Research Question: How to preserve and present context and history while navigating web resources that are described by tags?

Introduction
- Web 2.0 social tagging websites include tag clouds.
- E.g., delicious.com, flickr.com, technorati.com, youtube.com
- Users, web resources, and tags become associated with each other in the process of collaborative tagging.
- Tags and user ids are used for navigation by pivot browsing.

Observations & Motivation
- Current social tagging systems treat tags as discrete, independent entities.
- However, user-generated tags are part of a social and mental process in which relationships can be present.

Research Goals
- Essential idea is to incorporate tag dependencies and relationships and make them explicit to the user.
- Create an interface to support the users’ search/browsing tasks.
- Create a history trail when navigating using tags.
- Present contextual information about navigation history and explored web-resources that were tagged.

Navigation by pivot browsing
(Example: CitEULike.org)
Each click on a tag brings the user to a new list of web resources and shows a different tag cloud, i.e., the context is switched.

Navigation using Tag Trails interface
Each click on a tag brings the user to a new list of web resources and shows a new tag cloud, while keeping clouds associated with previously seen web resources, i.e., the context and history is preserved.

Tag Cloud Based Navigation
A tag cloud may be shown next to a list of resources to represent words associated by a website user with these resources. A tag cloud may be shown next to a user name to represent tags most frequently employed by this user. In both cases, the words in the tag cloud typically serve as links that can be followed to obtain a new view of the associations among the users/resources/tags. Navigation by following tags has been called pivot browsing.

Tag Trails Features (v2)
- Tag cloud (document set) relationships: Tags from recent clouds are highlighted in the results list by underlining document tags. The most recent color is used.
- Differences between the clouds are shown by displaying tags unique to that cloud in a distinct color.
- Tag co-occurrences among the recent clouds are shown in a heatmap.
- Navigation history: History is preserved by displaying multiple tag clouds. Navigation steps are color coded. Recently navigated tags are highlighted across clouds by using the navigation step color.
- Filtering results: Results list can be narrowed down by applying filters (document tags).
- Navigation mechanism: Click or type a tag.

Summary and Recommendations
- We believe that preserving navigation and exploration history is useful to a user.
- When displaying multiple tag clouds, color context visually represents connections between clouds.
- The technique is applicable to sites that use tag clouds and pivot browsing (e.g., CitEULike.org).

Future Work
- Presented prototype interface is based on several assumptions that need to be tested with users.
- We plan to conduct user studies, including an eye-tracking study.
- We plan to create other alternative versions of the prototype to explore different sizes of historical clouds and different ways of encoding context.