Bibliography formatting with citation-style-language

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1 Introduction

The Citation Style Language[1] (CSL) is an XML-based language that defines the formats of citations and bibliography. There are currently thousands of styles in CSL including the most widely used APA, Chicago, Vancouver, etc. The citation-style-language package is aimed to provide another reference formatting method for LaTeX that utilizes the CSL styles. It contains a citation processor implemented in pure Lua (citeproc-lua) which reads bibliographic metadata and performs sorting and formatting on both citations and bibliography according to the selected CSL style. A LaTeX package (`citation-style-language.sty`) is provided to communicate with the processor.

Note that this project is in early development stage and some features of CSL are not implemented yet. Comments, suggestions, and bug reports are welcome.

2 Installation

This package is available from TeX Live 2022 or later versions. For most users, the easiest way is to install it via `tlmgr`. If you want to install the GitHub develop version of this package, you may follow the steps below.

The citation-style-language requires the following packages: filehook, l3kernel, l3packages, lua-uca, lualibs, luatex, luaxml, and url. l3build is also required for actually performing the installation. Make sure they are already installed in the TeX distribution.

```
git clone https://github.com/zepinglee/citeproc-lua  # Clone the repository
cd citeproc-lua
git submodule update --init --remote                 # Fetch submodules
l3build install
```

These commands install the package files to `TEXMFHOME` which is usually `~/texmf` on Linux or `~/Library/texmf` on macOS. Besides, the `citeproc-lua` executable needs to be copied to some directory in the `PATH` environmental variable so that it can be called directly in the shell. For example provided `~/bin` is in `PATH`:

```
cp citeproc/citeproc-lua.lua "~/bin/citeproc-lua"
```

To uninstall the package from `TEXMFHOME`, just run `l3build uninstall`.

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[1]https://citationstyles.org/

3 Getting started

An example of using citation-style-language package is as follows.

```
\documentclass{...}
\usepackage{citation-style-language}
\cslsetup{
  style = ...,
  ...
}
\addbibresource{bibfile.json}
\begin{document}
\cite{...}
...
\printbibliography
\end{document}
```

The procedure to compile the document is different across engines.

LuaTeX The CSL processor is written in Lua and it can be run directly in LuaTeX without the need of running external programs. For LuaTeX, the compiling procedure is simply running `latex` twice, which is the same as documents with cross references.

Other engines For engines other than LuaTeX, the `citeproc-lua` executable is required to run on the `.aux` file to generate the citations and bibliography. The general procedure is similar to the traditional BibTeX workflow.

1. Run `latex` on `example.tex`.

2. Run `citeproc-lua` on `example.aux`. The engine reads the `.csl` style, CSL locale files, and `.bib` database and then writes the processed citations and bibliography to `example.bbl`.

3. Run `latex` on `example.tex`. The `.bbl` file is loaded and all the citations and bibliography are printed.

4 Package commands

`\cslsetup` \cslsetup{⟨*options*⟩}

Package options may be set when the package is loaded or at any later stage with the \cslsetup command. These two methods are equivalent.

```
\usepackage[style = apa]{citation-style-langugage}
% OR
\usepackage{citation-style-langugage}
\cslsetup{style = apa}
```

style The `style=⟨style-id⟩` option selects the style file `⟨style-id⟩.csl` for both citations and bibliography. The implemented CSL style files are available in the official GitHub repository[2] as well as the Zotero style repository[3]. The user may search and download the `.csl` file to the working directory. The following styles are distributed within the package and each of them can be directly loaded without downloading.

american-chemical-society American Chemical Society

american-medical-association American Medical Association 11th edition

american-political-science-association American Political Science Association

american-sociological-association American Sociological Association 6th edition

apa American Psychological Association 7th edition

chicago-author-date Chicago Manual of Style 17th edition (author-date)

chicago-fullnote-bibliography Chicago Manual of Style 17th edition (full note)

chicago-note-bibliography Chicago Manual of Style 17th edition (note)

elsevier-harvard Elsevier - Harvard (with titles)

harvard-cite-them-right Cite Them Right 11th edition - Harvard

ieee IEEE

modern-humanities-research-association Modern Humanities Research Association 3rd edition (note with bibliography)

modern-language-association Modern Language Association 9th edition

nature Nature

vancouver Vancouver

locale The `locale` option receives an ISO 639-1 two-letter language code (e.g., "en", "zh"), optionally with a two-letter locale code (e.g., "de-DE", "de-AT"). This option affects sorting of the entries and the output of dates, numbers, and terms (e.g., "et al."). It may also be set `auto` (default) and the `default-locale` attribute in the CSL style file will be used. The locale falls back to "en" (English) if the attribute is not set. When babel package is loaded, the selected main language is implicitly set as the `locale` for citation-style-language.

bib-font Usually, the list of references is printed in the same font style and size as the main text. The `bib-font` option is used to set different formats in the `thebibliography` environment. It may override the `line-spacing` attribute configured in the CSL style. For example, to force double-spacing in the bibliography:

```
\cslsetup{bib-font = \linespread{2}\selectfont}
```

bib-item-sep The vertical space between entries in the bibliography is configured in the CSL style. It can be overridden by this `bib-item-sep` option. It is recommended to set `bib-item-sep` to a stretchable glue rather than a fixed length to help reducing page breaks in the middle of an entry.

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[2]https://github.com/citation-style-language/styles
[3]https://www.zotero.org/styles

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Table 1: The locators supported in CSL v1.0.2.

act	folio	section
appendix	issue	sub-verbo
article	line	supplement
book	note	table
canon	opus	timestamp
chapter	page	title
column	paragraph	verse
elocation	part	version
equation	rule	volume
figure	scene	

```
\cslsetup{bib-item-sep = 8 pt plus 4 pt minus 2 pt}
```

bib-hang   The `bib-hang` option sets the hanging indentation length which is usually used for author-date style references. By default, it is 1 em (with respect to the `bib-font` size if set).

bib-par-indent   The paragraph indentation of references if they are in normal paragraph style rather than labelled or hanging indented. By default, it is the `\parindent` at when printed out.

\addbibresource   \addbibresource{⟨*resource*⟩}

The \addbibresource command loads bibliographic data from ⟨*resource*⟩ file. CSL-JSON is the preferred format especially when the data is exported from a reference manager like Zotero. Other formats like CSL-YAML and Bib(La)TeX (for compatibility) are also supported but they need to be converted to CSL-JSON for internal processing. Note that the files must be specified with their extension names and the content should be encoded in UTF-8.

```
\addbibresource{file1.json}
\addbibresource{file2.yaml, file3.bib}
```

\cite   \cite[⟨*options*⟩]{⟨*keys*⟩}

prefix   The citation command is similar to the one in standard LaTeX except that the ⟨*options*⟩ is in key-value style. The ⟨*options*⟩ can be `prefix`, `suffix` or one of lo-
suffix   cators like `page` or `figure`. The full list of supported locators is detailed in Table 1. An
page   example is as follows.

figure
```
\cite[prefix = {See }, page = 42]{ITEM-1}
```

The traditional form \cite[⟨*prenote*⟩][⟨*postnote*⟩]{⟨*keys*⟩} introduced in natbib and biblatex is also supported but not recommended. If only one optional argument is provided, it is treated as ⟨*postnote*⟩. The ⟨*postnote*⟩ is used as a page locator if it consists of only digits.

\parencite   \parencite[⟨*options*⟩]{⟨*keys*⟩}
\citep

The \parencite and \citep command are aliases of \cite. They are added for compatibility with biblatex and natbib packages. If the citation format defined in the CSL style does not have affixes, these commands in citation-style-language do not enclose the output with brackets, which is different from other packages.

`\textcite`
`\citet`

`\textcite[⟨options⟩]{⟨keys⟩}`

`infix` These commands proceduce narrative in-text citation where the author name is part of the running text followed by the year in parentheses. These commands only work with author-date styles. An extra option `infix` can be given to specify the text inserted between then author and year parts. For example, "Kesey's early work (1962)" can be produced by `\textcite[infix={'s early work}]{ITEM-1}`. By default the infix is a space.

`\cites` `\cites[⟨options⟩]{⟨key⟩}...[options]{⟨key⟩}`

The `\cites` accepts multiple cite items in a single citation. This command scans greedily for arguments and a following bracket may be mistakenly recognized as a delimiter. To prevent this, an explicit `\relax` command is required to terminate the scanning process. The following example illustrates its usage.

```
\cites[prefix = {See }, page = 6]{key1}[section = 2.3]{key2}\relax [Text]
```

`\citeauthor` `\citeauthor{⟨key⟩}`

This command prints the author name. If the orginal citation does not contain the author name (e.g., a numeric style), an optional `<intext>` element can be suppplied as a sibling to the `<citation>` and `<bibliography>` elements in the CSL style (see citeproc-js's documentation for details).

`\nocite` `\nocite{⟨keys⟩}`

This command produces no output but makes the entries included in the bibliography, which is the same in standard LaTeX. If the special key * is given (`\notecite{*}`), all the entries in the database are included.

`\printbibliography` `\printbibliography[⟨options⟩]`

This command prints the reference list. Currently no options are available.

5 Compatibility with other packages

babel The main language set by babel is used as the locale for citation-style-language. In general, babel is supposed to be loaded before citation-style-language.

beamer Most of this package's features work fine with beamer except the `backref` option. At the moment this can be addressed with hyperref's `backref` option.

hyperref When hyperref is loaded, the DOIs, PMIDs, and PMCIDs are correctly rendered as hyperlinks.

Incompatible packages The following packages are not compatible with citation-style-language. An error will be triggered if any of them is loaded together with citation-style-language.

- babelbib

- backref

- biblatex

- bibtopic

- bibunits

- chapterbib

- cite

- citeref

- inlinebib

- jurabib

- mcite

- mciteplus

- multibib

- natbib

- splitbib

6 To-do list

The citation-style-language package is in early development stage and some features may not work as expected. Bug report are welcome at the GitHub issue tracker [4]. The following is a list of features to be implemented. If you need any of them or new features, please post a issue to let me know so that I can give it a priority.

- The citeproc-lua engine has not passed all the fixures from the CSL standard test-suite. The skipped fixures are lists in citeproc-test-skip.txt and they need to be handled (though less than 6% of test-suite).

- The Unicode sorting method is provided by lua-uca package and CJK scripts are not supported so far.

- Citation commands that capitalize the first letter (\Cite, \Textcite, etc.).

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[4] https://github.com/zepinglee/citeproc-lua/issues

- Back references: page numbers of the citations appears after the entry item in bibliography (even without the hyperref).

- \footcite command.

- \cite in a footnote should work as in-text citations (similar to \smartcite).

- CSL-YAML support.

- Multiple bibliographies in a document like chapterbib package or refsection and refsegment options in biblatex.

- Journal abbreviation.

- Sentences case conversion: the title and booktitle fields in BibTeX database are converted to sentences case if they are in title case.

- Distinguish dropping and non-dropping particles in names.