bath-bst: Harvard referencing style as recommended by the University of Bath Library

Maintainer: Alex Ball[*]

Package v3.2 – 16 January 2020

1 Introduction

This package provides a BibTeX style to format reference lists in the Harvard style recommended by the University of Bath Library. It should be used in conjunction with natbib for citations.

1.1 Installation

The files you need are included in the zip archive available from GitHub. If you use the zip archive from CTAN, you will need to run `luatex bath-bst.dtx` to generate them.

You can use this style simply by copying the `bath.bst`/`bathx.bst` files into your working directory, that is, the directory holding the main `.tex` file for your document. If you want the style to be available for all your documents without having to copy it over each time, you can install it using the instructions below.

1.1.1 Managed way

The latest stable release of bath-bst has been packaged for TeX Live and MiKTeX. If you are running TeX Live and have `tlmgr` installed, you can install the package simply by running `tlmgr install bath-bst`. If you are running MiKTeX, you can install the package by running `mpm --install=bath-bst`. Both `tlmgr` and `mpm` have GUI versions that you might find friendlier.

1.1.2 Automated way

A makefile is provided which you can use with the Make utility on UNIX-like systems:

- Running `make source` generates the derived files
    - `README.md`
    - `bath.bst` and `bathx.bst`
    - `bath-bst-v1.tex`
    - `bath-bst.bib` and `bath-bst-v1.bib`
    - `bath-bst.ins`
- Running `make` generates the above files and also `bath-bst.pdf` and `bath-bst-v1.pdf`. Ensure you have (at least) the luatexja, adobemapping and ipaex packages installed first.
- Running `make inst` installs the files in the user's TeX tree. You can undo this with `make uninst`.
- Running `make install` installs the files in the local TeX tree. You can undo this with `make uninstall`.

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[*] To contact the maintainer about this package, please visit the repository where the code is hosted: `https://github.com/alex-ball/bathbib`.

1.1.3 Manual way

You do not need to follow the first step if you downloaded the zip archive from GitHub. You do not need to follow the second step if you already have the PDF documentation.

1. Run `luatex bath-bst.dtx` to generate the source files.

2. Compile `bath-bst.dtx` with LuaLaTeX and BibTeX to generate the documentation. You will need, among other things, the luatexja, adobemapping and ipaex packages installed; this is just for the documentation, not for the BibTeX style itself. To generate the version 1 tests and documentation, compile `bath-bst-v1.tex` with LuaLaTeX and BibTeX.

3. If you are using TeX Live, find your home TeX tree using the following command at the command prompt/terminal:

   ```
   kpsewhich -var-value=TEXMFHOME
   ```

   If you are using MikTeX, consult the MikTeX manual entry for integrating local additions. You can use one of the roots (TeX trees) already defined – preferably one of the User roots – or set up a new one.

4. Move the files to your TeX tree as follows:

   - `source/bibtex/bath-bst`: `bath-bst.dtx`, (`bath-bst.ins`)
   - `bibtex/bst/bath-bst`: `bath.bst`, `bathx.bst`
   - `doc/bibtex/bath-bst`: `bath-bst.pdf`, `bath-bst-v1.pdf`, `README.md`

5. You may then have to update your installation's file name database before TeX and friends can see the files.

2 Choosing which variant to use

The data model offered by the standard BibTEX styles, and even the extended natbib variants, is not really rich enough to support the nuances of the Harvard (Bath) style. This means design decisions have to be made about whether to attempt some level of compatibility with other styles or craft something utterly unique.

In the first version of bath-bst, the intention was to set things up so that, if the same `.bib` file was used with a different style, the features peculiar to the Harvard (Bath) style would be ignored and the remaining information would come out in a sensible arrangement. The recommendations of the style's documentation were to use the standard entry types as much as possible (though more semantic aliases were provided), and minimal new fields were introduced. For the more exotic (in BibTEX terms) demands of the style, extensive use was made of the (standard) `note` and (non-standard) `titleaddon` fields to place information properly. If you have written a `.bib` file according the principles in that first version, the `bath` style will still work as advertised for you.

The second version introduced a new variant, `bathx` ('Bath extended'), which has a different aim. The idea with this one is that `.bib` files written for this style will be rendered just the same by the companion biblatex-bath style. Where possible, features from the latter have been emulated for BibTEX; otherwise, the 'cheats' used in this style will also work under biblatex.

Happily, it has been possible to do this while keeping most of the code in common. The main differences between two versions are as follows:

- In `bath`, the `titleaddon` field is printed bare, while in `bathx` it is wrapped in square brackets.
- In `bathx` online items are marked with '[Online]' automatically, while in `bath` you have to mark them thus yourself.
- In `bathx` undated items are marked with 'n.d.' automatically, while in `bath` you have to give 'n.d.' as the value of `year` yourself.

One other change worth noting regards URL access dates. In version 1, the advice was to put them in `urldate`. With version 2 the advice is now to put them, perhaps counter-intuitively, in `urlyear`. The reason is that biblatex will complain if the value of `urldate` is in the wrong format, but will happily print the contents of `urlyear` literally. If you don't care about biblatex compatibility, you can continue to use `urldate`.

3 Using the style

To use the style, add these lines to your preamble:

```
\usepackage{natbib}
\newcommand*{\urlprefix}{Available from: }
\newcommand*{\urldateprefix}{Accessed }
\bibliographystyle{bathx}
```

Remember also to specify your `.bib` file at the end of the document:

```
\bibliography{file}
```

To make a citation in the text, use the key that corresponds to the entry in your `.bib` file:

```
While collections can be supplemented by other means \citep{williams1997edd},
the absence of an invisible collection amongst historians is noted by
\citet[p.556]{stieg1981inh}. It may be, as \citet{burchard1965hhl} points out,
that they have no assistants or are reluctant to delegate, or it may be
down to economic factors \citep{adams2009tc1, adams2014tc2, gb.pa2014,
adams2017tc3}\dots
```

While collections can be supplemented by other means (Williams, 1997), the absence of an invisible collection amongst historians is noted by Stieg (1981b, p.556). It may be, as Burchard (1965) points out, that they have no assistants or are reluctant to delegate, or it may be down to economic factors (Adams, 2009, 2014; *Pensions Act*, 2014; Adams, 2017)...

Please refer to the documentation for natbib for the full range of commands available for in-text citations. Be aware that the `natbib` option `sort` will sort citations in bibliography order, rather than the chronological order demanded by Harvard (Bath) – so don't use it!

3.1 Migrating from version 2 to version 3

If you have previously used version 2 of the style, you may need to update your .bib file to accommodate the following changes in version 3:

- Journal titles are now coerced to sentence case, so any capital letters you want to keep need to be protected with braces.
- Entries of type `unpublished` are now marked as unpublished. If you have been using this for an item that should not be marked as unpublished (e.g. archive photographs, law reports), you can use `booklet` instead: this is the other entry type (along with `misc`) that has a `howpublished` field instead of a `publisher`.
- Some changes to the Harvard (Bath) style cannot be applied automatically (e.g. the update to how standards are referenced), so you may need to update your .bib file accordingly.

4 Examples

The examples below are shown in three parts. The first, marked with 📕, shows an extract from the *Referencing guide: Harvard Bath* or *Referencing images*. The second, marked with ⚙, shows the reference as formatted by BibTeX. The last shows how the reference was entered in the `.bib` file. The bottom right corner shows the source of the example: 'RX' indicates the 'Reference examples (A-Z)' section of the Guide; 'RL' indicates the 'Organise a reference list' section of the Guide; 'RI' indicates *Referencing images*.

Some examples are highlighted in orange. This indicates that some fields have been 'abused' to achieve the right effect; in other words, they contain information that does not conform with their intended use. Some others make use of the `note` and `titleaddon` fields to achieve the right effect, where other styles might need the information placed differently. Particular care should be taken with such items when switching between different styles, though of course any item might need adjustment to take account of differing conventions.

4.1 Books and book chapters

Book with author(s)

📕 Rang, H.P., Dale, M.M., Ritter, J.M., Flower, R.J. and Henderson, G., 2012. *Rang and Dale's pharmacology.* 7th ed. Edinburgh: Elsevier Churchill Livingstone.
⚙ Rang, H.P., Dale, M.M., Ritter, J.M., Flower, R.J. and Henderson, G., 2012. *Rang and Dale's pharmacology.* 7th ed. Edinburgh: Elsevier Churchill Livingstone.

```
@book{rang.etal2012rdp,
  author = {Rang, H. P. and Dale, M. M. and Ritter, J. M. and Flower, R. J. and Henderson, G.},
  year = {2012},
  title = {Rang and {Dale's} Pharmacology},
  edition = {7},
  address = {Edinburgh},
  publisher = {Elsevier Churchill Livingstone}}
```

RX

📕 Open University, 1972. *Electricity and magnetism.* Bletchley: Open University Press.
⚙ Open University, 1972. *Electricity and magnetism.* Bletchley: Open University Press.

```
@book{ou1972em,
  author = {{Open University}},
  year = {1972},
  title = {Electricity and Magnetism},
  address = {Bletchley},
  publisher = {Open University Press}}
```

RX

Book with editor(s) instead of author(s)

📕 Rothman, K.J., Greenland, S. and Lash, T.L., eds, 2008. *Modern epidemiology.* 3rd ed. Philadelphia, Pa.: Lippincott Williams & Wilkins.
⚙ Rothman, K.J., Greenland, S. and Lash, T.L., eds, 2008. *Modern epidemiology.* 3rd ed. Philadelphia, Pa.: Lippincott Williams & Wilkins.

```
@book{rothman.etal2008me,
  editor = {Kenneth J. Rothman and Sander Greenland and Timothy L. Lash},
  year = {2008},
  title = {Modern Epidemiology},
  edition = {3},
  address = {Philadelphia, Pa.},
  publisher = {Lippincott Williams \& Wilkins}}
```

RX

Electronic book

📘 Haynes, W.M., ed., 2014. *CRC handbook of chemistry and physics* [Online]. 94th ed. Boca Raton, Fla.: CRC Press/Taylor and Francis. Available from: `http://www.hbcpnetbase.com` [Accessed 16 June 2016].

⚙ Haynes, W.M., ed., 2014. *CRC handbook of chemistry and physics* [Online]. 94th ed. Boca Raton, Fla.: CRC Press/Taylor and Francis. Available from: `http://www.hbcpnetbase.com` [Accessed 16 June 2016].

```
@book{haynes2014crc,
  editor = {Haynes, W. M.},
  year = {2014},
  title = {{CRC} Handbook of Chemistry and Physics},
  edition = {94},
  address = {Boca Raton, Fla.},
  publisher = {CRC Press/Taylor and Francis},
  url = {http://www.hbcpnetbase.com},
  urlyear = {16 June 2016}}
```

RX

📘 Hodds, J., 2016. *Referencing ebooks* [Kindle version 4.18]. Bath: University of Bath.

⚙ Hodds, J., 2016. *Referencing ebooks* [Kindle version 4.18]. Bath: University of Bath.

```
@book{hodds2016re,
  author = {Hodds, J.},
  year = {2016},
  title = {Referencing ebooks},
  titleaddon = {Kindle version 4.18},
  address = {Bath},
  publisher = {University of Bath}}
```

RX

One chapter/paper from a collection (by different authors) in an edited book

📘 Burchard, J.E., 1965. How humanists use a library. In: C.F.J. Overhage and J.R. Harman, eds. *Intrex: report on a planning conference and information transfer experiments.* Cambridge, Mass.: MIT Press, pp.41–87.

⚙ Burchard, J.E., 1965. How humanists use a library. In: C.F.J. Overhage and J.R. Harman, eds. *Intrex: report on a planning conference and information transfer experiments.* Cambridge, Mass.: MIT Press, pp.41–87.

```
@incollection{burchard1965hhl,
  author = {Burchard, J. E.},
  year = {1965},
  title = {How Humanists use a Library},
  editor = {C. F. J. Overhage and J. R. Harman},
  booktitle = {Intrex: report on a planning conference and information transfer experiments},
  address = {Cambridge, Mass.},
  publisher = {MIT Press},
  pages = {41-87}}
```

RL

📖 Reid, D.R., 1967. Physical testing of polymer films. In: S.H. Pinner, ed. *Modern packaging films*. London: Butterworths, pp.143–183.

⚙ Reid, D.R., 1967. Physical testing of polymer films. In: S.H. Pinner, ed. *Modern packaging films*. London: Butterworths, pp.143–183.

```
@incollection{reid1967ptp,
  author = {D. R. Reid},
  year = {1967},
  title = {Physical Testing of Polymer Films},
  editor = {S. H. Pinner},
  booktitle = {Modern Packaging Films},
  address = {London},
  publisher = {Butterworths},
  pages = {143-183}}
```

RX

4.2 Articles and periodicals

Journal article

📖 Stieg, M.F., 1981a. Continuing education and the reference librarian in the academic and research library. *Library journal*, 105(22), pp.2547–2551.

⚙ Stieg, M.F., 1981a. Continuing education and the reference librarian in the academic and research library. *Library journal*, 105(22), pp.2547–2551.

```
@article{stieg1981cer,
  author = {Stieg, M. F.},
  year = {1981},
  title = {Continuing Education and the Reference Librarian in the Academic and Research Library},
  journal = {Library Journal},
  volume = {105},
  number ={22},
  pages = {2547-2551}}
```

RL

📖 Stieg, M.F., 1981b. The information needs of historians. *College and research libraries*, 42(6), pp.549–560.

⚙ Stieg, M.F., 1981b. The information needs of historians. *College and research libraries*, 42(6), pp.549–560.

```
@article{stieg1981inh,
  author = {Stieg, M. F.},
  year = {1981},
  title = {The Information Needs of Historians},
  journal = {College and Research Libraries},
  volume = {42},
  number ={6},
  pages = {549-560}}
```

RL

📖 Newman, R., 2010. Malaria control beyond 2010. *Brit. Med. J.*, 341(7765), pp.157–208.

⚙ Newman, R., 2010. Malaria control beyond 2010. *Brit. Med. J.*, 341(7765), pp.157–208.

```
@article{newman2010mcb,
  author = {Newman, R.},
  year = {2010},
  title = {Malaria control beyond 2010},
  journal = {{Brit.\@ Med.\@ J.}},
  volume = {341},
  number = {7765},
  pages = {157-208}}
```

RX

Electronic journal article

📘 Williams, F., 1997. Electronic document delivery: a trial in an academic library. *Ariadne* [Online], 10. Available from: http://www.ariadne.ac.uk/issue10/edd/ [Accessed 5 December 1997].

⚙ Williams, F., 1997. Electronic document delivery: a trial in an academic library. *Ariadne* [Online], 10. Available from: http://www.ariadne.ac.uk/issue10/edd/ [Accessed 5 December 1997].

```
@article{williams1997edd,
  author = {Williams, F.},
  year = {1997},
  title = {Electronic Document Delivery: a Trial in an Academic Library},
  journal = {Ariadne},
  volume = {10},
  url = {http://www.ariadne.ac.uk/issue10/edd/},
  urlyear = {5 December 1997}}
```

RX

💡 If citing an article yet to be officially published, use the `pubstate` field (from biblatex) with the keyword `inpress` for ‘in press’ and `inpreparation` or `submitted` (whichever is more accurate) for ‘preprint’.

📘 Liontou, C., Kontopodis, E., Oikonomidis, N., Maniotis, C., Tassopoulos, A., Tsiafoutis, I., Lazaris, E. and Koutouzis, M., 2019. Distal radial access: a review article. *Cardiovascular revascularization medicine* [Online], in press. Available from: https://www.sciencedirect.com/science/article/pii/S1553838919303367 [Accessed 19 June 2019].

⚙ Liontou, C., Kontopodis, E., Oikonomidis, N., Maniotis, C., Tassopoulos, A., Tsiafoutis, I., Lazaris, E. and Koutouzis, M., 2019. Distal radial access: a review article. *Cardiovascular revascularization medicine* [Online], in press. Available from: https://www.sciencedirect.com/science/article/pii/S1553838919303367 [Accessed 19 June 2019].

```
@article{liontou.etal2019dra,
  author = {Liontou, C. and Kontopodis, E. and Oikonomidis, N. and Maniotis, C. and
    Tassopoulos, A. and Tsiafoutis, I. and Lazaris, E. and Koutouzis, M.},
  year = {2019},
  title = {Distal Radial Access: a Review Article},
  journal = {Cardiovascular Revascularization Medicine},
  pubstate = {inpress},
  url = {https://www.sciencedirect.com/science/article/pii/S1553838919303367},
  urlyear = {19 June 2019}}
```

RX

Preprint in a digital repository

💡 The Harvard (Bath) style gives you a choice whether to treat preprints as pre-publication articles (above) or as grey literature (below). In the latter case, the `techreport` entry type is the best match semantically.

📕 Shah, I. and Corrick, I., 2016. *How should central banks respond to non-neutral inflation expectations?* Bath: University of Bath. *OPUS* [Online]. Available from: `http://opus.bath.ac.uk` [Accessed 4 May 2016].
⚙ Shah, I. and Corrick, I., 2016. *How should central banks respond to non-neutral inflation expectations?* Bath: University of Bath. *OPUS* [Online]. Available from: `http://opus.bath.ac.uk` [Accessed 4 May 2016].

```
@techreport{shah.corrick2016hsc,
  author = {Shah, I. and Corrick, I.},
  year = {2016},
  title = {How should central banks respond to non-neutral inflation expectations?},
  address = {Bath},
  institution = {University of Bath},
  library = {OPUS},
  url = {http://opus.bath.ac.uk},
  urlyear = {4 May 2016}}
```

RX

Newspaper article

🔧 Give the issue's day and month as the `volume`.

📕 Haurant, S., 2004. Britain's borrowing hits £1 trillion. *The Guardian*, 29 July, p.16c.
⚙ Haurant, S., 2004. Britain's borrowing hits £1 trillion. *The Guardian*, 29 July, p.16c.

```
@article{haurant2004bbh,
  author = {Haurant, S.},
  year = {2004},
  title = {Britain's Borrowing Hits \pounds 1 Trillion},
  journal = {The {Guardian}},
  volume = {29 July},
  pages = {16c}}
```

RX

📕 The Independent, 1992. Picking up the bills. *The Independent*, 4 June, p.28a.
⚙ The Independent, 1992. Picking up the bills. *The Independent*, 4 June, p.28a.

```
@article{independent1992pub,
  author = {{The Independent}},
  year = {1992},
  title = {Picking Up the Bills},
  journal = {The {Independent}},
  volume = {4 June},
  pages = {28a}}
```

RX

4.3 Conference papers

ℹ As in the standard BibTeX styles, `conference` is a legacy (and highly deprecated) alias for `inproceedings`.

Conference paper (when proceedings have a named editor)

📕 Crawford, G.I., 1965. Oxygen in metals. In: J.M.A. Lenihan and S.J. Thompson, eds. *Activation analysis: proceedings of a NATO Advanced Study Institute*, 2–4 August 1964, Glasgow. London: Academic Press, pp.113–118.

⚙ Crawford, G.I., 1965. Oxygen in metals. In: J.M.A. Lenihan and S.J. Thompson, eds. *Activation analysis: Proceedings of a NATO Advanced Study Institute*, 2–4 August 1964, Glasgow. London: Academic Press, pp.113–118.

```
@inproceedings{crawford1965oim,
  author = {Crawford, G. I.},
  year = {1965},
  title = {Oxygen in Metals},
  editor = {J. M. A. Lenihan and S. J. Thompson},
  booktitle = {Activation Analysis: Proceedings of a {NATO} {Advanced} {Study} {Institute}},
  eventyear = {2--4 August 1964},
  venue = {Glasgow},
  address = {London},
  publisher = {Academic Press},
  pages = {113-118}}
```

RX

Conference paper (when proceedings have no named editor or are part of a major series)

📕 Soper, D., 1972. Review of bracken control experiments with asulam. *Proceedings of the 11th British Weed Control Conference*, 15–17 November 1972, Brighton. Brighton: University of Sussex, pp.24–31.

⚙ Soper, D., 1972. Review of bracken control experiments with asulam. *Proceedings of the 11th British Weed Control Conference*, 15–17 November 1972, Brighton. Brighton: University of Sussex, pp.24–31.

```
@inproceedings{soper1972rbc,
  author = {Soper, D.},
  year = {1972},
  title = {Review of Bracken Control Experiments with Asulam},
  booktitle = {Proceedings of the 11th {British} {Weed} {Control} {Conference}},
  eventyear = {15--17 November 1972},
  venue = {Brighton},
  address = {Brighton},
  publisher = {University of Sussex},
  pages = {24-31}}
```

RX

4.4 Grey literature

Thesis/dissertation

📕 Burrell, J.G., 1973. *The importance of school tours in education.* Thesis (M.A.). Queen's University, Belfast.

⚙ Burrell, J.G., 1973. *The importance of school tours in education.* Thesis (M.A.). Queen's University, Belfast.

```
@mastersthesis{burrell1973ist,
  author = {Burrell, J. G.},
  year = {1973},
  title = {The Importance of School Tours in Education},
  type = {Thesis ({M.A.})},
  school = {Queen's University, Belfast}}
```

RX

ℹ Internally, `thesis` is an alias for `phdthesis`.

Report

📕 UNESCO, 1993. *General information programme and UNISIST*. (PGI-93/WS/22). Paris: UNESCO.
⚙ UNESCO, 1993. *General information programme and UNISIST*. (PGI-93/WS/22). Paris: UNESCO.

```
@techreport{unesco1993gip,
  author = {{UNESCO}},
  year = {1993},
  title = {General Information Programme and {UNISIST}},
  address = {Paris},
  institution = {UNESCO},
  number = {PGI-93/WS/22}}
```

RX

📕 BRE, 2007. *Designing quality buildings: a BRE guide.* (Report 497). Bracknell: BRE.
⚙ BRE, 2007. *Designing quality buildings: a BRE guide.* (Report 497). Bracknell: BRE.

```
@techreport{bre2007dqb,
  author = {{BRE}},
  year = {2007},
  title = {Designing Quality Buildings: a {BRE} Guide},
  address = {Bracknell},
  institution = {BRE},
  type = {Report},
  number = {497}}
```

RX

ℹ Internally, `report` is an alias for `techreport`.

Standard

📕 BSI, 1990. *BS 5605:1990 Recommendations for citing and referencing published material.* London: BSI.
⚙ BSI, 1990. *BS 5605:1990 Recommendations for citing and referencing published material.* London: BSI.

```
@standard{bs5605:1990,
  author = {{BSI}},
  year = {1990},
  title = {{BS}~5605:1990 {Recommendations} for Citing and Referencing Published Material},
  address = {London},
  organization = {BSI}}
```

RX

📕 ASTM, 2019. *ASTM D1655 - 19 Standard specification for aviation turbine fuels.* West Conshohocken, Pa.: ASTM.
⚙ ASTM, 2019. *ASTM D1655 - 19 Standard specification for aviation turbine fuels.* West Conshohocken, Pa.: ASTM.

```
@standard{astm.d1655,
  author = {{ASTM}},
  year = {2019},
  title = {{ASTM~D1655} - 19 {Standard} Specification for Aviation Turbine Fuels},
  address = {West Conshohocken, Pa.},
  organization = {ASTM}}
```

RX

ℹ Internally, `standard` is an alias for `manual`.

Patent

📖 Phillipp Morris Inc., 1981. *Optical perforating apparatus and system.* European patent application 0021165A1. 1981-01-07.

⚙ Phillipp Morris Inc., 1981. *Optical perforating apparatus and system.* European patent application 0021165A1. 1981-01-07.

```
@patent{pm1981opa,
  author = {{Phillipp Morris Inc.}},
  year = {1981},
  title = {Optical perforating apparatus and system},
  type = {European patent application},
  number = {0021165A1. 1981-01-07}}
```

RX

ℹ Internally, `patent` is an alias for `manual`.

Unpublished written material and personal communications

📖 Harris, G., 2013. *Focus group recommendations: internal task group report.* Unpublished.

⚙ Harris, G., 2013. *Focus group recommendations: internal task group report.* Unpublished.

```
@unpublished{harris2013fgr,
  author = {Harris, G.},
  year = {2013},
  title = {Focus group recommendations: internal task group report}}
```

RX

📖 Hadley, S., 2015. *Biomechanics: introductory reading, BM289: sport biomechanics.* University of Bath. Unpublished.

⚙ Hadley, S., 2015. *Biomechanics: introductory reading, BM289: sport biomechanics.* University of Bath. Unpublished.

```
@unpublished{hadley2015bir,
  author = {Hadley, S.},
  year = {2015},
  title = {Biomechanics: introductory reading, {BM289}: sport biomechanics},
  howpublished = {University of Bath}}
```

RX

📖 Thomas, D., 2015. Word count and referencing style. *Frequently asked questions discussion board: PHYS 2011: housing studies.* University of Bath. Unpublished.

⚙ Thomas, D., 2015. Word count and referencing style. *Frequently asked questions discussion board: PHYS 2011: housing studies.* University of Bath. Unpublished.

```
@unpublished{thomas2015wcr,
  author = {Thomas, D.},
  year = {2015},
  title = {Word count and referencing style},
  booktitle = {Frequently asked questions discussion board: {PHYS} 2011: housing studies},
  howpublished = {University of Bath}}
```

RX

4.5 Audiovisual materials

Image

📕 NASA, 2015, *NASA astronaut Tim Kopra on Dec. 21 spacewalk* [Online]. Washington: NASA. Available from: http://www.nasa.gov/image-feature/nasa-astronaut-tim-kopra-on-dec-21-spacewalk [Accessed 7 January 2015].

⚙ NASA, 2015. *NASA astronaut Tim Kopra on Dec. 21 spacewalk* [Online]. Washington: NASA. Available from: http://www.nasa.gov/image-feature/nasa-astronaut-tim-kopra-on-dec-21-spacewalk [Accessed 7 January 2015].

```
@image{nasa2015nat,
  author = {{NASA}},
  year = {2015},
  title = {{NASA} Astronaut {Tim} {Kopra} on {Dec.\@} 21 Spacewalk},
  address = {Washington},
  publisher = {NASA},
  url = {http://www.nasa.gov/image-feature/nasa-astronaut-tim-kopra-on-dec-21-spacewalk},
  urlyear = {7 January 2015}}
```

RI

💡 You can use either the `publisher` or the `organization` field to record the source of the image.

📕 Iliff, D., 2006. *Royal Crescent in Bath, England - July 2006* [Online]. San Francisco: Wikimedia Foundation. Available from: https://commons.wikimedia.org/wiki/File:Royal_Crescent_in_Bath,_England_-_July_2006.jpg [Accessed 7 January 2016].

⚙ Iliff, D., 2006. *Royal Crescent in Bath, England - July 2006* [Online]. San Francisco: Wikimedia Foundation. Available from: https://commons.wikimedia.org/wiki/File:Royal_Crescent_in_Bath,_England_-_July_2006.jpg [Accessed 7 January 2016].

```
@image{iliff2006rcb,
  author = {D. Iliff},
  year = {2006},
  title = {{Royal} {Crescent} in {Bath,} {England} - {July} 2006},
  address = {San Francisco},
  organization = {Wikimedia Foundation},
  url = {https://commons.wikimedia.org/wiki/File:Royal_Crescent_in_Bath,_England_-_July_2006.jpg},
  urlyear = {7 January 2016}}
```

RI

📕 Anon., 1946. *Prototype electric bicycle displayed at the 'Britain Can Make It' exhibition organised by the Council of Industrial Design and held at the Victoria and Albert Museum, London, 1946. Designed by B. G. Bowden* [Photograph]. At: London. Design Council Slide Collection.

⚙ Anon., 1946. *Prototype electric bicycle displayed at the 'Britain Can Make It' exhibition organised by the Council of Industrial Design and held at the Victoria and Albert Museum, London, 1946. Designed by B. G. Bowden* [Photograph]. At: London. Design Council Slide Collection.

```
@image{anon1946peb,
  author = {Anon.},
  year = {1946},
  title = {Prototype electric bicycle displayed at the \enquote{Britain Can Make It} exhibition
    organised by the {Council} of {Industrial} {Design} and held at the {Victoria} and {Albert}
    {Museum}, {London}, 1946. {Designed} by {B.~G.} {Bowden}},
  titleaddon = {Photograph},
  address = {London},
  library = {Design Council Slide Collection}}
```

RI

💡 Use the `library` field to record the archive and register number. If you also wish to provide the name of the organisation that published the image, use the `publisher` field if the location you provide relates to the publisher, but the `organization` field if the location relates to the archive.

Map

📓 Andrews, J. and Dury, A., 1773. *Map of Wiltshire*, 1 inch to 2 miles. Devizes: Wiltshire Record Society.

⚙ Andrews, J. and Dury, A., 1773. *Map of Wiltshire*. 1 inch to 2 miles. Devizes: Wiltshire Record Society.

```
@manual{andrews.dury1773wilts,
  author = {Andrews, J. and Dury, A.},
  year = {1773},
  title = {Map of {Wiltshire}},
  series = {1 inch to 2 miles},
  address = {Devizes},
  publisher = {Wiltshire Record Society}}
```

RX

💡 The `book` entry type would also work for this reference.

Film, video or DVD

📓 *Macbeth*, 1948. Film. Directed by Orson Welles. USA: Republic Pictures.

⚙ *Macbeth*, 1948. Film. Directed by Orson Welles. USA: Republic Pictures.

```
@video{macbeth1948,
  year = {1948},
  title = {Macbeth},
  type = {Film},
  note = {Directed by Orson Welles},
  address = {USA},
  publisher = {Republic Pictures}}
```

RX

ℹ Internally, `movie` and `video` are aliases for `booklet`.

Streamed video (YouTube, TED Talks, etc.)

📓 Moran, C., 2016. *Save our libraries* [Online]. Available from: `https://www.youtube.com/watch?v=gKTfCz4JtVE&feature=youtu.be` [Accessed 29 April 2016].

⚙ Moran, C., 2016. *Save our libraries* [Online]. Available from: `https://www.youtube.com/watch?v=gKTfCz4JtVE&feature=youtu.be` [Accessed 29 April 2016].

```
@video{moran2016sol,
  author = {Moran, C.},
  year = {2016},
  title = {Save Our Libraries},
  url = {https://www.youtube.com/watch?v=gKTfCz4JtVE&feature=youtu.be},
  urlyear = {29 April 2016}}
```

RX

📓 University of Bath, 2015. *What is engineering?* [Online]. Available from: `https://www.youtube.com/watch?v=NoyZarq-Zbo` [Accessed 12 January 2016].

⚙ University of Bath, 2015. *What is engineering?* [Online]. Available from: `https://www.youtube.com/watch?v=NoyZarq-Zbo` [Accessed 12 January 2016].

```
@video{uob2015wie,
  author = {{University of Bath}},
  year = {2015},
  title = {What is Engineering?},
  url = {https://www.youtube.com/watch?v=NoyZarq-Zbo},
  urlyear = {12 January 2016}}
```

RI

📖 Chakrabarti, V., 2016. *How architecture and city planning can combat social inequality* [Online]. Available from: `https://www.curbed.com/2016/5/5/11593058/vishaan-chakrabarti-pau-curbed-appeal-podcast` [Accessed 28 March 2019].
⚙ Chakrabarti, V., 2016. *How architecture and city planning can combat social inequality* [Online]. Available from: `https://www.curbed.com/2016/5/5/11593058/vishaan-chakrabarti-pau-curbed-appeal-podcast` [Accessed 28 March 2019].

```
@audio{chakrabarti2016hac,
  author = {Chakrabarti, V.},
  year = {2016},
  title = {How Architecture and City Planning Can Combat Social Inequality},
  url = {https://www.curbed.com/2016/5/5/11593058/vishaan-chakrabarti-pau-curbed-appeal-podcast},
  urlyear = {28 March 2019}}
```

RI

Television or radio broadcast

📖 *Rick Stein's French odyssey: Episode 5*, 2006. TV. BBC2, 23 August. 20.30 hrs.
⚙ *Rick Stein's French odyssey: Episode 5*, 2006. TV. BBC2, 23 August. 20.30 hrs.

```
@video{rsfo2006ep5,
  year = {2006},
  title = {Rick {Stein's} {French} Odyssey: Episode 5},
  type = {TV},
  note = {BBC2, 23 August. 20.30 hrs}}
```

RX

📖 *The Archers*, 2006. Radio. BBC Radio 4, 23 August. 19.02 hrs.
⚙ *The Archers*, 2006. Radio. BBC Radio 4, 23 August. 19.02 hrs.

```
@audio{archers20060823,
  year = {2006},
  title = {The {Archers}},
  type = {Radio},
  note = {BBC Radio 4, 23 August. 19.02 hrs}}
```

RX

💡 Use `type` for the medium and `note` for the channel, date and time.

ℹ Internally, `audio` and `music` are aliases for `booklet`.

Music score

📖 Beethoven, L. van, 1950. *Symphony no.1 in C, Op.21*. Harmondsworth: Penguin.
⚙ Beethoven, L. van, 1950. *Symphony no.1 in C, Op.21*. Harmondsworth: Penguin.

```
@book{beethoven1950symph1,
  author = {Ludwig van Beethoven},
  year = {1950},
  title = {Symphony no.1 in {C,} {Op.21}},
  address = {Harmondsworth},
  publisher = {Penguin}}
```

RX

4.6 Digital media

Website/webpage

While it is normal when using BibTEX to use `misc` for websites, with this style you should use `online` (or `electronic` or `www`) instead. Internally these are all aliases for `manual`.

📘 Holland, M., 2002. *Guide to citing internet sources* [Online]. Poole: Bournemouth University. Available from: `http://www.bournemouth.ac.uk/library/using/guide_to_citing_internet_sourc.html` [Accessed 4 November 2002].

⚙ Holland, M., 2002. *Guide to citing internet sources* [Online]. Poole: Bournemouth University. Available from: `http://www.bournemouth.ac.uk/library/using/guide_to_citing_internet_sourc.html` [Accessed 4 November 2002].

```
@online{holland2002gci,
  author = {Holland, M.},
  year = {2002},
  title = {Guide to Citing Internet Sources},
  address = {Poole},
  organization = {Bournemouth University},
  url = {http://www.bournemouth.ac.uk/library/using/guide_to_citing_internet_sourc.html},
  urlyear = {4 November 2002}}
```

RX

Email discussion lists (jiscmail/listserv etc.)

📘 Clark, T., 5 July 2004. A European UK Libraries Plus? *Lis-link* [Online]. Available from: `lis-link@jiscmail.ac.uk` [Accessed 30 July 2004].

⚙ Clark, T., 5 July 2004. A European UK Libraries Plus? *Lis-link* [Online]. Available from: `lis-link@jiscmail.ac.uk` [Accessed 30 July 2004].

```
@letter{clark2004euk,
  author = {Clark, T.},
  year = {5 July 2004},
  title = {A {European} {UK} {Libraries} {Plus}?},
  journal = {Lis-link},
  url = {lis-link@jiscmail.ac.uk},
  urlyear = {30 July 2004}}
```

RX

💡 Use the `journal` field to specify the mailing list. Internally, a `letter` entry with a `journal` field is treated like an `article` entry, while one without is treated like an `unpublished` entry.

🔧 You will need to put the full date in the `year` field; unfortunately this means you have to put in extra work to show only the year in citations:

```
\citetext{\citeauthor[2004]{clark2004euk}}
```

(Clark, 2004)

Database

📘 Bureau van Dijk, 2008. *BT Group plc company report. FAME* [Online]. London: Bureau van Dijk. Available from: `http://www.portal.euromonitor.com` [Accessed 6 November 2014].

⚙ Bureau van Dijk, 2008. *BT Group plc company report. FAME* [Online]. London: Bureau van Dijk. Available from: `http://www.portal.euromonitor.com` [Accessed 6 November 2014].

```
@dataset{bvd2008bt,
  author = {{Bureau van Dijk}},
  year = {2008},
  title = {{BT} {Group} PLC Company Report},
  library = {FAME},
  address = {London},
  publisher = {Bureau van Dijk},
  url = {http://www.portal.euromonitor.com},
  urlyear = {6 November 2014}}
```

RX

Dataset

Wilson, D., 2013. *Real geometry and connectedness via triangular description: CAD example bank* [Online]. Bath: University of Bath. Available from: https://doi.org/10.15125/BATH-00069 [Accessed 20 April 2016].

Wilson, D., 2013. *Real geometry and connectedness via triangular description: CAD example bank* [Online]. Bath: University of Bath. Available from: https://doi.org/10.15125/BATH-00069 [Accessed 20 April 2016].

```
@dataset{wilson2013rgc,
  author = {Wilson, D.},
  year = {2013},
  title = {Real Geometry and Connectedness via Triangular Description: {CAD} Example Bank},
  address = {Bath},
  publisher = {University of Bath},
  doi = {10.15125/BATH-00069},
  urlyear = {20 April 2016}}
```

RX

You can use `dataset` instead of `online` as an alias for `manual`.

Computer program

@screencasto, n.d. *Screencast-O-Matic* (v.2) [computer program]. Available from: https://screencast-o-matic.com/ [Accessed 16 May 2016].

@screencasto, n.d. *Screencast-O-Matic* (v.2) [computer program]. Available from: https://screencast-o-matic.com/ [Accessed 16 May 2016].

```
@software{screencasto,
  author = {@screencasto},
  title = {{Screencast-O-Matic}},
  version = {2},
  titleaddon = {computer program},
  url = {https://screencast-o-matic.com/},
  urlyear = {16 May 2016}}
```

RX

Internally, `software` is an alias for `manual`.

4.7 Works in languages other than English

Work in translation

Aristotle, 2007. *Nicomachean ethics* (W.D. Ross, Trans.). South Dakota: NuVisions.

Aristotle, 2007. *Nicomachean ethics* (W.D. Ross, Trans.). South Dakota: NuVisions.

```
@book{aristotle2007ne,
  author = {Aristotle},
  year = {2007},
  title = {Nicomachean Ethics},
  translator = {W. D. Ross},
  address = {South Dakota},
  publisher = {NuVisions}}
```

RX

Work in the Roman alphabet

📕 Esquivel, L., 2003. *Como agua para chocolate* [Like water for chocolate]. Barcelona: Debolsillo.

⚙ Esquivel, L., 2003. *Como agua para chocolate* [Like water for chocolate]. Barcelona: Debolsillo.

```
@book{esquivel2003cap,
  author = {Esquivel, L.},
  year = {2003},
  title = {Como Agua para Chocolate},
  titleaddon = {Like water for chocolate},
  address = {Barcelona},
  publisher = {Debolsillo}}
```

RX

📕 Thurfjell, W., 1975. Vart har våran doktor tagit vägen? [Where has our doctor gone?]. *Läkartidningen*, 72, p.789.

⚙ Thurfjell, W., 1975. Vart har våran doktor tagit vägen? [Where has our doctor gone?]. *Läkartidningen*, 72, p.789.

```
@article{thurfjell1975vhv,
  author = {Thurfjell, W.},
  year = {1975},
  title = {Vart har våran doktor tagit vägen?},
  titleaddon = {Where has our doctor gone?},
  journal = {Läkartidningen},
  volume = {72},
  pages = {789}}
```

RX

Work in a non-Roman alphabet

💡 The following example tricks BibTEX into treating the original rendering of the author's name as the 'von' part of a Roman-alphabet name. This requires the use of a command that simply gobbles its argument, which you have to define yourself:

```
\newcommand*{\noop}[1]{}
```

For the trick to work, the argument you give to `\noop` must be lowercase, but otherwise it can be anything you like.

📕 Hua, L. 華林甫, 1999. Qingdai yilai Sanxia diqu shuihan zaihai de chubu yanjiu 清代以來三峽地區水旱災害的初步研 [A preliminary study of floods and droughts in the Three Gorges region since the Qing dynasty]. *Zhongguo shehui kexue* 中國社會科學, 1, pp.168–79.

⚙ Hua, L. 華林甫, 1999. Qingdai yilai Sanxia diqu shuihan zaihai de chubu yanjiu 清代以來三峽地區水旱災害的初步研 [A preliminary study of floods and droughts in the Three Gorges region since the Qing dynasty]. *Zhongguo shehui kexue* 中國社會科學, 1, pp.168–79.

```
@article{hua1999qysl,
  author = {Linfu \noop{h}華林甫 Hua},
  year = {1999},
  title = {Qingdai yilai {Sanxia} diqu shuihan zaihai de chubu yanjiu
    {清代以來三峽地區水旱災害的初步研}},
  titleaddon = {A preliminary study of floods and droughts in the {Three} {Gorges} region since
    the {Qing} dynasty},
  journal = {Zhongguo shehui kexue \textup{中國社會科學}},
  volume = {1},
  pages = {168-79}}
```

RX

💡 If the name is due to appear initial first (e.g. after ‘In:’), you can append the non-Roman characters to the author’s surname; to do this, use inverted name order as you would for English double-barrelled names without hyphens, e.g. `Hua 華林甫, Linfu`.

📕 Hua, L., 1999. Qingdai yilai Sanxia diqu shuihan zaihai de chubu yanjiu [A preliminary study of floods and droughts in the Three Gorges region since the Qing dynasty]. *Zhongguo shehui kexue*, 1, pp.168–79.
⚙ Hua, L., 1999. Qingdai yilai Sanxia diqu shuihan zaihai de chubu yanjiu [A preliminary study of floods and droughts in the Three Gorges region since the Qing dynasty]. *Zhongguo shehui kexue*, 1, pp.168–79.

```
@article{hua1999qys2,
  author = {Hua, Linfu},
  year = {1999},
  title = {Qingdai yilai {Sanxia} diqu shuihan zaihai de chubu yanjiu},
  titleaddon = {A preliminary study of floods and droughts in the {Three} {Gorges} region since
    the {Qing} dynasty},
  journal = {Zhongguo shehui kexue},
  volume = {1},
  pages = {168-79}}
```

RX

📕 Pamporov, A., 2006. *Romskoto vsekidnevie v Balgariya* [Roma everyday life in Bulgaria]. Veliko Tarnovo: Faber.
⚙ Pamporov, A., 2006. *Romskoto vsekidnevie v Balgariya* [Roma everyday life in Bulgaria]. Veliko Tarnovo: Faber.

```
@book{pamporov2006rvb,
  author = {Pamporov, A.},
  year = {2006},
  title = {Romskoto vsekidnevie v {Balgariya}},
  titleaddon = {Roma everyday life in Bulgaria},
  address = {Veliko Tarnovo},
  publisher = {Faber}}
```

RX

4.8 Legal references: UK legislation and parliamentary reports

Act of Parliament (UK Statutes) before 1963

📕 *Witchcraft Act 1735* (9 Geo.2, c.5).
⚙ *Witchcraft Act 1735* (9 Geo.2, c.5).

```
@legislation{gb.wa1735,
  title = {Witchcraft {Act}},
  year = {1735},
  series = {9 Geo.2},
  chapter = {5}}
```

RX

Act of Parliament (UK Statutes) 1963 onwards

📕 *Pensions Act 2014*, c.19. London: TSO.
⚙ *Pensions Act 2014*, c.19. London: TSO.

```
@legislation{gb.pa2014,
  title = {Pensions {Act}},
  year = {2014},
  chapter = {19},
  address = {London},
  publisher = {TSO}}
```

RX

House of Commons/House of Lords bill

📘 Great Britain. Parliament. House of Commons, 1988. *Local government finance bill.* (Bills | 1987/88, 66). London: HMSO.

⚙ Great Britain. Parliament. House of Commons, 1988. *Local government finance bill.* (Bills | 1987/88, 66). London: HMSO.

```
@legislation{gb.bill1987/88-66,
  author = {{Great Britain. Parliament. House of Commons}},
  year = {1988},
  title = {Local Government Finance Bill},
  address = {London},
  publisher = {HMSO},
  series = {{Bills | 1987/88}},
  number = {66}}
```

RX

Statutory instrument

📘 *The Human Medicines Regulations 2012* [Online], No.1916, United Kingdom: HMSO. Available from: http://www.legislation.gov.uk/uksi/2012/1916/pdfs/uksi_20121916_en.pdf [Accessed 17 April 2016].

⚙ *The Human Medicines Regulations 2012* [Online], No.1916, United Kingdom: HMSO. Available from: http://www.legislation.gov.uk/uksi/2012/1916/pdfs/uksi_20121916_en.pdf [Accessed 17 April 2016].

```
@legislation{gb.hmr2012,
  entrysubtype = {secondary},
  title = {The {Human} {Medicines} {Regulations}},
  year = {2012},
  number = {No.1916},
  address = {United Kingdom},
  publisher = {HMSO},
  url = {http://www.legislation.gov.uk/uksi/2012/1916/pdfs/uksi_20121916_en.pdf},
  urlyear = {17 April 2016}}
```

RX

💡 Use the `entrysubtype` ‘secondary’ to put the number in the right place.

House of Commons paper

Use this form for reports of House of Commons select committees.

📘 Great Britain. Parliament. House of Commons, 2004. *National Savings investment deposits: account 2002–2003.* (HC 2003/04, 30). London: National Audit Office.

⚙ Great Britain. Parliament. House of Commons, 2004. *National Savings investment deposits: account 2002–2003.* (HC 2003/04, 30). London: National Audit Office.

```
@techreport{gb.hc2003/04-30,
  author = {{Great Britain. Parliament. House of Commons}},
  year = {2004},
  title = {National {Savings} Investment Deposits: account 2002--2003},
  address = {London},
  publisher = {National Audit Office},
  series = {HC 2003/04},
  number = {30}}
```

RX

House of Lords paper

Use this form for reports of House of Lords select committees.

📕 Great Britain. Parliament. House of Lords, 1987. *Social fund (maternity and funeral expenses) bill.* (HL 1986/87, (66)). London: HMSO.

⚙ Great Britain. Parliament. House of Lords, 1987. *Social fund (maternity and funeral expenses) bill.* (HL 1986/87, (66)). London: HMSO.

```
@techreport{gb.hl1986/87-66,
  author = {{Great Britain. Parliament. House of Lords}},
  year = {1987},
  title = {Social Fund (Maternity and Funeral Expenses) Bill},
  address = {London},
  publisher = {HMSO},
  series = {HL 1986/87},
  number = {66}}
```

RX

🔧 For joint committees, you will have to hack this slightly, putting the session years in `series` and the HL and HC numbers in `number`.

Command paper

📕 Great Britain. Ministry of Defence, 2004. *Delivering security in a changing world: defence white paper.* (Cm. 6041). London: TSO.

⚙ Great Britain. Ministry of Defence, 2004. *Delivering security in a changing world: defence white paper.* (Cm. 6041). London: TSO.

```
@techreport{gb.cm6041,
  author = {{Great Britain. Ministry of Defence}},
  year = {2004},
  title = {Delivering Security in a Changing World{:} Defence White Paper},
  address = {London},
  publisher = {TSO},
  series = {Cm},
  number = {6041}}
```

RX

4.9 Legal references: EU legislation and reports

EU regulation or directive, decision, recommendation or opinion

📕 Council Regulation (EC) 1984/2003 of 8 April 2003 introducing a system for the statistical monitoring of trade in bluefin tuna, swordfish and big eye tuna within the Community [2003] *OJ* L295.

⚙ Council Regulation (EC) 1984/2003 of 8 April 2003 introducing a system for the statistical monitoring of trade in bluefin tuna, swordfish and big eye tuna within the Community [2003] *OJ* L295.

```
@legislation{eu.dir1984/2003,
  title = {Council {Regulation} ({EC}) 1984/2003 of 8 {April} 2003 Introducing a System for
    the Statistical Monitoring of Trade in Bluefin Tuna, Swordfish and Big Eye Tuna within
    the {Community}},
  year = {2003},
  journal = {OJ},
  series = {L},
  volume = {295}}
```

RX

🔧 Use `\defcitealias` to provide a suitable citation string:

```
\defcitealias{eu.dir1984/2003}{%
  Council Regulation [EC] 1984/2003}
\citepalias{eu.dir1984/2003}
```

(Council Regulation [EC] 1984/2003)

EU publication

📕 European Commission, 2015. *General report on the activities of the European Union 2014*. Luxembourg: Publications Office of the European Union.
⚙ European Commission, 2015. *General report on the activities of the European Union 2014*. Luxembourg: Publications Office of the European Union.

```
@techreport{ec2015gra,
  author = {{European Commission}},
  year = {2015},
  title = {General Report on the Activities of the {European} {Union} 2014},
  address = {Luxembourg},
  publisher = {Publications Office of the European Union}}
```

RX

4.10 Legal references: case reports

Legal case study

📕 *Seldon v. Clarkson Wright & Jakes.* [2012]. UKSC 16.
⚙ *Seldon v. Clarkson Wright & Jakes.* [2012]. UKSC 16.

```
@jurisdiction{seldon-v-c.w.j2012,
  title = {Seldon v.~{Clarkson} {Wright} \& {Jakes}},
  year = {2012},
  journal = {UKSC},
  pages = {16}}
```

RX

ℹ Generally speaking, the year should be in square brackets if it is essential to the citation (unless it is a Scottish case, in which case it is printed bare), and in parentheses if it is not.

💡 The style assumes the year is essential if and only if a volume number is *not* provided; to override this, you can use the `year-essential` option:

```
    options = {year-essential=true},
```

To use Scottish style for a case, you can either use the `scottish-style` option or the keyword `sc`.

```
    options = {scottish-style},
    keywords = {sc},
```

ℹ Please bear in mind that the `options` and `keywords` fields from biblatex have been emulated rather crudely. You can only supply one of each and the text must match exactly (so don't add spaces or anything like that).

🔧 This should cover most cases, but legal references tend to enforce their own conventions no matter what the rest of the reference list is doing, and it is out of scope for this style to cater for every variation. Therefore if you need a different format (e.g. for an American case), you may prefer to format the reference more-or-less by hand:

```
    title = {Seldon v.~{Clarkson} {Wright} \& {Jakes}},
    sortyear = {2012},
    note = {[2012]. UKSC 16}
```

Judgment of the European Court of Justice

📕 *Alessandrini Srl and others v. Commission* (C-295/03 P) [2005] ECR I–5700.
⚙ *Alessandrini Srl and others v. Commission* (C-295/03 P) [2005] ECR I–5700.

```
@jurisdiction{srl.etal-v-comm2005,
  title = {Alessandrini {Srl} and others v.~{Commission}},
  number = {C-295/03 P},
  year = {2005},
  journal = {ECR},
  volume = {I},
  pages = {5700}}
```

RX

💡 Use the `number` field (or the non-standard `casenmuber` field) for the case number. For Commission Decisions, use the (non-standard) `casenumber` or (biblatex-oscola) `userb` field for the Commission case number, `number` for the formal decision number, and give ‘Commission’ as the `institution`.

References

Adams, G., 2009. *Test citation one.* London: Imperial College Bookstall.

Adams, G., 2014. *Test citation two.* Oxford: Oxford University Press.

Adams, G., 2017. *Test citation three.* Cambridge: Cambridge University Press.

Alessandrini Srl and others v. Commission (C-295/03 P) [2005] ECR I–5700.

Andrews, J. and Dury, A., 1773. *Map of Wiltshire.* 1 inch to 2 miles. Devizes: Wiltshire Record Society.

Anon., 1946. *Prototype electric bicycle displayed at the ‘Britain Can Make It’ exhibition organised by the Council of Industrial Design and held at the Victoria and Albert Museum, London, 1946. Designed by B. G. Bowden* [Photograph]. At: London. Design Council Slide Collection.

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5 Implementation

The line numbers for the listings below match `bathx.bst`.

5.1 Data model

We begin by listing the entry fields that we will recognize. These are the standard BibTEX ones plus `archive`, `doi`, `eid`, `eprint`, `entrysubtype`, `eventyear`, `keywords`, `language`, `library`, `options`, `pubstate`, `sortyear`, `titleaddon`, `translator`, `url`, `urldate`, `urlyear`, `userb`, `venue`, and `version`, all of which have been backported from natbib and biblatex. `casenumber` is specific to this style.

```
ENTRY
  { address
    archive
    author
    booktitle
    casenumber
    chapter
    doi
    edition
    editor
    eid
    entrysubtype
    eprint
    eventyear
    howpublished
    institution
    journal
    key
    keywords
    language
    library
    month
    note
    number
    options
    organization
    pages
    publisher
    pubstate
    school
    series
    sortyear
    title
    titleaddon
    translator
    type
    url
    urldate
    urlyear
    userb
    venue
    version
    volume
    year
  }
  {}
  { label extra.label sort.label short.list }
```

5.2 Writing references out to a file

We define a set of integers for saving an output state. We will use them to to implement the mechanism for stringing the elements of the reference together. Whenever an element is printed, it is separated from any previous previous text by a delimiter, and the delimiter chosen depends on the state. We define five states which trigger increasingly strong delimiters.

```
INTEGERS { output.state before.all mid.clause mid.sentence after.sentence after.block }
FUNCTION {init.state.consts}
{ #0 'before.all :=
  #1 'mid.clause :=
  #2 'mid.sentence :=
  #3 'after.sentence :=
  #4 'after.block :=
}
```

We also define two variables to store strings in.

```
STRINGS { s t }
```

The `output.nonnull` function removes an element from the stack, writes the appropriate delimiter to the .bbl file depending on the state, then restores the original element. Afterwards, the output state is set to `mid.sentence`.

- `before.all` = nothing is written.
- `mid.clause` = a space is written.
- `mid.sentence` = a comma is written.
- `after.sentence` = a period is written.
- `after.block` = a period, line break and `\newblock` are written.

```
FUNCTION {output.nonnull}
{ 's :=
  output.state mid.sentence =
    { ", " * write$ }
    { output.state after.sentence =
        { add.period$ " " * write$ }
        { output.state before.all =
            'write$
            { output.state mid.clause =
                { " " * write$ }
                { add.period$ write$
                  newline$
                  "\newblock " write$
                }
              if$
            }
          if$
        }
      if$
      mid.sentence 'output.state :=
    }
  if$
  s
}
```

The ‘after’ output states persist if nothing is printed. The ‘mid.clause’ state shouldn’t, so we provide a macro for reverting to ‘mid.sentence’.

```
FUNCTION {end.clause}
{ output.state mid.clause =
    { mid.sentence 'output.state := }
    'skip$
  if$
}
```

Before writing anything out, we need to make sure there is something to be printed. We provide two functions for this: `output` is silent, while `output.check` will write a warning to the log that the field is empty. The latter consumes an additional string (at the top of the stack) for printing in the warning message.

```
FUNCTION {output}
{ duplicate$ empty$
    { pop$ end.clause }
    'output.nonnull
```

```
  if$
}
FUNCTION {output.check}
{ 't :=
  duplicate$ empty$
    { pop$ "empty " t * " in " * cite$ * warning$
      end.clause
    }
    'output.nonnull
  if$
}
```

We provide some convenience functions for changing the state from `mid.sentence`. The order of precedence is before.all, after.block, after.sentence, mid.clause/mid.sentence.

```
FUNCTION {new.block}
{ output.state before.all =
    'skip$
    { after.block 'output.state := }
  if$
}
FUNCTION {new.sentence}
{ output.state after.block =
    'skip$
    { output.state before.all =
        'skip$
        { after.sentence 'output.state := }
      if$
    }
  if$
}
FUNCTION {continue.clause}
{ output.state after.sentence =
    'skip$
    { output.state after.block =
        'skip$
        { output.state before.all =
            'skip$
            { mid.clause 'output.state := }
          if$
        }
      if$
    }
  if$
}
```

The `date.block` function is a handy alias.

```
FUNCTION {date.block}
{ new.block
}
```

The `bibinfo` functions consume two tokens: the value and name of a field respectively. If the value is non-null, it is written out to the .bbl file in the form `\bibinfo{field name}{field value}`. If the value is missing, the tokens are replaced with an empty string; if the value is empty, it is put back on the stack. The `check` version does this silently, while the `warn` version issues warnings in the log file if the value is missing or empty.

```
FUNCTION {bibinfo.check}
{ swap$
  duplicate$ missing$
    { pop$ pop$
      ""
    }
    { duplicate$ empty$
        { swap$ pop$
        }
        { swap$
          "\bibinfo{" swap$ * "}{" * swap$ * "}" *
        }
      if$
    }
  if$
}
FUNCTION {bibinfo.warn}
{ swap$
  duplicate$ missing$
    { swap$ "missing " swap$ * " in " * cite$ * warning$ pop$
      ""
    }
    { duplicate$ empty$
        { swap$ "empty " swap$ * " in " * cite$ * warning$
        }
        { swap$
          "\bibinfo{" swap$ * "}{" * swap$ * "}" *
        }
      if$
    }
  if$
}
```

At the end of the reference, `fin.entry` writes out a final period and line break. We will handle the start of the reference a bit later.

```
FUNCTION {fin.entry}
{ add.period$
  write$
  newline$
}
```

5.3 Convenience functions

We define some useful logical operations for use with `if$`.

```
FUNCTION {not}
{   { #0 }
    { #1 }
  if$
}
FUNCTION {and}
{   'skip$
    { pop$ #0 }
  if$
}
FUNCTION {or}
{   { pop$ #1 }
    'skip$
  if$
}
```

`new.block.checkb` consumes two tokens and starts a new block if at least one is non-empty.

```
FUNCTION {new.block.checkb}
{ empty$
  swap$ empty$
  and
    'skip$
    'new.block
  if$
}
```

`field.or.null` replaces an empty (null) field value with an empty string.

```
FUNCTION {field.or.null}
{ duplicate$ empty$
    { pop$ "" }
    'skip$
  if$
}
```

The `emphasize` function applies emphasis.

```
FUNCTION {emphasize}
{ duplicate$ empty$
```

```
    { pop$ "" }
    { "\emph{" swap$ * "}" * }
  if$
}
```

The `tie.or.space.prefix` function prefixes a string with a non-breaking space if it is up to three characters long, or a normal space otherwise.

```
FUNCTION {tie.or.space.prefix}
{ duplicate$ text.length$ #3 <
    { "~" }
    { " " }
  if$
  swap$
}
```

The `capitalize` function makes putting strings into sentence case a little more robust.

```
FUNCTION {capitalize}
{ "u" change.case$ "t" change.case$ }
```

The `space.word` function adds a space to either side of a string.

```
FUNCTION {space.word}
{ " " swap$ * " " * }
```

`either.or.check` takes a string and a field, and if the field is not empty, writes a warning to the log file.

```
FUNCTION {either.or.check}
{ empty$
    'pop$
    { "can't use both " swap$ * " fields in " * cite$ * warning$ }
  if$
}
```

`is.online` checks whether the entry should have ‘[Online]’ in it somewhere.

```
FUNCTION {is.online}
{ type$ "software" =
    { #0 }
    { url empty$ doi empty$ and
        { type$ "online" =
            { #1 }
            { #0 }
          if$
        }
        { #1 }
      if$
    }
  if$
}
```

5.4 Bibliography strings

Instead of dropping literal English words into the text of references, we will use these functions instead. This makes it easier to translate the style into other languages.

```
FUNCTION {bbl.and}
{ "and"}

FUNCTION {bbl.etal}
{ "et~al." }

FUNCTION {bbl.editors}
{ "eds" }

FUNCTION {bbl.editor}
{ "ed." }

FUNCTION {bbl.edby}
```

```
{ "edited by" }

FUNCTION {bbl.translator}
{ "Trans." }

FUNCTION {bbl.edition}
{ "ed." }

FUNCTION {bbl.volume}
{ "vol." }

FUNCTION {bbl.of}
{ "of" }

FUNCTION {bbl.number}
{ "no." }

FUNCTION {bbl.nr}
{ "no." }

FUNCTION {bbl.in}
{ "in" }

FUNCTION {bbl.pages}
{ "pp." }

FUNCTION {bbl.page}
{ "p." }

FUNCTION {bbl.chapter}
{ "chap." }

FUNCTION {bbl.techrep}
{ "Tech. Rep." }

FUNCTION {bbl.mthesis}
{ "Master's thesis" }

FUNCTION {bbl.phdthesis}
{ "Ph.D. thesis" }

FUNCTION {bbl.first}
{ "1st" }

FUNCTION {bbl.second}
{ "2nd" }

FUNCTION {bbl.third}
{ "3rd" }

FUNCTION {bbl.fourth}
{ "4th" }

FUNCTION {bbl.fifth}
{ "5th" }

FUNCTION {bbl.st}
{ "st" }

FUNCTION {bbl.nd}
{ "nd" }

FUNCTION {bbl.rd}
{ "rd" }

FUNCTION {bbl.th}
{ "th" }

FUNCTION {bbl.commission}
{ "Commission Decision" }

FUNCTION {bbl.online}
{ "[Online]" }
```

```

FUNCTION {bbl.nodate}
{ "n.d." }

FUNCTION {bbl.inpreparation}
{ "preprint" }

FUNCTION {bbl.submitted}
{ "preprint" }

FUNCTION {bbl.inpress}
{ "in press" }

FUNCTION {bbl.unpublished}
{ "Unpublished" }
```

These macros are codes that users can put in their `.bib` file instead of literal strings.

```
MACRO {jan} {"January"}

MACRO {feb} {"February"}

MACRO {mar} {"March"}

MACRO {apr} {"April"}

MACRO {may} {"May"}

MACRO {jun} {"June"}

MACRO {jul} {"July"}

MACRO {aug} {"August"}

MACRO {sep} {"September"}

MACRO {oct} {"October"}

MACRO {nov} {"November"}

MACRO {dec} {"December"}
```

This function allows us to convert cardinal numbers to English ordinals.

```
FUNCTION {eng.ord}
{ duplicate$ "1" swap$ *
  #-2 #1 substring$ "1" =
     { bbl.th * }
     { duplicate$ #-1 #1 substring$
       duplicate$ "1" =
         { pop$ bbl.st * }
         { duplicate$ "2" =
             { pop$ bbl.nd * }
             { "3" =
                 { bbl.rd * }
                 { bbl.th * }
               if$
             }
           if$
          }
       if$
     }
   if$
}
```

5.5 Name handling

`format.names` consumes two tokens (field, string field name) and returns a list of names in the form ‘Surname, Suffix, Initials Prefix’. To help with this, we define some additional integers and strings.

```
INTEGERS { nameptr namesleft numnames }
STRINGS  { bibinfo }
FUNCTION {format.names}
{ 'bibinfo :=
 duplicate$ empty$
  'skip$
  { 's :=
   "" 't :=
   #1 'nameptr :=
   s num.names$ 'numnames :=
   numnames 'namesleft :=
    { namesleft #0 > }
    { s nameptr
     "{ll}{, jj}{, f{.}.}{~vv}"
     format.name$
     bibinfo bibinfo.check
     't :=
     nameptr #1 >
      { namesleft #1 >
        { ", " * t * }
        { s nameptr "{ll}" format.name$ duplicate$ "others" =
          { 't := }
          { pop$ }
         if$
         t "others" =
          { " " * bbl.etal *
          }
          { bbl.and
           space.word * t *
          }
         if$
        }
       if$
      }
      't
     if$
     nameptr #1 + 'nameptr :=
     namesleft #1 - 'namesleft :=
    }
   while$
  }
 if$
}
```

`format.names.ed` consumes two tokens (field, string field name) and writes out a list of names in the form ‘Initials Prefix Surname Suffix’.

```
FUNCTION {format.names.ed}
{ 'bibinfo :=
 duplicate$ empty$
  'skip$
  { 's :=
   "" 't :=
   #1 'nameptr :=
   s num.names$ 'numnames :=
   numnames 'namesleft :=
    { namesleft #0 > }
    { s nameptr
     "{f{.}.~}{vv~}{ll}{ jj}"
     format.name$
     bibinfo bibinfo.check
     't :=
     nameptr #1 >
      { namesleft #1 >
        { ", " * t * }
        { s nameptr "{ll}" format.name$ duplicate$ "others" =
          { 't := }
          { pop$ }
         if$
         t "others" =
          { " " * bbl.etal *
          }
          { bbl.and
```

```
                      space.word * t *
                    }
                  if$
                }
              if$
            }
            't
          if$
          nameptr #1 + 'nameptr :=
          namesleft #1 - 'namesleft :=
        }
      while$
    }
  if$
}
```

`format.authors` returns author names.

```
FUNCTION {format.authors}
{ author "author" format.names
}
```

`format.editors` returns editor names, and appends ‘ed.’ or ‘eds’ as appropriate.

```
FUNCTION {get.bbl.editor}
{ editor num.names$ #1 > 'bbl.editors 'bbl.editor if$ }
FUNCTION {format.editors}
{ editor "editor" format.names duplicate$ empty$ 'skip$
    { "," *
      " " *
      get.bbl.editor
      *
    }
  if$
}
```

`format.translators` does likewise for translators, in the form ‘(name, Trans.)’.

```
FUNCTION {format.translators}
{ translator "translator" format.names.ed duplicate$ empty$ 'skip$
    { "," *
      " " *
      bbl.translator *
      "(" swap$ *
      ")" *
    }
  if$
}
```

`format.full.names` consumes one token (a name field) and, contrary to what the name might suggest, returns a list of names in the form ‘Prefix Surname’. It is called ‘full’ because the list is not truncated.

```
FUNCTION {format.full.names}
{'s :=
 "" 't :=
  #1 'nameptr :=
  s num.names$ 'numnames :=
  numnames 'namesleft :=
    { namesleft #0 > }
    { s nameptr
      "{vv~}{ll}" format.name$
      't :=
      nameptr #1 >
        { namesleft #1 >
            { ", " * t * }
            { s nameptr "{ll}" format.name$ duplicate$ "others" =
                { 't := }
                { pop$ }
              if$
              t "others" =
                { " " * bbl.etal *
                }
                { bbl.and
                  space.word * t *
                }
              if$
            }
          if$
        }
        't
      if$
      nameptr #1 + 'nameptr :=
      namesleft #1 - 'namesleft :=
    }
  while$
}
```

`author.editor.key.full` returns the author part of an author–year citation. In order of preference, it outputs the author surnames, editor surnames, the `key` field, or the first three characters of the entry key. It is used in `book` and `inbook` entry types.

```
FUNCTION {author.editor.key.full}
{ author empty$
    { editor empty$
        { key empty$
            { cite$ #1 #3 substring$ }
            'key
          if$
        }
        { editor format.full.names }
      if$
    }
    { author format.full.names }
  if$
}
```

`editor.key.full` does similar but skips the author names. It is used for the `proceedings` entry type.

```
FUNCTION {editor.key.full}
{ editor empty$
    { key empty$
         { cite$ #1 #3 substring$ }
          'key
      if$
    }
    { editor format.full.names }
  if$
}
```

`author.key.full` does similar but skips the editor names. It is used for all other entry types.

```
FUNCTION {author.key.full}
{ author empty$
    { key empty$
         { cite$ #1 #3 substring$ }
          'key
      if$
    }
    { author format.full.names }
  if$
}
```

`make.full.names` chooses between the above.

```
FUNCTION {make.full.names}
{ type$ "book" =
  type$ "inbook" =
  or
    'author.editor.key.full
    { type$ "proceedings" =
        'editor.key.full
        'author.key.full
      if$
    }
  if$
}
```

`output.bibitem` writes out the very start of the entry in the bibliography, which looks like `\bibitem[{author–year elements}]{entry key}`. The author–year part uses special natbib syntax: either 'Author(Year)' or 'Truncated author list(Year)Full author list'. The `calc.label` function below supplies the truncated author list, opening parenthesis and year; you see here the closing parenthesis and conditional inclusion of the full list. The function then starts a new line and puts the entry driver into the `before.all` output state.

```
FUNCTION {output.bibitem}
{ newline$
  "\bibitem[{" write$
  label write$
  ")" make.full.names duplicate$ short.list =
     { pop$ }
     { * }
   if$
  "}]{" * write$
  cite$ write$
  "}" write$
  newline$
  ""
  before.all 'output.state :=
}
```

`format.key` takes a field (author or editor). If the field is empty, it replaces it with the key field (if not non-null). Otherwise, replaces it with an empty string. It is used as a last resort to stop an entry beginning with the date.

```
FUNCTION {format.key}
{ empty$
    { key field.or.null }
    { "" }
  if$
}
```

5.6 Titles

`select.language` checks if the field before was written out, and if so, wraps `{\selectlanguage{language}\dots}` around it.

```
FUNCTION {select.language}
{ duplicate$ empty$
    'pop$
    { language empty$
        'skip$
        { "{\selectlanguage{" language * "}" * swap$ * "}" * }
      if$
    }
  if$
}
```

`format.title` returns the title and language fields, where the title should be in the upright shape.

```
FUNCTION {format.title}
{ title
  duplicate$ empty$ 'skip$
    { "t" change.case$ }
  if$
  "title" bibinfo.check
  duplicate$ empty$
    'skip$
    { select.language }
  if$
}
```

`format.btitle` returns the title and language fields, where the title should be in the italic shape.

```
FUNCTION {format.btitle}
{ title
  duplicate$ empty$ 'skip$
    { "t" change.case$ }
  if$
  "title" bibinfo.check
  duplicate$ empty$ 'skip$
    { emphasize
      select.language
    }
  if$
}
```

`format.titleaddon` returns the titleaddon field.

```
FUNCTION {format.titleaddon}
{ titleaddon
  duplicate$ empty$ 'skip$
%<bst1>    { "titleaddon" bibinfo.check }
%<bst2>    { "[" swap$ "titleaddon" bibinfo.check * "]" * }
  if$
}
```

`format.version` returns the version field.

```
FUNCTION {format.version}
{ version
  duplicate$ empty$ 'skip$
    { "(v." swap$ *
      "version" bibinfo.check
      ")" *
    }
  if$
}
```

`get.title.addenda` is a convenience for writing out the elements that normally follow the title in `mid.clause` state.

```
FUNCTION {get.title.addenda}
{ continue.clause
  format.version output
  continue.clause
  format.titleaddon output
  continue.clause
%<*bst2>
  library empty$
  type$ "image" =
  or
  is.online
  and
  journal empty$
  and
  type empty$
    type$ "booklet" = not
    type$ "audio" = not
    and
    type$ "video" = not
    and
    type$ "music" = not
    and
    type$ "movie" = not
    and
    or
  and
    { bbl.online output }
    'skip$
  if$
  continue.clause
%</bst2>
  format.translators output
}
```

`word.in` provides the ‘In:’ before book titles.

```
FUNCTION {word.in}
{ bbl.in capitalize
  ":" *
  " " * }
```

`format.booktitle` returns the booktitle field in italics.

```
FUNCTION {format.booktitle}
{ booktitle
  duplicate$ empty$ 'skip$
    { "t" change.case$ }
  if$
  "booktitle" bibinfo.check
  emphasize
}
```

`format.in.ed.booktitle` returns the booktitle, prepended by ‘In: editors, eds.’

```
FUNCTION {format.in.ed.booktitle}
{ format.booktitle duplicate$ empty$ 'skip$
    { editor "editor" format.names.ed duplicate$ empty$ 'pop$
        { "," *
          " " *
          get.bbl.editor add.period$
          " " *
          * swap$
          *
          word.in swap$ *
        }
      if$
    }
  if$
}
```

`legal.journal.shape` emphasizes the preceding string if it matches ‘OJ’ but otherwise does nothing.

```
FUNCTION {legal.journal.shape}
{ duplicate$ "OJ" =
    'emphasize
    'skip$
  if$
}
```

5.7 Dates

`nodate.check` looks at the most recent token. If it is empty, replaces it with ‘n.d.’ unless either `sortyear` or the `nodate` option is present.

```
FUNCTION {nodate.check}
{
%<bst1>  skip$
%<*bst2>
duplicate$ empty$
  sortyear empty$
  and
    { options field.or.null "nonodate" =
        'skip$
        { pop$ bbl.nodate }
      if$
    }
    'skip$
  if$
%</bst2>
}
```

`format.date` returns the year and any disambiguation label.

```
FUNCTION {format.date}
{ year "year" bibinfo.check nodate.check
  extra.label *
}
```

`format.jur.date` wraps the year and any disambiguation label in parentheses if a volume number is provided or if `year-essential=false` has been given as the `options`. If there is no volume number, or if `year-essential=true` has been given as the `options`, then the year will be wrapped in square brackets or, if `scottish-style` has been given as the `options` or `sc` as the `keywords`, left bare. But if the journal is 'OJ' or 'ECR', the date is wrapped in brackets regardless. Not complicated at all, really.

```
FUNCTION {format.date.brackets}
{ format.date
  "[" swap$ * "]" *
}
FUNCTION {format.date.parens}
{ format.date
  "(" swap$ * ")" *
}
FUNCTION {format.jur.date.essential}
{ options field.or.null "scottish-style" =
  keywords field.or.null "sc" =
  or
    'format.date
    'format.date.brackets
  if$
}
FUNCTION {format.jur.date}
{ journal field.or.null 's :=
  s "OJ" =
  s "ECR" =
  or
    'format.date.brackets
    { options field.or.null "year-essential=false" =
        'format.date.parens
        { volume empty$
            'format.jur.date.essential
            { options field.or.null "year-essential=true" =
                'format.jur.date.essential
                'format.date.parens
              if$
            }
          if$
        }
      if$
    }
  if$
}
```

`format.eu.date` wraps the year and any disambiguation label in square brackets if (and only if) the journal title is 'OJ' or 'ECR'.

```
FUNCTION {format.eu.date}
{ journal field.or.null 's :=
  s "OJ" =
  s "ECR" =
  or
    'format.date.brackets
    'format.date
  if$
}
```

5.8 Series, volumes, editions

`format.bvolume` returns the volume and series information (in italics), with a comma between. A warning is given if `number` is also given.

```
FUNCTION {format.bvolume}
{ volume empty$
    { "" }
    { bbl.volume volume tie.or.space.prefix
      "volume" bibinfo.check * *
      series "series" bibinfo.check
      duplicate$ empty$ 'pop$
```

```
        { emphasize ", " * swap$ * }
      if$
      "volume and number" number either.or.check
    }
  if$
}
```

`format.number.series` returns an empty string if a volume has been specified. Otherwise, it returns the series and the number separated by a space.

```
FUNCTION {format.number.series}
{ volume empty$
    { number empty$
        { series field.or.null }
        { series empty$
            { number "number" bibinfo.check }
            { series "series" bibinfo.check
              number tie.or.space.prefix "number" bibinfo.check * *
            }
          if$
        }
      if$
    }
    { "" }
  if$
}
```

`is.num` converts a string to an integer and ensures it is in the range 0–9.

```
FUNCTION {is.num}
{ chr.to.int$
  duplicate$ "0" chr.to.int$ < not
  swap$ "9" chr.to.int$ > not and
}
```

`extract.num` takes a string. If it begins with an integer, it returns just that integer. Otherwise it returns the whole string.

```
FUNCTION {extract.num}
{ duplicate$ 't :=
  "" 's :=
  { t empty$ not }
  { t #1 #1 substring$
    t #2 global.max$ substring$ 't :=
    duplicate$ is.num
      { s swap$ * 's := }
      { pop$ "" 't := }
    if$
  }
  while$
  s empty$
    'skip$
    { pop$ s }
  if$
}
```

`convert.edition` should operate on the edition field. If the value begins with a number (or is an English ordinal word from ‘first’ to ‘fifth’), then it returns the bibliography string version of the ordinal number (1st, 2nd, 3rd…). Otherwise, returns the edition field verbatim.

```
FUNCTION {convert.edition}
{ extract.num "l" change.case$ 's :=
  s "first" = s "1" = or
    { bbl.first 't := }
    { s "second" = s "2" = or
        { bbl.second 't := }
        { s "third" = s "3" = or
            { bbl.third 't := }
            { s "fourth" = s "4" = or
                { bbl.fourth 't := }
                { s "fifth" = s "5" = or
                    { bbl.fifth 't := }
```

```
          { s #1 #1 substring$ is.num
            { s eng.ord 't := }
            { edition 't := }
           if$
          }
         if$
        }
       if$
      }
     if$
    }
   if$
  }
 if$
 t
}
```

`format.edition` returns the converted edition field and ‘ed.’

```
FUNCTION {format.edition}
{ edition duplicate$ empty$ 'skip$
  { convert.edition
   output.state mid.sentence =
    { "l" }
    { "t" }
   if$ change.case$
   "edition" bibinfo.check
   " " * bbl.edition *
  }
 if$
}
```

If the type is provided, `format.thesis.type` deletes the preceding string (the default value) and writes the type field with an initial capital. Otherwise it does nothing.

```
FUNCTION {format.thesis.type}
{ type duplicate$ empty$
  'pop$
  { swap$ pop$
   "t" change.case$ "type" bibinfo.check
  }
 if$
}
```

If the type is provided, `format.booklet.type` writes the type field with an initial capital. Then, if this is an online work with no author/editor, the online label is added. If the type is not provided, it returns an empty string.

```
FUNCTION {format.booklet.type}
{ type duplicate$ empty$
  { pop$ "" }
  { "type" bibinfo.check
   is.online author empty$ and editor empty$ and
    { " " * bbl.online * }
    'skip$
   if$
  }
 if$
}
```

`format.tr.number` returns the series, type and number fields as one of ‘(number)’, ‘(type number)’, ‘(series, number)’, or ‘(series, type number)’. If a series is given, a `continue.clause` is inserted to remove the preceeding comma.

If the series begins ‘HL␣’, it is assumed to be a House of Lords paper, thus the number acquires additional parentheses. If it equals ‘C’, ‘Cd’, ‘Cmd’, ‘Cmnd’ or ‘Cm’, it is followed by a dot rather than a comma (implemented as `add.cmd.number`). To help with this, `format.legr.number` consumes one token (the number) and returns the series and number as one token.

```
FUNCTION {add.cmd.number}
{ ". " swap$ "number" bibinfo.check *
}
```

```
FUNCTION {format.legr.number}
{ series field.or.null 's :=
 s "C" =
  'add.cmd.number
  { s "Cd" =
    'add.cmd.number
    { s "Cmd" =
      'add.cmd.number
      { s "Cmnd" =
        'add.cmd.number
        { s "Cm" =
          'add.cmd.number
          { s #1 #3 substring$ 't :=
           t "HL " =
            { ", (" swap$
             "number" bibinfo.check *
             ")" *
            }
            { ", " swap$
             "number" bibinfo.check *
            }
           if$
          }
         if$
        }
       if$
      }
     if$
    }
   if$
  }
 if$
}
FUNCTION {format.tr.number}
{ series duplicate$ empty$
  { pop$
   type duplicate$ empty$
    { pop$
     number duplicate$ empty$
      { pop$ ""
      }
      { "(" swap$
       "number" bibinfo.check
       * ")" *
      }
     if$
    }
    { "(" swap$
     "t" change.case$ "type" bibinfo.check
     *
     number duplicate$ empty$
      'pop$
      { tie.or.space.prefix
       "number" bibinfo.check
       * *
      }
     if$
     ")" *
    }
   if$
  }
  { "(" swap$ *
   type duplicate$ empty$
    { pop$
     number duplicate$ empty$
      'pop$
      { format.legr.number * }
     if$
    }
    { "t" change.case$ "type" bibinfo.check
     *
     number duplicate$ empty$
      'pop$
```

```
            { tie.or.space.prefix
              "number" bibinfo.check
              * *
            }
          if$
        }
      if$
      ")" *
      continue.clause
    }
  if$
}
```

`format.manual.number` returns the series, type and number fields as one of '(number)', '(type number)', '(series number)', or '(series number, type)'.

```
FUNCTION {format.manual.number}
{ series duplicate$ empty$
    { pop$
      type duplicate$ empty$
        { pop$
          number duplicate$ empty$
            { pop$ ""
            }
            { "number" bibinfo.check
            }
          if$
        }
        { "t" change.case$ "type" bibinfo.check
          number duplicate$ empty$
            'pop$
            { tie.or.space.prefix
              "number" bibinfo.check
              * *
            }
          if$
        }
      if$
    }
    { number duplicate$ empty$
        'pop$
        { tie.or.space.prefix
          "number" bibinfo.check
          * *
        }
      if$
      type duplicate$ empty$
        'pop$
        { ", " swap$ *
          "t" change.case$ "type" bibinfo.check
          *
        }
      if$
    }
  if$
}
```

`format.chapter` prints out the chapter field in the form 'c.1', for use with UK primary legislation.

```
FUNCTION {format.chapter}
{ chapter duplicate$ empty$
    { pop$ "" }
    { "chapter" bibinfo.check
      "c." swap$ *
    }
  if$
}
```

`format.series.number.chapter` prints out the series and chapter/number fields in the form '(series, c.1)' or '(series, number)', for use with UK legislation.

```
FUNCTION {format.series.number.chapter}
{ series duplicate$ empty$
    { pop$ "(" }
    { "series" bibinfo.check
      "(" swap$ *
    }
  if$
  type duplicate$ empty$
    { pop$
      number duplicate$ empty$
        'pop$
        { "number" bibinfo.check
          swap$ duplicate$ "(" =
            { swap$ * }
            { ", " * swap$ * }
          if$
        }
      if$
      chapter duplicate$ empty$
        'pop$
        { "chapter" bibinfo.check
          swap$ duplicate$ "(" =
            { swap$ * }
            { ", c." * swap$ * }
          if$
        }
      if$
    }
    { "type" bibinfo.check
      swap$ duplicate$ "(" =
        { swap$ * }
        { ", " * swap$ * }
      if$
      number duplicate$ empty$
        { pop$
          chapter duplicate$ empty$
            'pop$
            { "chapter" bibinfo.check
              " c." swap$ * *
            }
          if$
        }
        { "number" bibinfo.check
          " " swap$ * *
          chapter duplicate$ empty$
            'pop$
            { "chapter" bibinfo.check
              ", c." swap$ * *
            }
          if$
        }
      if$
    }
  if$
  ")" *
  duplicate$ "()" =
    { pop$ "" }
    'skip$
  if$
}
```

`format.case.number` returns the number field, suppressing punctuation, or inserts a period. In the case of EU Commission Decisions, the format is ‘(userb) Commission Decision number‘

```
FUNCTION {format.case.number}
{ casenumber duplicate$ empty$
    { pop$
      number duplicate$ empty$
        { pop$ "" }
        { institution field.or.null "Commission" =
          userb empty$ not
          and
            { userb "userb" bibinfo.check
```

```
       "(" swap$ * ") " * bbl.commission * " " *
       swap$ "number" bibinfo.check *
      }
      { "number" bibinfo.check
      "(" swap$ * ")" *
      }
     if$
    }
   if$
  }
  { "casenumber" bibinfo.check
   "(" swap$ * ")" *
   institution field.or.null "Commission" =
   number empty$ not
   and
    { " " * bbl.commission * " " *
     number "number" bibinfo.check *
    }
    'skip$
   if$
  }
 if$
}
```

`eu.case.check` checks if the case is in OJ or has a number, in which case punctuation is suppressed.

```
FUNCTION {eu.case.check}
{ journal field.or.null "OJ" =
 number empty$ not
 or
 casenumber empty$ not
 or
  'continue.clause
  'new.block
 if$
}
```

5.9 Notes

`format.note` returns the note field, but changes the case of the first letter according to the output state (unless protected by braces).

```
FUNCTION {format.note}
{ note empty$
  { "" }
  { note #1 #1 substring$
   duplicate$ "{" =
    'skip$
    { output.state mid.sentence =
     output.state mid.clause =
     or
      { "l" }
      { "u" }
     if$
     change.case$
    }
   if$
   note #2 global.max$ substring$ * "note" bibinfo.check
  }
 if$
}
```

5.10 Addresses and publishers

`format.org.or.pub` intercepts a publisher (or whatever) being written out as bibinfo. If the write will succeed and an address has been specified, the address is written out first, then a colon and space; then the original write is allowed to proceed.

```
FUNCTION {format.org.or.pub}
{ 't :=
  ""
  address empty$ t empty$ and
    'skip$
    { address "address" bibinfo.check *
      t empty$
        'skip$
        { address empty$
            'skip$
            { ": " * }
          if$
          t *
        }
      if$
    }
  if$
}
```

The next three functions write out the address plus the publisher, organization and institution respectively.

```
FUNCTION {format.publisher.address}
{ publisher "publisher" bibinfo.warn format.org.or.pub
}
FUNCTION {format.organization.address}
{ publisher empty$
    { organization "organization" bibinfo.check format.org.or.pub }
    { publisher "publisher" bibinfo.warn format.org.or.pub
      organization duplicate$ empty$
        'pop$
        { "organization" bibinfo.check ". " * swap$ * }
      if$
    }
  if$
}
FUNCTION {format.institution.address}
{ publisher empty$
    { institution "institution" bibinfo.check format.org.or.pub }
    { publisher "publisher" bibinfo.warn format.org.or.pub
      institution duplicate$ empty$
        'pop$
        { "institution" bibinfo.check ". " * swap$ * }
      if$
    }
  if$
}
```

We add a macro for printing the library (repository) holding an eprint.

```
FUNCTION {format.library}
{ library "library" bibinfo.check
  emphasize
%<*bst2>
  duplicate$ empty$ not
  is.online
  and
  journal empty$
  and
    { " " * bbl.online * }
    'skip$
  if$
%</bst2>
}
```

The library field is also used for where a physical image is kept. As we have only one address field, it will attach to whichever is present out of organization, publisher and library. In case there is more than one, it will attach to `publisher` in preference to `library` and `library` in preference to `organization`.

```
FUNCTION {format.img.library}
{ library duplicate$ empty$
```

```
  { pop$ "" }
  { "library" bibinfo.check
   "At: " swap$ *
  }
 if$
}
FUNCTION {format.img.library.address}
{ address empty$ library empty$ and institution empty$ and
  { "" }
  { "At: "
   address "address" bibinfo.check *
   library duplicate$ empty$
    { institution duplicate$ empty$
      { pop$ "" }
      { address empty$
       'skip$
       { ". " swap$ }
       if$
       "institution" bibinfo.check * *
      }
     if$
    }
    { address empty$
      'skip$
      { ". " swap$ }
     if$
     "library" bibinfo.check * *
    }
   if$
  }
 if$
}
FUNCTION {format.pub.org.lib.address}
{ publisher duplicate$ empty$
 { pop$
  organization duplicate$ empty$
   { pop$
    format.img.library.address }
   { "organization" bibinfo.check
    library empty$
     { format.org.or.pub }
     { ". " *
      format.img.library.address *
     }
    if$
   }
  if$
 }
 { "publisher" bibinfo.warn format.org.or.pub
  library empty$
   'skip$
   { ". " *
    format.img.library *
   }
  if$
 }
 if$
}
```

5.11 Pinpointing

`multi.page.check` should operate on the pages field. If the value is a range, that is, contains '-', ',' or '+', returns 1, otherwise returns 0.

```
INTEGERS { multiresult }
FUNCTION {multi.page.check}
{ 't :=
 #0 'multiresult :=
  { multiresult not
   t empty$ not
   and
  }
  { t #1 #1 substring$
    duplicate$ "-" =
    swap$ duplicate$ "," =
    swap$ "+" =
    or or
      { #1 'multiresult := }
      { t #2 global.max$ substring$ 't := }
    if$
  }
 while$
 multiresult
}
```

`n.dashify` converts hyphens in page ranges into en dashes.

```
FUNCTION {n.dashify}
{ 't :=
 ""
  { t empty$ not }
  { t #1 #1 substring$ "-" =
      { t #1 #2 substring$ "--" = not
          { "--" *
            t #2 global.max$ substring$ 't :=
          }
          {   { t #1 #1 substring$ "-" = }
              { "-" *
                t #2 global.max$ substring$ 't :=
              }
            while$
          }
        if$
      }
      { t #1 #1 substring$ *
        t #2 global.max$ substring$ 't :=
      }
    if$
  }
 while$
}
```

`format.pages` returns the pages fields, prefixed by ‘p.’ or ‘pp.’ as appropriate.

```
FUNCTION {format.pages}
{ pages duplicate$ empty$ 'skip$
  { duplicate$ multi.page.check
      { bbl.pages swap$
        n.dashify
      }
      { bbl.page swap$
      }
    if$
    "pages" bibinfo.check
    *
  }
 if$
}
```

`format.journal.pages` does similar, but it looks at the preceding string and, if both are non-empty, inserts a comma between it and the pages string.

```
FUNCTION {format.journal.pages}
{ pages duplicate$ empty$ 'pop$
  { swap$ duplicate$ empty$
      { pop$ pop$ format.pages }
      { ", " *
        swap$
        n.dashify
        pages multi.page.check
          'bbl.pages
          'bbl.page
        if$
        swap$
```

```
          "pages" bibinfo.check
          * *
        }
      if$
    }
  if$
}
```

`format.journal.eid` returns the EID, but it looks at the preceding string and, if both are non-empty, inserts a comma between it and the EID string. The EID is a code used by some online-only journals to identify an article within a volume or issue instead of a page range (since the page numbering resets for each article, not each volume/issue).

```
FUNCTION {format.journal.eid}
{ eid "eid" bibinfo.check
  duplicate$ empty$ 'pop$
    { swap$ duplicate$ empty$ 'skip$
      { ", " *
      }
      if$
      swap$ *
    }
  if$
}
```

`format.vol.num.pages` returns the journal pinpointing in the form 'volume(number), eid/pages'. It writes a warning to the log if `number` is given instead of `volume`: if a journal does not organize itself into volumes, treat every issue as its own volume! Since the Harvard (Bath) style places publication state information in the volume position, the `pubstate` field from biblatex is emulated here.

```
FUNCTION {format.vol.num.pages}
{ pubstate field.or.null
  duplicate$ "inpress" =
    { pop$ bbl.inpress }
    { duplicate$ "submitted" =
        { pop$ bbl.submitted }
        { duplicate$ "inpreparation" =
            { pop$ bbl.inpreparation }
            { pop$ "" }
          if$
        }
      if$
    }
  if$
  duplicate$ empty$
    { pop$
      volume field.or.null
      duplicate$ empty$ 'skip$
        { "volume" bibinfo.check
        }
      if$
      number "number" bibinfo.check duplicate$ empty$ 'skip$
        { swap$ duplicate$ empty$
            { "there's a number but no volume in " cite$ * warning$ }
            'skip$
          if$
          swap$
          "(" swap$ * ")" *
        }
      if$ *
      eid empty$
        { format.journal.pages }
        { format.journal.eid }
      if$
    }
    'skip$
  if$
}
```

`format.chapter.pages` returns pinpointing information for books, in the form 'chap. chapter, p.pages'.

```
FUNCTION {format.chapter.pages}
{ chapter empty$
    'format.pages
    { type empty$
        { bbl.chapter }
        { type "l" change.case$
          "type" bibinfo.check
        }
      if$
      chapter tie.or.space.prefix
      "chapter" bibinfo.check
      * *
      pages empty$
        'skip$
        { ", " * format.pages * }
      if$
    }
  if$
}
```

`format.journal.series.vol.pages` returns the journal title and pinpointing in the form ‘volume journal pages’, ‘journal volume-pages’ or ‘journal series volume/pages’, depending on the journal.

```
FUNCTION {format.journal.series.vol.pages}
{ journal field.or.null
  duplicate$ "OJ" =
    { "journal" bibinfo.check
      emphasize
      series empty$
      volume empty$
      and
      pages empty$
      and
        'skip$
        { " " * }
      if$
      series "series" bibinfo.check
      volume "volume" bibinfo.check *
      duplicate$ empty$
        'skip$
        { pages field.or.null duplicate$ empty$
            'skip$
            { "/" swap$ *
            }
          if$ *
        }
      if$ *
    }
    { duplicate$ "ECR" =
        { "journal" bibinfo.check
          volume "volume" bibinfo.check
          duplicate$ empty$
            'skip$
            { " " swap$ * "--" * * }
          if$
        }
        { "journal" bibinfo.check
%<*bst2>
          is.online
            { " " * bbl.online * }
            'skip$
          if$
%</bst2>
          volume "volume" bibinfo.check
          duplicate$ empty$
            'pop$
            { " " * swap$ * }
          if$
          pages empty$
          eid empty$
          and
      'skip$
      { " " * }
     if$
    }
   if$
  }
 if$
 eid empty$
  { pages "pages" bibinfo.check * }
  { eid "eid" bibinfo.check * }
 if$
}
```

5.12 URLs

`format.eprint` constructs a string `\eprint[archive]{eprint}`.

```
FUNCTION {format.eprint}
{ eprint duplicate$ empty$
  'skip$
  { "\eprint"
   archive empty$
    'skip$
    { "[" * archive * "]" * }
   if$
   "{" * swap$ * "}" *
  }
 if$
}
```

`format.url` constructs a string `Available from: \url{url} [Accessed urldate]`.

```
FUNCTION {format.url}
{ doi empty$
  { url }
  { "https://doi.org/" doi * }
 if$
 duplicate$ empty$
  { pop$ "" }
  { "\urlprefix\url{" swap$ * "}" * }
 if$
 urlyear empty$
  { urldate empty$
    'skip$
    { " [\urldateprefix{}" * urldate * "]" * }
   if$
  }
  { " [\urldateprefix{}" * urlyear * "]" * }
 if$
}
```

5.13 Cross referencing between entries

The following functions are used for entries that look like ‘Author, (Year). Title. In: Author (Year).’ In practice, they should never be used with Harvard (Bath).

```
FUNCTION {format.article.crossref}
{ word.in
 " \cite{" * crossref * "}" *
}
FUNCTION {format.incoll.inproc.crossref}
{ word.in
 " \cite{" * crossref * "}" *
}
```

`format.book.crossref` is a bit different as it is intended for cases where the given book is volume X of a larger work: ‘Author, (Year). Title. Vol. volume of Author (Year).’ In the absence of a volume, writes a warning to the log and behaves like the above.

```
FUNCTION {format.book.crossref}
{ volume duplicate$ empty$
    { "empty volume in " cite$ * "'s crossref of " * crossref * warning$
      pop$ word.in
    }
    { bbl.volume
      capitalize
      swap$ tie.or.space.prefix "volume" bibinfo.check * * bbl.of space.word *
    }
  if$
  " \cite{" * crossref * "}" *
}
```

5.14 Formatting drivers for specific entry types

These functions are called when an entry of the given type is being formatted.

5.14.1 Article

```
FUNCTION {article}
{ output.bibitem
  format.authors "author" output.check
  author format.key output
  format.date "year" output.check
  date.block
  format.title "title" output.check
  get.title.addenda
  new.block
  crossref missing$
    { journal "t" change.case$
      "journal" bibinfo.check
      emphasize
      "journal" output.check
%<*bst2>
      is.online
        { continue.clause
          bbl.online output
        }
        'skip$
      if$
%</bst2>
      format.vol.num.pages output
    }
    { format.article.crossref output.nonnull
      format.pages output
    }
  if$
  new.block
  format.note output
  new.block
  format.eprint output
  format.url output
  fin.entry
}
```

5.14.2 Book

```
FUNCTION {book}
{ output.bibitem
  author empty$
    { editor empty$
        { format.btitle "title" output.check
          format.date "year" output.check
          year empty$ 'skip$ { date.block } if$
          get.title.addenda
        }
        { format.editors "author and editor" output.check
          editor format.key output
          format.date "year" output.check
          date.block
          format.btitle "title" output.check
          get.title.addenda
        }
      if$
    }
    { format.authors output.nonnull
      crossref missing$
        { "author and editor" editor either.or.check }
        'skip$
      if$
      format.date "year" output.check
      date.block
      format.btitle "title" output.check
      get.title.addenda
    }
  if$
  format.bvolume output
  format.number.series output
  new.block
  format.edition output
  crossref missing$
    { new.sentence
      format.publisher.address output
    }
    { new.block
      format.book.crossref output.nonnull
    }
  if$
  new.block
  format.note output
  new.block
  format.eprint output
  format.url output
  fin.entry
}
```

5.14.3 Unpublished or self-published monograph

```
FUNCTION {booklet}
{ output.bibitem
  author empty$
    { format.btitle "title" output.check
      format.date "year" output.check
      year empty$ 'skip$ { date.block } if$
      get.title.addenda
    }
    { format.authors output
      author format.key output
      format.date "year" output.check
      date.block
      format.btitle "title" output.check
      get.title.addenda
    }
  if$
  new.block
  format.booklet.type output
  new.block
  howpublished "howpublished" bibinfo.check output
  new.block
  format.note output
  publisher empty$ 'skip$
    { new.block}
  if$
  format.publisher.address output
  new.block
  format.eprint output
  format.url output
  fin.entry
}
```

5.14.4 Work in book

```
FUNCTION {inbook}
{ output.bibitem
  author empty$
    { format.editors "author and editor" output.check
      editor format.key output
    }
    { format.authors output.nonnull
      crossref missing$
        { "author and editor" editor either.or.check }
        'skip$
      if$
    }
  if$
  format.date "year" output.check
  date.block
  format.btitle "title" output.check
  get.title.addenda
  crossref missing$
    { format.publisher.address output
      format.bvolume output
      format.chapter.pages "chapter and pages" output.check
      new.block
      format.number.series output
      new.sentence
    }
    { format.chapter.pages "chapter and pages" output.check
      new.block
      format.book.crossref output.nonnull
    }
  if$
  format.edition output
  new.block
  format.note output
  new.block
  format.eprint output
  format.url output
  fin.entry
}
```

5.14.5 Work in collection

```
FUNCTION {incollection}
{ output.bibitem
  format.authors "author" output.check
  author format.key output
  format.date "year" output.check
  date.block
  format.title "title" output.check
  get.title.addenda
  new.block
  crossref missing$
    { format.in.ed.booktitle "booktitle" output.check
      new.block
      format.publisher.address output
      format.bvolume output
      format.number.series output
      format.chapter.pages output
      new.sentence
      format.edition output
    }
    { format.incoll.inproc.crossref output.nonnull
      format.chapter.pages output
    }
  if$
  new.block
  format.note output
  new.block
  format.eprint output
  format.url output
  fin.entry
}
```

5.14.6 Conference paper

```
FUNCTION {inproceedings}
{ output.bibitem
  format.authors "author" output.check
  author format.key output
  format.date "year" output.check
  date.block
  format.title "title" output.check
  get.title.addenda
  new.block
  crossref missing$
    { format.in.ed.booktitle "booktitle" output.check
      eventyear output
      venue output
      new.sentence
      publisher empty$
        { format.organization.address output }
        { organization "organization" bibinfo.check output
          format.publisher.address output
        }
      if$
      format.bvolume output
      format.number.series output
      format.pages output
    }
    { format.incoll.inproc.crossref output.nonnull
      format.pages output
    }
  if$
  new.block
  format.note output
  new.block
  format.eprint output
  format.url output
  fin.entry
}
FUNCTION {conference} { inproceedings }
```

5.14.7 Legal case studies

```
FUNCTION {jurisdiction}
{ output.bibitem
  author empty$
    { format.btitle "title" output.check
      continue.clause
      format.case.number output
      number empty$
      casenumber empty$
      and
        'new.sentence
        'continue.clause
      if$
      format.jur.date "year" output.check
      year empty$ 'skip$ { eu.case.check } if$
      get.title.addenda
    }
    { format.authors output
      author format.key output
      format.jur.date "year" output.check
      date.block
      continue.clause
      format.btitle "title" output.check
      get.title.addenda
    }
  if$
  eu.case.check
  format.note output
  note empty$
    'eu.case.check
    'new.block
  if$
  crossref missing$
    { continue.clause
      format.journal.series.vol.pages output
    }
    { format.article.crossref output.nonnull
      format.pages output
    }
  if$
  new.block
  format.eprint output
  format.url output
  fin.entry
}
```

5.14.8 Legislation

```
FUNCTION {uklegislation}
{ output.bibitem
  author empty$
    { format.btitle "title" output.check
      continue.clause
      format.date emphasize "year" output.check
      get.title.addenda
    }
    { format.authors output
      author format.key output
      format.date "year" output.check
      date.block
      continue.clause
      format.btitle "title" output.check
      get.title.addenda
    }
  if$
  entrysubtype field.or.null "secondary" =
    { number "number" bibinfo.check output }
    { series empty$ type empty$ and
        { number empty$
            { format.chapter output }
            { continue.clause
              format.series.number.chapter output
            }
          if$
        }
        { chapter empty$
            { new.block }
            { continue.clause }
          if$
          format.series.number.chapter output
        }
      if$
    }
  if$
  note empty$
    'skip$
    { new.block
      format.note output
      new.block
    }
  if$
  publisher empty$ 'skip$
    { entrysubtype field.or.null "secondary" =
        'skip$
        { new.block }
      if$
      format.publisher.address output
    }
  if$
  new.block
  format.eprint output
  format.url output
  fin.entry
}
FUNCTION {eulegislation}
{ output.bibitem
  author empty$
  { format.title "title" output.check
    continue.clause
    format.eu.date "year" output.check
    get.title.addenda
  }
  { format.authors output
    author format.key output
    format.eu.date "year" output.check
    date.block
    continue.clause
    format.title "title" output.check
    get.title.addenda
  }
  if$
  eu.case.check
  format.note output
  note empty$
    'eu.case.check
    'new.block
  if$
  crossref missing$
    { continue.clause
      format.journal.series.vol.pages output
    }
    { format.article.crossref output.nonnull
      format.pages output
    }
  if$
  new.block
  format.eprint output
  format.url output
  fin.entry
}
FUNCTION {legislation}
{ journal empty$
    'uklegislation
    'eulegislation
  if$
}
```

5.14.9 Manual

```
FUNCTION {manual}
{ output.bibitem
  author empty$
    { format.btitle "title" output.check
      format.date "year" output.check
      year empty$ 'skip$ { date.block } if$
      get.title.addenda
    }
    { format.authors output
      author format.key output
      format.date "year" output.check
      date.block
      format.btitle "title" output.check
      get.title.addenda
    }
  if$
  format.edition output
  new.block
  format.manual.number output
  new.block
  format.library output
  organization address new.block.checkb
  format.organization.address output
  new.block
  format.note output
  new.block
  format.eprint output
  format.url output
  fin.entry
}
```

5.14.10 Image

```
FUNCTION {image}
{ output.bibitem
  author empty$
  { format.btitle "title" output.check
    format.date "year" output.check
    year empty$ 'skip$ { date.block } if$
    get.title.addenda
  }
  { format.authors output
    author format.key output
    format.date "year" output.check
    date.block
    format.btitle "title" output.check
    get.title.addenda
  }
  if$
  format.edition output
  new.block
  format.manual.number output
  new.block
  format.pub.org.lib.address output
  new.block
  format.note output
  new.block
  format.eprint output
  format.url output
  fin.entry
}
```

5.14.11 Master’s thesis

```
FUNCTION {mastersthesis}
{ output.bibitem
  format.authors "author" output.check
  author format.key output
  format.date "year" output.check
  date.block
  format.btitle "title" output.check
  get.title.addenda
  new.block
  bbl.mthesis format.thesis.type output.nonnull
  new.block
  school "school" bibinfo.warn output
  address "address" bibinfo.check output
  new.block
  format.note output
  new.block
  format.eprint output
  format.url output
  fin.entry
}
```

5.14.12 Miscellaneous

```
FUNCTION {misc}
{ output.bibitem
  author empty$
    { format.title "title" output.check
      format.date "year" output.check
      year empty$ 'skip$ { date.block } if$
      get.title.addenda
    }
    { format.authors output
      author format.key output
      format.date "year" output.check
      date.block
      format.title "title" output.check
      get.title.addenda
    }
  if$
  new.block
  howpublished "howpublished" bibinfo.check output
  new.block
  format.note output
  new.block
  format.eprint output
  format.url output
  fin.entry
}
```

5.14.13 Doctoral thesis

```
FUNCTION {phdthesis}
{ output.bibitem
  format.authors "author" output.check
  author format.key output
  format.date "year" output.check
  date.block
  format.btitle "title" output.check
  get.title.addenda
  new.block
  bbl.phdthesis format.thesis.type output.nonnull
  new.block
  school "school" bibinfo.warn output
  address "address" bibinfo.check output
  new.block
  format.note output
  new.block
  format.eprint output
  format.url output
  fin.entry
}
```

5.14.14 Conference proceedings

```
FUNCTION {proceedings}
{ output.bibitem
  editor empty$
    { format.btitle "title" output.check
      format.date "year" output.check
      year empty$ 'skip$ { date.block } if$
      get.title.addenda
    }
    { format.editors output
      editor format.key output
      format.date "year" output.check
      date.block
      format.btitle "title" output.check
      get.title.addenda
    }
  if$
  format.bvolume output
  format.number.series output
  new.sentence
  publisher empty$
    { format.organization.address output }
    { organization "organization" bibinfo.check output
      format.publisher.address output
    }
  if$
  new.block
  format.note output
  new.block
  format.eprint output
  format.url output
  fin.entry
}
```

5.14.15 Report

```
FUNCTION {techreport}
{ output.bibitem
  author empty$
    { format.btitle "title" output.check
      format.date "year" output.check
      year empty$ 'skip$ { date.block } if$
      get.title.addenda
    }
    { format.authors output
      author format.key output
      format.date "year" output.check
      date.block
      format.btitle "title" output.check
      get.title.addenda
    }
  if$
  new.block
  format.tr.number output
  new.block
  publisher empty$
    { format.institution.address output }
    { institution "institution" bibinfo.check output
      format.publisher.address output
    }
  if$
  new.block
  format.library output
  new.block
  format.note output
  new.block
  format.eprint output
  format.url output
  fin.entry
}
```

5.14.16 Unpublished works

```
FUNCTION {unpublished}
{ output.bibitem
  author empty$
    { booktitle empty$ 'format.btitle 'format.title if$ "title" output.check
      format.date "year" output.check
      year empty$ 'skip$ { date.block } if$
      get.title.addenda
    }
    { format.authors output
      author format.key output
      format.date "year" output.check
      date.block
      booktitle empty$ 'format.btitle 'format.title if$ "title" output.check
      get.title.addenda
    }
  if$
  new.block
  format.in.ed.booktitle output
  new.block
  howpublished "howpublished" bibinfo.check output
  new.block
  bbl.unpublished output
  new.block
  format.note output
  new.block
  format.eprint output
  format.url output
  fin.entry
}
```

5.14.17 Aliases and fallbacks

Here are a list of aliases supported by this style.

```
FUNCTION {letter}
{ journal empty$
    'unpublished
    'article
  if$
}
FUNCTION {audio} { booklet }
FUNCTION {movie} { booklet }
FUNCTION {music} { booklet }
FUNCTION {video} { booklet }
FUNCTION {dataset} { manual }
FUNCTION {electronic} { manual }
FUNCTION {online} { manual }
FUNCTION {patent} { manual }
FUNCTION {software} { manual }
FUNCTION {standard} { manual }
FUNCTION {www} { manual }
FUNCTION {thesis} { phdthesis }
FUNCTION {report} { techreport }
```

The fallback driver is `misc`, as with most styles.

```
FUNCTION {default.type} { misc }
```

5.15 Bibliography processing

We are now ready for BibTEX to read in the `.bib` file.

```
READ
```

These functions are used to generate a sort key for each entry in the `.bib` file. `sortify` strips out LATEX commands, spaces and ASCII symbols, and converts to lowercase.

```
FUNCTION {sortify}
{ purify$
  "l" change.case$
}
```

`chop.word` takes a string *s*, an integer *len*, and a prefix (stop) string. If the first *len* characters of *s* match the prefix, those characters are stripped off *s*.

```
INTEGERS { len }
FUNCTION {chop.word}
{ 's :=
  'len :=
  s #1 len substring$ =
    { s len #1 + global.max$ substring$ }
    's
  if$
}
```

`format.lab.names` is similar to `format.full.names`, the main difference being that if there are more than 3 names in the list, the second and subsequent names are replaced with ‘et al.’

```
FUNCTION {format.lab.names}
{'s :=
 "" 't :=
  #1 'nameptr :=
  s num.names$ 'numnames :=
  numnames 'namesleft :=
    { namesleft #0 > }
    { s nameptr
      "{vv~}{ll}" format.name$
      't :=
      nameptr #1 >
        { nameptr #2 =
          numnames #3 > and
            { "others" 't :=
              #1 'namesleft := }
            'skip$
          if$
          namesleft #1 >
            { ", " * t * }
            { s nameptr "{ll}" format.name$ duplicate$ "others" =
                { 't := }
                { pop$ }
              if$
              t "others" =
                { " " * bbl.etal *
                }
                { bbl.and
                  space.word * t *
                }
              if$
            }
          if$
        }
        't
      if$
      nameptr #1 + 'nameptr :=
      namesleft #1 - 'namesleft :=
    }
  while$
}
```

`author.editor.key.label` is the analogue of `author.editor.key.full` but with a truncated list of author/editor names.

```
FUNCTION {author.editor.key.label}
{ author empty$
    { editor empty$
        { key empty$
            { title empty$
                { cite$ #1 #3 substring$ }
                { title
                  type$ "book" =
                    { emphasize }
                    'skip$
                  if$
                }
              if$
            }
            'key
          if$
        }
        { editor format.lab.names }
      if$
    }
    { author format.lab.names }
  if$
}
```

`editor.key.label` is the analogue of `editor.key.full` but with a truncated list of editor names.

```
FUNCTION {editor.key.label}
{ editor empty$
    { key empty$
        { title empty$
            { cite$ #1 #3 substring$ }
            { title emphasize }
          if$
        }
        'key
      if$
    }
    { editor format.lab.names }
  if$
}
```

`author.key.label` is the analogue of `author.key.full` but with a truncated list of author names.

```
FUNCTION {author.key.label}
{ author empty$
    { key empty$
        { title empty$
            { cite$ #1 #3 substring$ }
            { title
              type$ "article" =
              type$ "incollection" =
              or
              type$ "inproceedings" =
              or
              type$ "misc" =
              or
                'skip$
                { emphasize }
              if$
            }
          if$
        }
        'key
      if$
    }
    { author format.lab.names }
  if$
}
```

`calc.short.authors` chooses between the above.

```
FUNCTION {calc.short.authors}
{ type$ "book" =
  type$ "inbook" =
  or
    'author.editor.key.label
    { type$ "proceedings" =
        'editor.key.label
        'author.key.label
      if$
    }
  if$
  'short.list :=
}
```

`calc.label` creates a string in the form ‘Truncated Author List(Year’. The closing parenthesis is supplied by `output.bibitem` (see above), into which this string is incorporated.

```
FUNCTION {calc.label}
{ calc.short.authors
  short.list
  "("
  *
  year nodate.check duplicate$ empty$
     { pop$ "" }
     'skip$
  if$
  *
  'label :=
}
```

`sort.format.names` consumes one token (a field) and constructs a list of names in the form ‘Surname Forename Prefix Suffix’, with just spaces between adjacent names and ‘zzzzz’ used in place of ‘et al.’

```
FUNCTION {sort.format.names}
{ 's :=
  #1 'nameptr :=
  ""
  s num.names$ 'numnames :=
  numnames 'namesleft :=
    { namesleft #0 > }
    { s nameptr
      "{ll{ }}{  f{ }}{  jj{ }}{ vv{}}"
      format.name$ 't :=
      nameptr #1 >
        { "   "  *
          namesleft #1 =
          t "others" =
          and
            { "zzzzz" 't := }
            'skip$
          if$
          t sortify *
        }
        { t sortify * }
      if$
      nameptr #1 + 'nameptr :=
      namesleft #1 - 'namesleft :=
    }
  while$
}
```

`sort.format.title` strips off initial articles from the preceding field and normalizes what remains using `sortify` (see above).

```
FUNCTION {sort.format.title}
{ 't :=
  "A " #2
    "An " #3
      "The " #4 t chop.word
    chop.word
  chop.word
  sortify
  #1 global.max$ substring$
}
```

`author.editor.sort` creates a string for use when sorting the entry in the bibliography. In order of preference, the string is based on author, editor, title or the `key` field.

```
FUNCTION {author.editor.sort}
{ author empty$
    { editor empty$
        { title empty$
            { key empty$
                { "to sort, need author, editor, title, or key in " cite$ * warning$
                  ""
                }
                { key sortify }
              if$
            }
            { title sort.format.title }
          if$
        }
        { editor sort.format.names }
      if$
    }
    { author sort.format.names }
  if$
}
```

`editor.sort` does similar but skips the author names.

```
FUNCTION {editor.sort}
{ editor empty$
    { title empty$
        { key empty$
            { "to sort, need editor, title, or key in " cite$ * warning$
              ""
            }
            { key sortify }
          if$
        }
        { title sort.format.title }
      if$
    }
    { editor sort.format.names }
  if$
}
```

`author.sort` does similar but skips the editor names.

```
FUNCTION {author.sort}
{ author empty$
    { title empty$
        { key empty$
            { "to sort, need author, title, or key in " cite$ * warning$
              ""
            }
            { key sortify }
          if$
        }
        { title sort.format.title }
      if$
    }
    { author sort.format.names }
  if$
}
```

`presort` constructs the `sort.label` from the `calc.label` and one of the above three functions. It also constructs the `sort.key$` (used by SORT) from the `sort.label` and the title.

```
FUNCTION {presort}
{ calc.label
  label sortify
  "    "
  *
  type$ "book" =
  type$ "inbook" =
  or
    'author.editor.sort
    { type$ "proceedings" =
        'editor.sort
        'author.sort
      if$
    }
  if$
  #1 entry.max$ substring$
  'sort.label :=
  sort.label
  *
  "    "
  *
  title field.or.null
  sort.format.title
  *
  #1 entry.max$ substring$
  'sort.key$ :=
}
```

We now tell BibTEX to go through each entry in turn and apply the `presort` function, then use the resultant sort keys to put the entries in order.

```
ITERATE {presort}
SORT
```

If there are any duplicate author–year combinations, these functions detect them and disambiguate them by adding a letter to the year.

```
STRINGS { last.label next.extra }
INTEGERS { last.extra.num last.extra.num.extended last.extra.num.blank number.label }
FUNCTION {initialize.extra.label.stuff}
{ #0 int.to.chr$ 'last.label :=
  "" 'next.extra :=
  #0 'last.extra.num :=
  "a" chr.to.int$ #1 - 'last.extra.num.blank :=
  last.extra.num.blank 'last.extra.num.extended :=
  #0 'number.label :=
}
FUNCTION {forward.pass}
{ last.label label =
    { last.extra.num #1 + 'last.extra.num :=
      last.extra.num "z" chr.to.int$ >
       { "a" chr.to.int$ 'last.extra.num :=
         last.extra.num.extended #1 + 'last.extra.num.extended :=
       }
       'skip$
      if$
      last.extra.num.extended last.extra.num.blank >
        { last.extra.num.extended int.to.chr$
          last.extra.num int.to.chr$
          * 'extra.label := }
        { last.extra.num int.to.chr$ 'extra.label := }
      if$
    }
    { "a" chr.to.int$ 'last.extra.num :=
      "" 'extra.label :=
      label 'last.label :=
    }
  if$
  number.label #1 + 'number.label :=
}
FUNCTION {reverse.pass}
{ next.extra "b" =
    { "a" 'extra.label := }
    'skip$
  if$
  extra.label 'next.extra :=
  extra.label
  duplicate$ empty$
    'skip$
    { "{\natexlab{" swap$ * "}}" * }
  if$
  'extra.label :=
  label extra.label * 'label :=
}
```

Applying these functions is a bit more tricky, but once we have done that, we re-sort the entries to make absolutely sure they in the right order, this time wih the year between with `sort.label` and the title.

```
EXECUTE {initialize.extra.label.stuff}
ITERATE {forward.pass}
REVERSE {reverse.pass}
FUNCTION {bib.sort.order}
{ sort.label
  "    "
  *
  year field.or.null sortify
  *
  "    "
  *
  title field.or.null
  sort.format.title
  *
  #1 entry.max$ substring$
  'sort.key$ :=
}
ITERATE {bib.sort.order}
SORT
```

We now write out the beginning of the bibliography to a .bbl file. This includes opening a LaTeX environment, `thebibliography`, and some user-redefinable strings.

```
FUNCTION {begin.bib}
{ preamble$ empty$
    'skip$
    { preamble$ write$ newline$ }
  if$
  "\begin{thebibliography}{" number.label int.to.str$ * "}" *
  write$ newline$
  "\providecommand{\natexlab}[1]{#1}"
  write$ newline$
  "\providecommand{\url}[1]{\texttt{#1}}"
  write$ newline$
  "\providecommand{\urlprefix}{Available from: }"
  write$ newline$
  "\providecommand{\urldateprefix}{Accessed }"
  write$ newline$
  "\providecommand{\selectlanguage}[1]{\relax}"
  write$ newline$
  "\providecommand{\bibinfo}[2]{#2}"
  write$ newline$
  "\providecommand{\eprint}[2][]{\url{#2}}"
  write$ newline$
}
EXECUTE {begin.bib}
EXECUTE {init.state.consts}
```

We go through each entry in turn, in the right order, and write the formatted text out to the file.

```
ITERATE {call.type$}
```

After the last entry, we close the LaTeX environment and stop writing to the .bbl file.

```
FUNCTION {end.bib}
{ newline$
  "\end{thebibliography}" write$ newline$
}
EXECUTE {end.bib}
```