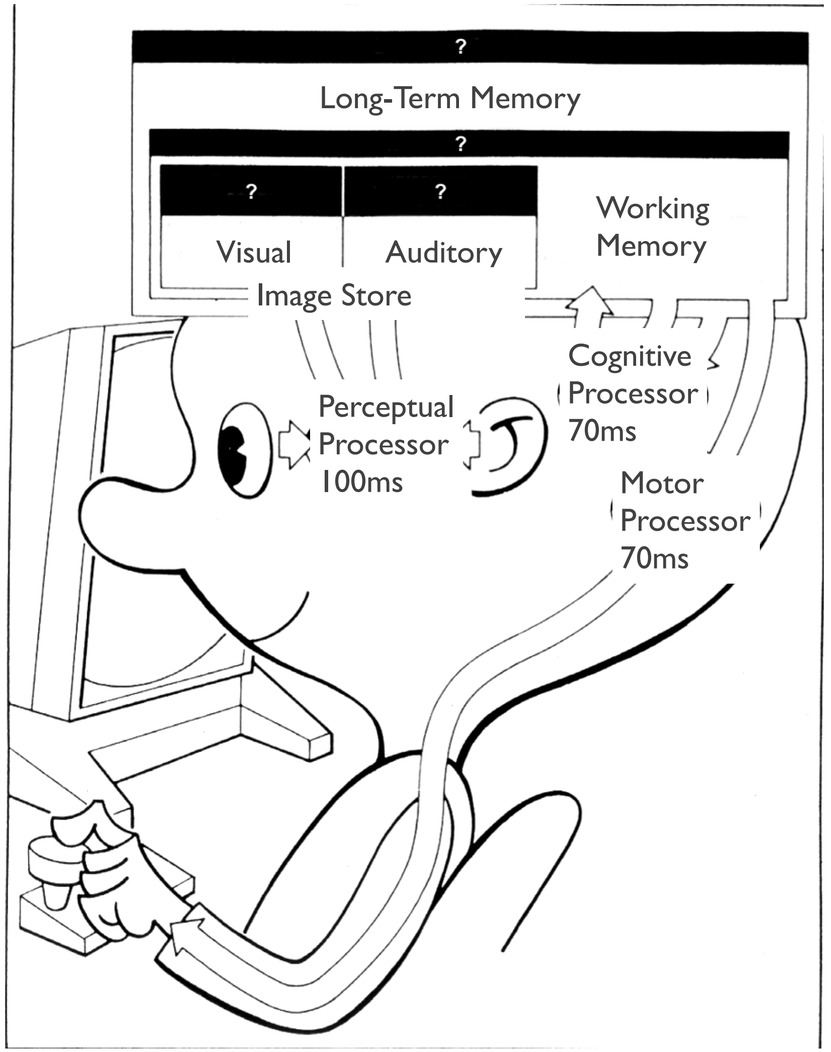
  Name the slip Marcel made and briefly explain why it happened.

Description-similarity slip

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

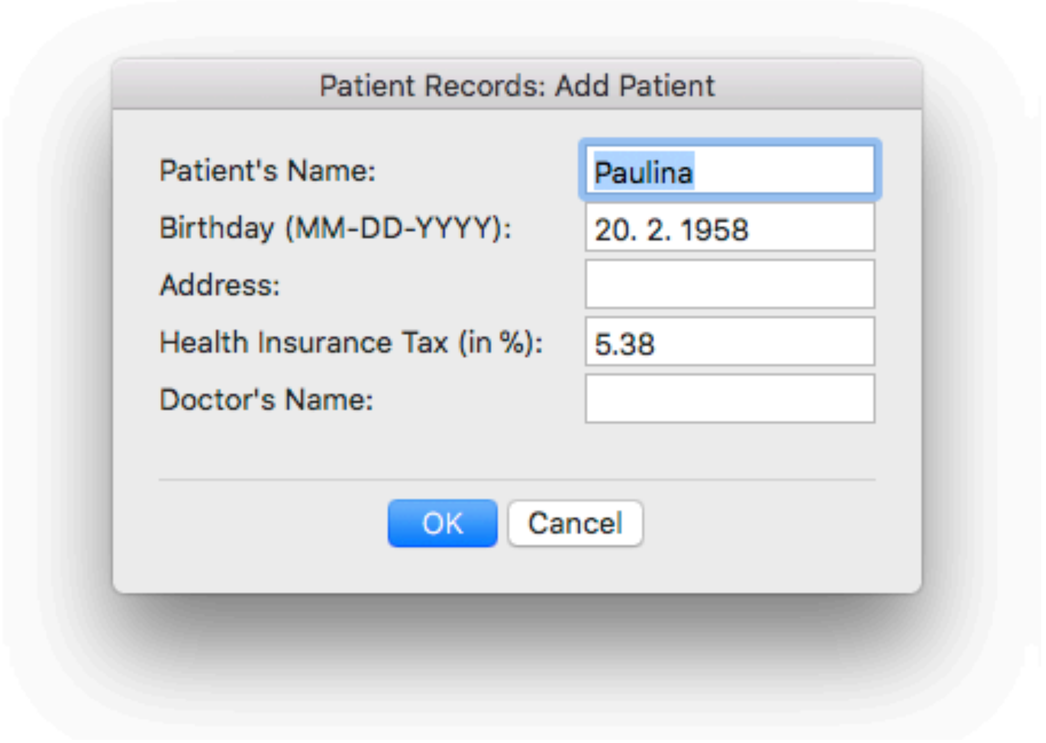
CMN Model

- 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

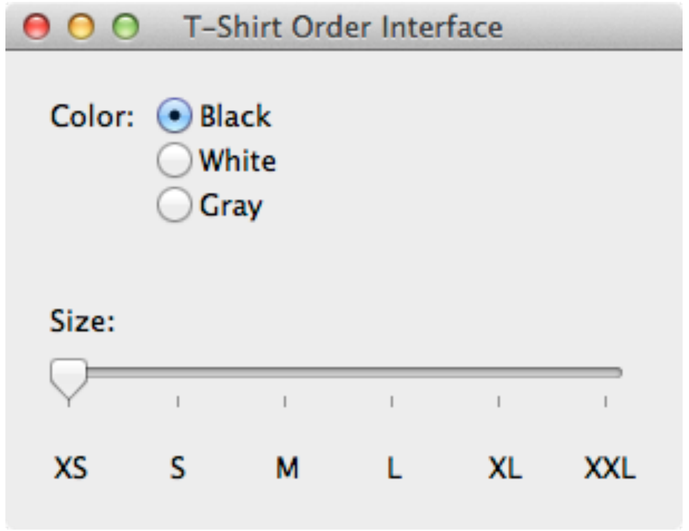
- Which Gestalt law has been applied here? Justify your answer.

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.



$\log_2(3) + \log_2(6)$ bits (this is the same as $\log_2(3*6)$ bits)

How to Fail Easily

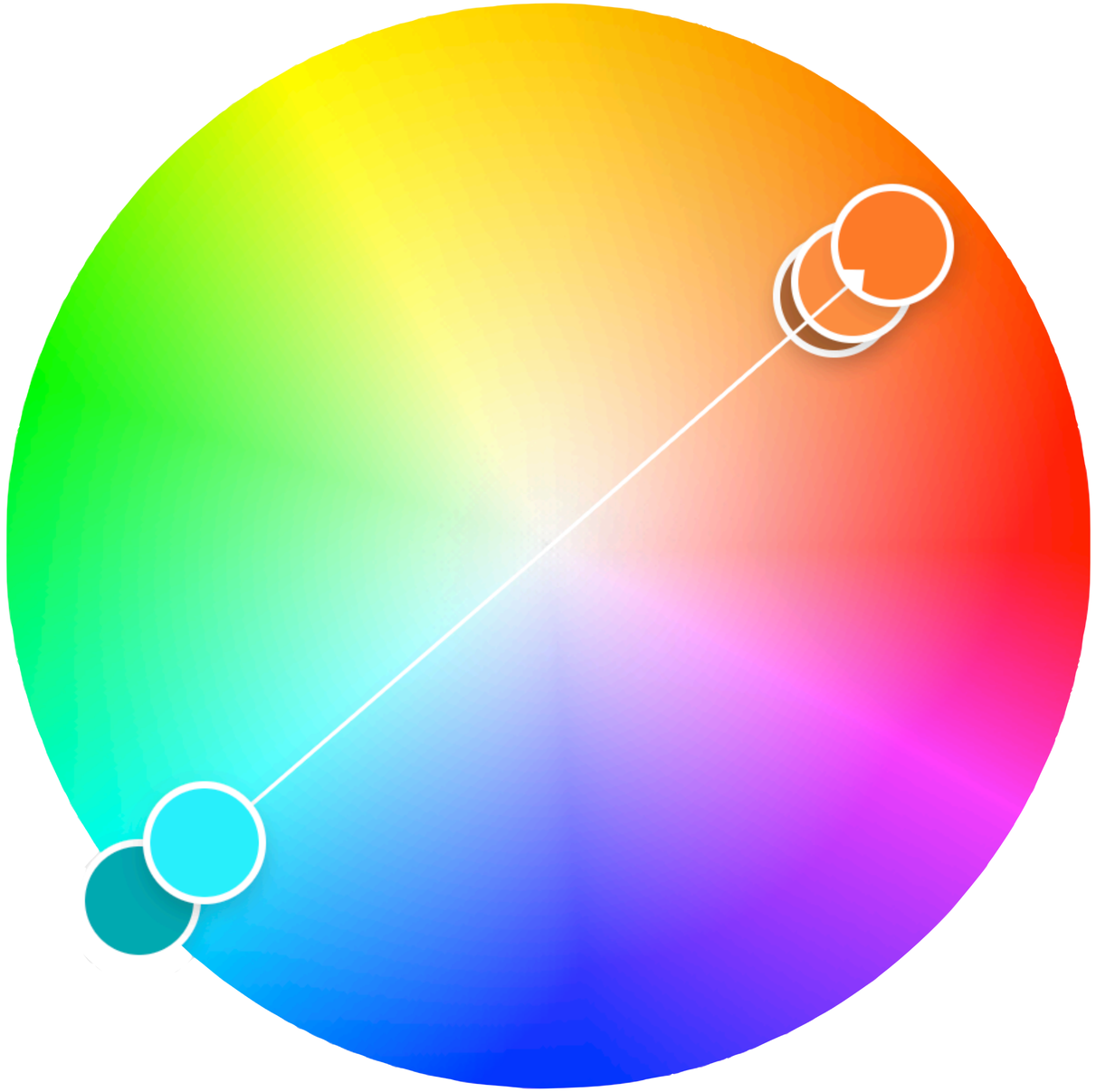
- Write down more than what is asked for. E.g., write down two examples of affordances, when we have just asked for one. (=> **No points for the answers.**)

- Write down the answers in German. 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. :)**)

Week 7: Visual Design



Weight

Which one to use when?

2010-2012
2010–2012
2010—2012

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