

Informatics 134

Software User Interfaces
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Agenda

1. Upcoming

2. Memory and Attention

3. References

Upcoming

Upcoming

- Today:
 - Short lecture
 - Critiques
- Next Week:
 - Week 10!
 - Lecture Tuesday
 - Critiques Thursday

Memory and Attention

Sound familiar?

Go to a different room to get something, but once there, forget why.

Answer the phone or text, can't remember what you were doing beforehand.

Adding numbers, get distracted, must start over.

Humans are easily distracted and their short-term memory is volatile!

Working Memory

Information we attend to in a moment is formed from long term memory
Combined with available information from our perceptual systems forms
working memory

Much of what we do manipulate a UI is done with working memory

e.g., goals, numbers, words, names, sounds, images, odors...

Working Memory

Capacity of working memory is described in units of attention

We build units of attention through features (or details) of a particular item

The more attention paid to an item, the greater the feature set remembered

Working Memory

When focus of attention shifts to new items or information, some of what was previously focused on is lost

We observe this phenomena with both items (objects) and goals



[Wikipedia, 2024]

Look again. What has changed?



[Wikipedia, 2024]

Good UI design should seek to support short term memory.

Examples?

Memory and Attention

Item	Design A		Design B		Design C	
	Cut	Paste	Cut	Paste	Cut	Paste
Text	CTRL+X	CTRL+V	CTRL+X	CTRL+V	CTRL+X	CTRL+V
Sketch	CTRL+X	CTRL+V	CTRL+C	CTRL+P	CTRL+X	CTRL+V
Table	CTRL+X	CTRL+V	CTRL+Z	CTRL+Y	CTRL+X	CTRL+V
Image	CTRL+X	CTRL+V	CTRL+M	CTRL+N	CTRL+X	CTRL+V
Video	CTRL+X	CTRL+V	CTRL+Q	CTRL+R	CTRL+Q	CTRL+R

[Johnson, 2020]

Supporting User Memory

Consistency in operations translates to fewer actions for users to learn (similar commands)

Let users control *how* they remember (custom questions)

Visual cues for current operation (breadcrumbs, search criteria, history)

Optional guidance and/or instruction

**Humans are great at *recognition*, but pretty terrible at
*recall***

Supporting Recognition Over Recall

"See and select" instead of "recall and type"

- Menu text and keyboard shortcuts



- Pictures and iconography to convey function (representative thumbnails, familiar icons)

- Emphasize commonly used features before others

How are you managing memory and attention in your UI?

References

References i

-  Johnson, J. (2020).
Designing with the mind in mind: simple guide to understanding user interface design guidelines.
Morgan Kaufmann.
-  Wikipedia (2024).
File:globe and high court (spot the difference).jpg.