

## Interactive Tag Cloud Visualization of Software: Version Control Repositories

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### Abstract:

Version control repositories contain a wealth of implicit information that can be used to answer many questions about a project's development process. However, this information is not directly accessible in the version control archives and must be extracted and visualized. This paper describes ConceptCloud, a flexible, interactive browser for SVN and Git repositories. The main novelty of our approach is the combination of an intuitive tag cloud visualization with an underlying concept lattice that provides a formal structure for navigation. ConceptCloud supports concurrent navigation in multiple linked but individually customizable tag clouds, which allows for multi-faceted repository browsing and for the construction of unique visualizations. We describe the mathematical foundations and implementation of our approach, and use ConceptCloud to quickly gain insight into the team structure and development process of two projects.