Distributed Wiki on top of Git for inter-project knowledge sharing targeting software developers as users

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Intro

Enforcing knowledge consistency in an environment of frequent changes to data such as requirements or design documents that can be observed during the development of a software product is still an area seeing plenty of attention and financial investment. One of the approaches taken by some organizations that can be seen as sufficiently efficient for a single project is to store all documentation and design documents in the same git repository that is used for the developed software. Whether this approach is successful for that single repository depends on factors such as the provided tools checking the consistency and the developers' discipline in keeping the documentation up to date. The task becomes more difficult when consistency has to be enforced between multiple projects which may be managed by multiple teams. In such a case there is no single version control system that would synchronize the knowledge base with each of the code bases. For many use cases, a separate centralized solution might be sufficient but for those that need to enforce at least a referential integrity of links between multiple git repositories, there is no open tooling to support it. The goal of the thesis is to research the possibility of developing tools composing a distributed wiki system that could be used by software developers working on multiple git repositories to create links between those repositories that would maintain referential integrity in a version-conscious manner.

Goals

Design and implement a protocol for a distributed wiki using git (libgit2) for version control and evaluate its suitability for use in organizations that work on their projects using multiple git repositories and need to share as well as synchronize some knowledge between those projects. The application (implementation) should be approachable to software developers and integrate well with their daily workflow which includes frequent use of git. Hyperlinks to content related to another repository in the system should be verified by the provided tooling.

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Bibliography