Comp 341/441 - Human-Computer Interface Design

Spring Semester 2017 - Week 5

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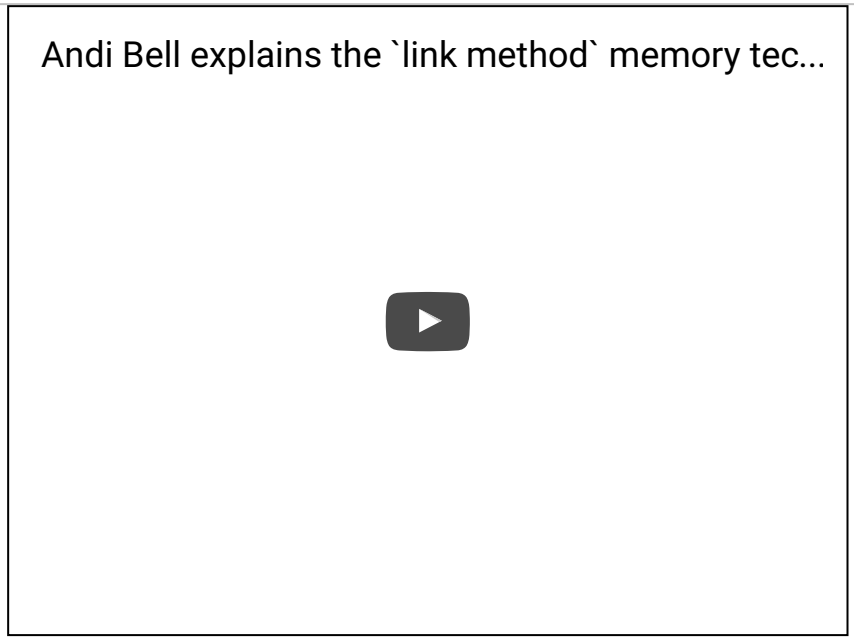
Video - Human memory

improving memory



Andi Bell explains the 'link method' memory technique
Source - YouTube

Video - Human memory

Sherlock Holmes' Mind Palace trick

Source - Critical Commons

Human memory

our brain forgets

- less frequently accessed chunks of information or skill processes
  - *more likely to be forgotten*
  - *natural aspect of our brain's memory structure*
- **recency effect** tends to protect daily routines...
- older facts more easily become hazy or unclear
- loss of long-term information is not universal
- highly developed motor & cognitive skills with sense of easy repetition
- some things are simply like **riding a bike**

Video - Human memory

Ten Second Tom

Ten Second Tom from 50 First Dates

Source - YouTube

Design for Memory

design considerations - part 1

- ensure interface is designed to reduce or eliminate need to memorise and recall
  - *interface elements etc within structure*
- Don Norman outlines this concept as the notion of
  - ***knowledge in the world*** *vs* ***knowledge in the head***
- eg: creating menus or lists of options for users is a good example of
  - ***knowledge in the world***
- user will be able to view the menu, read and recognise options, make selection
  - *no need to recall or memorise related information beyond the basics...*
- this same option on the command line requires memory of command...
  - *user would need to recall* ***knowledge in the head***
  - *increases potential for error and application issues*

Design for Memory

design considerations - part 2

- we can guide users through sequenced tasks
  - *provision of defined sequence of steps*
  - *guide user through the task flow step by step*
- present forms and controls in a logical and sequential order
- might even consider a **wizard** style interface
  - *user can navigate multiple pages with standard **next** & **previous** links*
- trying to reduce the amount of navigation details required by the user
- thereby reducing the amount the user needs to memorise and recall

Design for Memory

design considerations - part 3

- interface design enhanced with recognisable icons and names
  - *user can easily find interface elements as they scan a list, menu...*
- icons can act as clarifying elements
  - *icons should represent concrete and recognisable things*
- goal is to make it easier for users to create hooks from working to long-term memory
- user should not have to memorise or struggle to recognise unfamiliar icons
  - *defeats the point of using simpler graphical representations*
- if you use abstract, original icons then add some accompanying text to help the user

Design for Memory

design considerations - part 4

- naming schemes & patterns in UIs are also important
  - *helps users remember & recall information*
  - *arbitrary names are harder to recall than representative names*
- non-representative naming schemes may add to user's cognitive burden
- command line interfaces violate this principle on a regular basis
  - *consider Unix commands **more** & **less***

Design for Memory

design considerations - part 5

- good help system and search tool
  - *allows a user to quickly check and recall lost or forgotten information*
  - *user can quickly reference documentation, check usage pattern or concept...*
- in search and index systems
  - *allow users to use variations, synonyms*
  - *user may not remember the exact term, query, spelling...*
- try to avoid personalised terminology for standard UI elements, interaction concepts
- try to avoid using abbreviations or acronyms unless they are obvious or standard practice
  - *eg: **GUI**, **WYSIWYG** are well known examples...*
- be consistent in your UIs application of actions and methods
  - *eg: an action should perform in the same manner from one context to another*

References

- Norman, D. *The Design of Everyday Things*. Basic Books. 2013.