

Topic (short version): Cloud-enable JabRef

Topic (long version): Reference Management in the Cloud – Migrate the popular open source reference manager JabRef from a desktop version to a web application

Context:

Reference management is a crucial task for many parties involved in higher education and research: Researchers manage their personal reference lists and lists for the papers they write, publishers manage the bibliographic items they own, and also university libraries manage the items they own and the ones that are published at their institution. Due to the sheer size of the data, people need tool support for reference management.

Today, there are many reference managers out there and one of them is JabRef (www.jabref.org). It is an open source and free reference manager implemented in Java that is immensely popular in the academic world, with tens of thousands of downloads each month world-wide. The advisor of this thesis, Jörg Lenhard, is one of the core developers of JabRef.

Task:

Currently, JabRef is implemented as a stand-alone desktop application with limited support for collaboration among different users. The JabRef development team wants to move to a web application that enables users to jointly work on bibliographic data. The goal is to emulate similar web applications for joint paper writing, such as ShareLatex. The task for this thesis is to develop a first prototype of the web application. The candidate will have to:

- Compare Java web frameworks, such as Play 2, Spark, or Spring MVC and select one of them for implementing the prototype
- Analyze the current features of JabRef and build a prioritized list for the migration
- Migrate a subset of the current features following an agile methodology with short sprints

Since JabRef is open source, the prototype will also become open source and the candidate will get publicly visible credit for that. This requires communication with the JabRef development team via github.

Requirements:

The candidate must have:

- Good programming skills, in particular in Java and the ability to understand other people's code
- The ability to learn new technologies and frameworks
- Social skills and the ability to speak and write in English

Helpful skills (but not required):

- Experience with web app development and web frameworks, in particular for the Java ecosystem
- Experience with github and open source software development
- Experience with reference managers and BibTeX data, in particular with JabRef