Scientific Knowledge and Reference Management with Zotero

Concentrate on research and not re-searching
Agenda

- Motivation
- Idea behind Zotero
- Basic Usage
- Zotero’s Features
- Comparison with other reference management tools
- Usage hints
- Installation & Configuration
- Additional Software Tools
Motivation

Let’s imagine the following situation:
You ...

► work as a scientific researcher (undergraduate, graduate student, PhD, ...)

► just start working on a new subject / research field

► perhaps work in a team and/or have colleagues / superiors knowing more than you (books, papers, websites, etc.)

► need to get a detailed overview about the latest developments in an area

► Your target is to write a scientific report (Diploma / PhD thesis, funding application, ...)

  ► e.g. summarizing and referencing state-of-the-art work,
  ► analyze and learn from existing approaches, etc.
  ► share knowledge with others (e.g. local team, distributed community, ...)
Knowledge and Reference Management

Q: How to efficiently search, evaluate, organize and share information to simplify your research tasks?

A: Use a state-of-the-art scientific reference management software like Zotero

(http://www.zotero.org)
Zotero’s Basic Idea

- Get reference information (BibTeX) directly from websites
  - Gets / creates reference data with a single click
  - Almost all popular websites work (IEEE, Google Scholar, Science, Amazon, etc.)

- The Browser is used as reference manager

- Runs on all platforms Firefox is running

- Uses open formats, open citation styles

- Supports many import and export formats
Zotero‘s Basic Usage

A) Go to a reference website, e.g. www.ub.tum.de, Google Scholar, IEEE Xplore, Amazon, etc.

B) Enter directly a ISBN or DOI code in Zotero

Then, with a single mouse click …

1. Click: import BibTeX data automatically into Zotero
2. Click: annotate, tag, download and index related PDF, etc.
3. Click: assign reference to (multiple) collections
4. Click: go deeper by looking at citing documents or use new search term

…

x. Click:
► update “Group Collections”
► create report about annotations
► export reference data into BibTeX file -> use in LateX
► OR use Zotero data directly with MS Word or OpenOffice plugin
Zotero’s Features* - Search, Evaluate and Organize

- Automatically import BibTeX data from various sources e.g. scientific websites, ISBN, DOI, etc.

- Attach all kind of files: PDFs, snapshots of web pages, images, etc.

- Full-text indexing and meta data analysis of PDFs

- Organize references with collections and tags

- Annotate items with text and images

- Advanced search and data mining tools

- Large variety of import/export options, supports for many bibliographic styles (BibTeX, EndNote, RIS, RDF, MODS, etc.)

*Current Zotero version 2.0x Beta
Zotero‘s Features - Installation and Usage

- Available as Firefox 3.0 Plugin for many operating systems

- 1 Click installation

- Zotero is open source software and extensible

- Available > 30 languages

- Plugins for MS Word and OpenOffice (Citation + Bibliography creation)
Zotero’s Features - Collaboration

- Sync your ref library with multiple computers (via Zotero website + WebDAV server)

- Support for Group Libraries (is under active development)
  - **Current possible use case:** share useful refs with others rather than having a common repository

- Support for private (invited members only, content not visible on Zotero website) and open groups

- Share references, documents, annotations and tags within a group (up to now missing: duplication detection, item synchronization over multiple libraries)
## Reference Manager Software Comparison

<table>
<thead>
<tr>
<th>Name</th>
<th>Import / Export Functions</th>
<th>Multiple OS</th>
<th>Collaboration Functions</th>
<th>Open Source</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>EndNote</td>
<td>+++</td>
<td>Win, Mac</td>
<td>-</td>
<td>N</td>
<td>not for Linux!</td>
</tr>
<tr>
<td>Jabref</td>
<td>+</td>
<td>Win, Mac, Linux</td>
<td>-</td>
<td>Y</td>
<td>almost no functionality for reference organization</td>
</tr>
<tr>
<td>Mendeley</td>
<td>+</td>
<td>Win, Mac, Linux</td>
<td>++</td>
<td>N</td>
<td>Improving fast, but not Open Source</td>
</tr>
<tr>
<td>Papers</td>
<td>+++</td>
<td>Mac only</td>
<td>-</td>
<td>N</td>
<td>Only for Mac and iPhone</td>
</tr>
<tr>
<td>Zotero</td>
<td>++</td>
<td>All OS supp. by Firefox 3.0</td>
<td>++</td>
<td>Y</td>
<td>Improving fast, overall the best compromise!</td>
</tr>
</tbody>
</table>

Further information see:  
Usage Hints

Searching and Organization
► Collections and sub-collections
  ► Structure knowledge logically in tree-form
  ► Ref can be in multiple collections at the same time
    (Attention for drag&drop: by default, refs are copied, not moved!)
  ► Deleting a ref from collection doesn't delete ref

► Use Tags to
  ► assign additional search keywords to refs, notes, attachments
  ► Evaluate / rate refs (use personalized Tags in groups!)

► Use “Saved Searches” as dynamic collections
Usage of Group Libraries

► Requires user account registration at zotero.org
  ► Pay attention to the account’s privacy settings
  ► Create your own group library or become member of an existing
  ► Limited Internet storage space for document sharing (free: 100 MB)

► Tags can be used for rating
  ► Proposal to use personal tags for rating within a team,
    e.g. “rothe_***” or “rothe_*****” (you can filter based on these tags)

► Important: consistent language usage for collection names, annotations and tags

► Current drawbacks, NO support for …
  ► synchronization of group collections with items in “My Library”
  ► “saved searches” in group libraries
General Usage Hints

► Google Scholar: save setting to show BibTeX link per search result
(http://scholar.google.de/scholar_preferences)

► Keep language of tags, notes and collection names consistent, e.g. all in English

► Search queries don’t work on multiple libraries at the same time!
  -> Pay attention to the currently highlighted collection name
Installation for Win, MacOS, Linux

1. Download + Install Firefox:  http://www.mozilla.com
2. Start Firefox
3. Download + Install Zotero 2.x:  http://www.zotero.org
4. Restart Firefox, start using Zotero (click on bottom right of Firefox window or Strg+Alt+Z)
5. Configure Zotero (Preferences… Menu), activate PDF indexing, …
Zotero Configuration

- OpenURL Resolver Configuration for TUM: [http://sfx.bib-bvb.de/sfx_tum](http://sfx.bib-bvb.de/sfx_tum)
  - Directly order a book from the local library
  - Access electronic media (via TUM proxy)
Nothing is perfect…Zotero is under active development

- No global search feature: private and group collections need to be searched individually

- No checking for duplicates (feature should be available soon)

- Currently Zotero Server source code is not available
  - No own Zotero server, e.g. for chair or whole TUM can be created, due to potential privacy issues

- No integration of Firefox’s search field with Zotero database
Further useful Software Tools

Annotate PDFs

- Windows: PDF-XCHANGE VIEWER
  http://www.docu-track.com/downloads/users/

- Linux: Xjournal

- Useful Zotero Plugins: http://www.zotero.org/support/plugins

General: searching/indexing of PDF text annotations is currently not possible within Zotero.
Thank you very much for your attention!

Find more information here: http://www.zotero.org