Stakeholders

Acquirers and users (including organizations)

- Universities (Such as Melbourne University[1], University of Saskatchewan[2])
- Researchers
- Writers
- Students
- … etc.

A detailed analysis[3] shows that Jabref is mostly used by professionals in the Engineering field followed by the medicinal field.

Suppliers

- Oracle (JabRef runs on any system with Java 8 or newer installed)

Key Developers

Here are the core developers[4] for JabRef. Any pull request needs to be approved by one of the following developers.

Oliver Kopp (since 2011)
Jörg Lenhard (since 2015)
Stefan Kolb (since 2015)
Matthias Geiger (since 2015)
Tobias Diez (since 2015)
Christoph Schwentker (since 2016)
Linus Dietz (since 2017)
Carl Christian Snethlage (since 2020)

Below are the top 10 contributors[5] who have made over 100 commits to the JabRef project.

koppor (1891 commits)
tobiasdiez (1062 commits)
stefan-kolb (906 commits)
Siedlerchr (905 commits)
oscargus (882 commits)
simonharrer (836 commits)
lenhard (717 commits)
matthiasgeiger (346 commits)
LinusDietz (251 commits)
mortenalver (196 commits)

Functionality

- Overall domain

JabRef is an open source reference management application for research and educational use.

- Essential functional aspects

Cite:

JabRef supports BibTex and Biblatex, which are both universal formats for managing Bibliographies. Cite-as-you-write functionality for external applications such as Emacs, Kile, LyX, Texmaker, TeXstudio, Vim and WinEdt. Thousands of format references are provided in JabRef or you can create your own style. Besides, Word and LibreOffice/OpenOffice for inserting and formatting citations is also supported.

Share:

JabRef contains multiple build-in export options. Library is saved as a simple text file and thus it is easy to share with others via Dropbox and is version-control friendly. Users could easily synchronize the contents of their library via a SQL database when working in a team. JabRef automatically notifies the user if it recognizes a change in the bib file on the disk while sharing a Bib(La)Tex database[6].

Automatic Key Generation:

BibTex keys are generated uniquely depending on the entry details such as Author's name, title and year.

- Essential non-functional aspects

Usability:

Since JabRef is a GUI-based desktop application, we first examine the UI part of the system in terms of learnability and efficiency. The layout of this application is clearly divided into several parts such as the main table, search panel, entry editor, citation window, and toolbar. There are some UI metaphors that help users quickly identify the associated functionalities. For example, the disk-look icon in the toolbar represents "save" action and the plus sign in the middle represents "add a new article" function. Those UI metaphors are easily interpreted. A floating text will show up for each icon to indicate what the function is when users hold the cursor over it for about a second.

Performance:

Again JabRef has its own UI, so we focus on user-centric performance. We tried a variety of operations of the system such as importing a BibTex file (which takes about 2 seconds), searching resources locally and online (almost instantly) and adding a new article into the database. Generally speaking, these functions are well polished without

errors and less wait time. However, it is noticed that the tab “Related articles” loads information significantly slower than the other operations.

Portability:

As for portability, JabRef could be installed on MacOS, Linux and Windows. Besides, developers are making efforts to localization. The source language is English, but other translations are under progress.

Language	Translated
French	100%
Japanese	98%
German	98%
Spanish	89%
Chinese Simplified	83%

Scalability:

A lot of parts of JabRef are scalable. For example, for the web search function, there are over ten different reference sources, such as Google scholar, ArXiv, DOAJ, etc. The possibility of adding more such sources is high.

- What is unique about the system?
  JabRef is an Open Source Reference Management system. It is a great tool for managing Bibliography. It has unique features like the drag and drop, where it facilitates ***auto generation of Bibliography***. The files generated by Jabref are also compatible with Version Control systems such as GitHub. Unlike BibDesk which is available only on MacOS, JabRef is compatible in Windows, Linux and MacOS. Hence, it is OS independent.

Issues

1. **Add tooltips for all fields in the entry editor #5847 (issue1)**

Since there are several different entry fields in the entry editor, it would be useful, if every field provided some tips when hovering a field or which can be clicked next to the entry field. The tip should provide users with some directions. For example, which type of data should be typed into this field. Or whether this field is required or not.

Possible solution: Add new events to mouse hovering functions. Since other components in JabRef have already realized tooltips function, maybe we can do it in the same way for the entry editor component.

2. **Required fields in entry editor are incomplete #5853 (issue2)**

From the official document of Biblatex format, it stipulates that year or date of the article is required. However, in the editor panel of JabRef, only “year” is shown as a required field for each entry. Based on the official stipulations, this field should be better as “year/date”. Since either year or date completed could meet the requirement of Biblatex.

Possible solution: We think that this issue could be addressed by revising field name, hence it will not be that complicated. Find out where the static strings stored in the source code and revise the field from “year” to “year/date”.

3. **Adds spaces between words for linked files #5889 (issue3)**

When using it in the "Import" section and then right clicking a PDF file and clicking "Rename file to a defined pattern", the resulting PDF name will have spaces between the words in the title. For example, it becomes Assessment peritoneal microbial instead of Assessmentperitonealmicrobial which can be a problem in for applications that don't play well with spaces in filenames.

Possible solution: It seems that something wrong lies in the pattern process functions. In general, it’s about the string process. We could find out the function for dealing with pattern string and try to make some changes to it.

4. **Allow user to specify field type for custom fields #5857 (issue4)**

Increasingly, some people are using bibtex entries not only with an URL field but also with an archived URL field. They have currently set these up manually. Someone wants to suggest that a user could "enable" the pair of archived-url and archival-url-access-date in the preferences and then these behave jabref-wise like any other url/access date pair fields, also allowing to open the URL easily. A more advanced improvement might include to search for archives at the internet archive for the given URL or to create an archive with one click.

Possible solution: This issue is about improvement. Since there is already an URL field, we can add an archived URL field in the same way. The source code of preferences settings are easy to locate and we have already found the source code about fields through the last several homeworks.

5. **Options should be inactive or show Error or Information Box #4795 (issue5)**

‘Push entries to external application(TeXstudio)' option doesn’t work. Nothing happens on clicking this button in the ‘tool’ dropdown list. Some other users would produce an error.

Possible solution: Seems like there is something wrong with the connection between JabRef and external application. We reproduce this error and there is an error message. In this way, we think we can trace the error and try to address this issue.

References

[1] The Library of the Melbourne University, Link, Retrieved 2020-02-19.

[2] Library of University of Saskatchewan, Link, Retrieved 2020-02-19.

[3] JabRef, Link, Retrieved 2020-02-19.

[4] Developers file in JabRef repository, Retrieved 2020-02-17.

[5] Contributors in JabRef, Retrieved 2020-02-17.

[6] JabRef, Link, Retrieved 2020-02-19.

[7] Issues in JabRef, Retrieved 2020-02-17.