

# Bibliography formatting with citation-style-language

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## 1 Introduction

The Citation Style Language<sup>1</sup> (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`, `lua-libs`, `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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<sup>1</sup><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

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`\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-language}
% OR
\usepackage{citation-style-language}
\cslsetup{style = apa}
```

**style** (*env.*) The `style=<style-id>` option selects the style file `<style-id>.cs1` for both citations and bibliography. The implemented CSL style files are available in the official GitHub repository<sup>2</sup> as well as the Zotero style repository<sup>3</sup>. The user may search and download the `.cs1` 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** (*env.*) 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** (*env.*) 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** (*env.*) 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.

<sup>2</sup><https://github.com/citation-style-language/styles>

<sup>3</sup><https://www.zotero.org/styles>

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

act	folio	section
appendix	issue	sub-verbo
article-locator	line	supplement
book	note	table
canon	opus	timestamp
chapter	page	title-locator
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` (*env.*) 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).

---

```
\addbibresource \addbibresource[⟨options⟩]{⟨resource⟩}
```

---

The `\addbibresource` command adds the contents of `⟨resource⟩` into the bibliographic metadata. The `⟨resource⟩` may be a CSL-JSON file or the Bib(La)TeX `.bib` file. CSL-JSON<sup>4</sup> is the default data model defined by CSL. Its contents are usually exported from Zotero. The traditional `.bib` file is converted to CSL-JSON internally for further processing. The mapping of entry-types and fields between them is detailed in the GitHub wiki page<sup>5</sup>. Note that only UTF-8 encoding is supported in the `⟨resource⟩` file.

```
\addbibresource{data-file.json}
\addbibresource{bib-file.bib}
```

---

```
\cite \cite[⟨options⟩]{⟨keys⟩}
```

---

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 locators like `page` or `figure`. The full list of supported locators is detailed in Table 1. An example is as follows.

```
\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.

For author-date styles, there are also narrative in-text citations where the author names appear in running text and only dates are enclosed in parentheses (`\citet` in

<sup>4</sup><https://github.com/citation-style-language/schema#cs1-json-schema>

<sup>5</sup><https://github.com/zepinglee/citeproc-lua/wiki/Bib-CSL-mapping>

natbib package or \textcite in biblatex). However such cite command in this package is not available at the moment and it will be implemented in the next release.

---

**\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]
```

---

**\nocite** \nocite{*keys*}

---

This command produces no output but makes the entries included in the bibliography, which is the same in standard L<sup>A</sup>T<sub>E</sub>X. 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.

**hyperref** When hyperref is loaded, the DOIs, PMIDs, and PMCIDs are correctly rendered as hyperlinks. But the citations are not linked to the entries in bibliography.

**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 Known issues

The citation-style-language package is in early development stage and there are some issues with it.

- The citeproc-lua has not implemented all the features of CSL. For detailed information of the coverage on the CSL standard test suite<sup>6</sup>, see [citeproc-test.log](https://github.com/citation-style-language/test-suite) in the GitHub repository.
- When used with `hyperref`, the citations are not correctly rendered as hyperlinks.
- The Unicode sorting method is provided by lua-uca package and CJK scripts are not supported so far.

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<sup>6</sup><https://github.com/citation-style-language/test-suite>