Supporting Effective User Navigation in Digital Documents

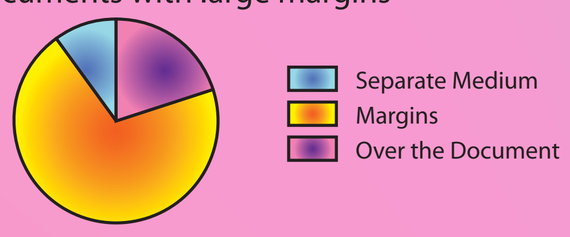
ANNOTATIONS

Physical vs Digital

- Where do people annotate on paper documents?
  - Over the document itself?
  - In the margins of a document?
  - On a seperate medium?
- How can we improve the digital annotation process?

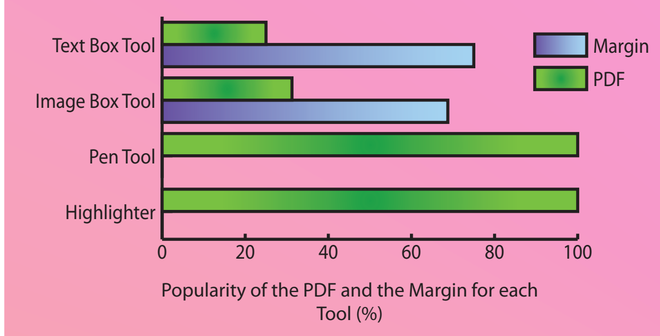
Paper Study

- Comparison of annotation on documents with no margin versus documents with large margins



Digital Study

- Comparison of annotation on the PDF itself and on the margin space surrounding it



Popularity of the PDF and the Margin for each Tool (%)

Some tools are best suited to the margin whereas others are best suited to the PDF

Suggests: Margins are a useful addition to marking up the PDF as opposed to a straightforward alternative.

Publication: *Improving Annotations in Digital Documents*: ECDL 2009 (European Conference for Digital Libraries)

Margin Annotation System

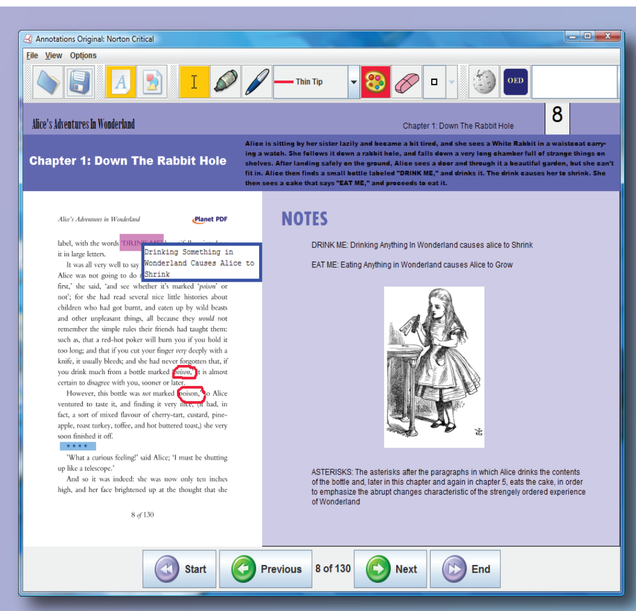
- Builds on results from paper study
- Digital documents are surrounded by an expandable 'margin' area
- Annotation files are saved independently of PDFs
- Contains two sets of drawing tools:

PDF Tools

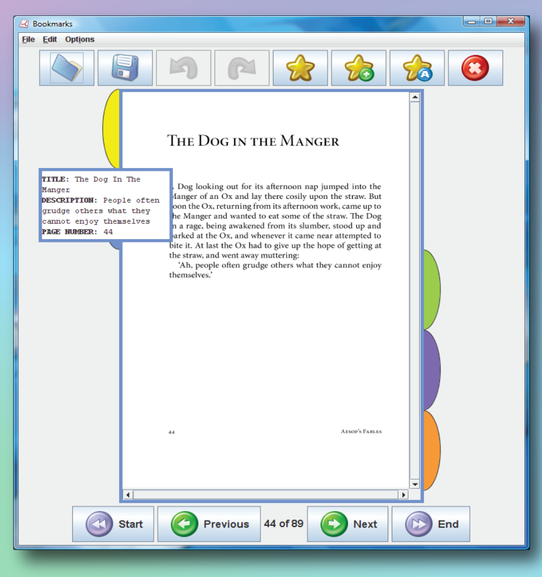
- Highlighter Tool
- Pen Tool
- Eraser Tool

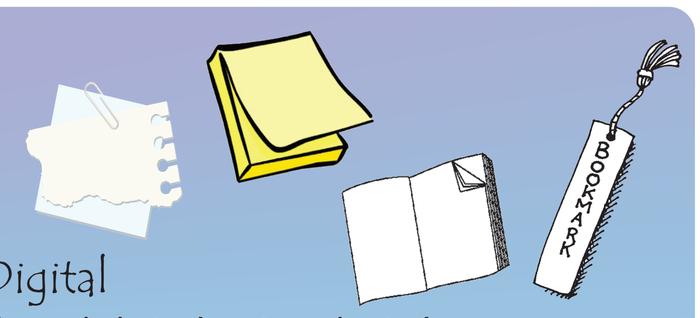
Margin Tools

- Text Box Tool
- Image Box Tool



PLACEHOLDERS





Physical vs Digital

- How do people mark their place in a physical document?
- Will a visual method increase placeholder useage in digital documents?

Visual Bookmarking System

- Visual solution uses coloured 'tabs' that mimic bookmarks sticking out of the page
- Telephone directory style
- Light-weight mouse-overs to give a clear overview of details of each placeholder

Comparison Study

- Compares the visual system with two other digital placeholding methods: ordered list and un-ordered menu

Publication: *Improving Placeholders in Digital Documents*: ECDL 2008 (European Conference for Digital Libraries) - Winner of Best Paper

VISUAL INDEXING

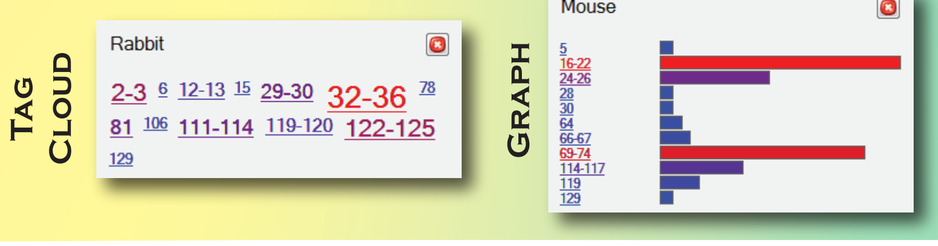
Linear Searching (Ctrl+f)

- How fast is it to locate relevant sections of a document using linear search?
- How useful is linear search in providing an overview of word occurrences in a document?
- Are indexes a more efficient method of locating sections of a document?

Visual Index System

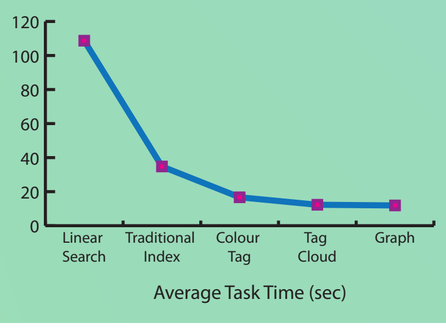
- Combines keyword search with traditional indexing to create a custom index builder based on user-defined keyword(s)
- Clusters occurrence hits: **e.g. 113-120**
- Uses size and colour to aid visualisation of keyword occurrences

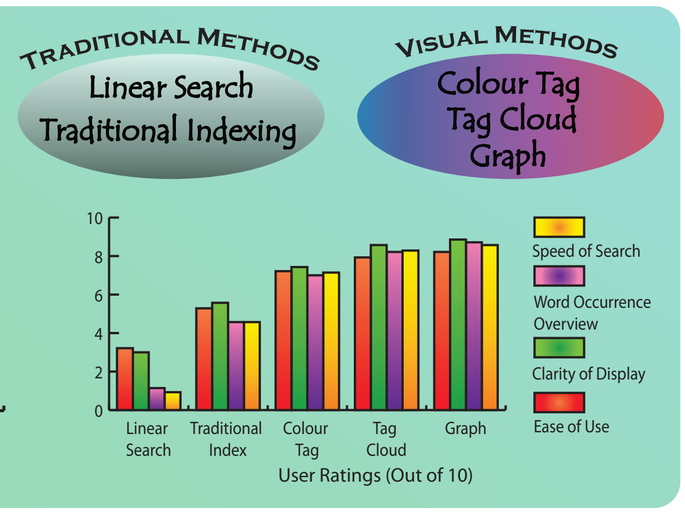
Publication: *Creating Visualisations for Digital Document Indexing*: ECDL 2009 (European Conference for Digital Libraries)



Comparison Study

- Directly comparing five distinct methods:





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