

Trending Words in Navigation History for Term Cloud-based Navigation

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Nowadays, the amount of information available on the Web is making navigation difficult. Many approaches leave users to rely solely on the results list provided by the keyword-based search engines. Thus, over the past years several novel approaches were presented as an alternative solution to navigation support in search engines, such as tag clouds. Tag clouds focus mainly on exploiting different visual features of words like font size, colour or justification to emphasize their relevance. A tag cloud usually consists of keywords extracted from documents or user-added tags that represent documents on more abstract level. Tag clouds not only represent documents, but they also serve as a navigation tool. By employing visual features of tag clouds we aid user's navigation with the knowledge of how large is the information space behind the specific word or how the word is relevant to a user's current context. The navigation support provides the users a convenient way to refine their queries and discover new topics that are similar to their information need.

Gwizdka, et al. [1] introduced a novel method for tag cloud navigation by taking history into account. Their approach used pivot browsing, so in each step of navigation content of a tag cloud is adapted to a current user's query. By highlighting co-occurrences of tags authors demonstrated coherence in navigation and similarities between the words in the user's query, but their enhancement was used only for purpose of visualization of user's current navigation history.

We proposed a method for term cloud navigation which exploits navigation history as a source of metadata for personalized browsing of information. By using this approach we utilize the users' interests in specific period of time to personalize their navigation in the domain.

In order to represent documents, we choose to use tags created as folksonomies and keywords extracted from documents which we both denote as terms. The relevancy of a term is determined according to the number of times the term occurs in documents specified by the query (the sequence of words selected by user).

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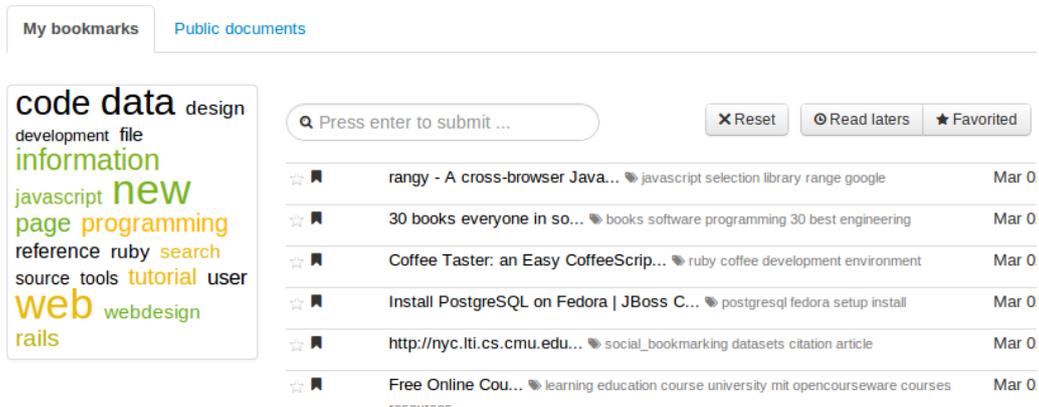


Figure 1 Prototype of cloud our navigation in Annota.

History records from a specific period of time are used for adapting the content of a cloud by choosing similar queries that the user navigated within the particular period of time. By exploiting user's history, we provide query refinement that helps users to customize their last query with words already used in the specific period of time. Our approach for visualization of history in a cloud exploits the time of the last usage of the words from cloud in user's queries by different color according to last time of usage as shown in Figure 1.

Our contribution towards cloud navigation is in exploitation of history in a period of time to provide personalized content of term cloud with color-based visualization of history. We extend the content of term cloud with words that are similar to current user's query by exploiting queries from history containing the words from current query. The different shades of colors distinguish last usage of word in history relative to the current query.

We evaluate our approach in the domain of digital libraries. We implemented our proposal as a module into a system for web page annotating – Annota [2], which is being developed by several PeWe group members (annota.fiit.stuba.sk).

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