



Descriptive Complexity of Formal Systems

Preparing Papers with the \LaTeX 2_ε
'dcfs08' Class

Quick Reference Handbook

Prompt advice for impatient: The file 'dcfs08ex.tex' contains a sample input (with embedded %-comments), to help you skip reading documentation.

Quick reference handbook: The files 'dcfs08qk.pdf' and 'dcfs08qk.ps' contain a brief summary of all commands. [This document.]

Guidebook for authors: The files 'dcfs08dc.pdf' and 'dcfs08dc.ps' contain a more detailed documentation about the class.

Files coming with this distribution: dcfs08.cls (document class);
dcfs08ex.tex (sample input); dcfs08qk.pdf, dcfs08qk.ps (quick reference);
dcfs08dc.pdf, dcfs08dc.ps (detailed documentation)

1 General structure of a dcfs08 document

```

\documentclass{dcfs08}, \documentclass[sub]{dcfs08},
  or \documentclass[acc]{dcfs08}
  * package loading (if any)
  * user-defined new commands (macros)
\begin{document}
\title{...}
  * preamble (names of authors, addresses, thanks for grant support...)
\maketitle
\begin{abstract}
  * brief description of results
  \keywords
  * list of keywords
\end{abstract}
  *
  * main body of the paper (keep page limit!)
  *
\begin{thebibliography}{#}
  * list of references
\end{thebibliography}
\PCappendix (optional)
  * details for the program committee, e.g.,
  proofs not included in the main body, due to the page limit
\end{document}

```

2 Preamble commands

`\documentclass[options]{dcfs08}` Invoking the dcfs08 class at the beginning of the file. Available options:

[sub] Hides confidential information. That is, all data entered by `\author`, `\runningauthors`, `\address`, or `\thanks` commands produce only a white ‘phantom’ space in the output. Use before sending a submission to the program committee.

[acc] All text below `\PCappendix` is ignored as a comment. Use for the final accepted version, or for checking consistency of cross-references in a version of the paper destined for a proceedings.

`\begin{document}` For simplicity, imagine that it closes macro definitions and opens the mode producing output. (Actually, among others, it reads the `*.aux` file containing label values computed in the previous compilation.)

`\title{text_of_title}` Saves `text_of_title` in an internal \TeX variable, to be used as a title of the paper. The title should be capitalized. Commands inside `text_of_title`:

`\` New line, used to divide a long `text_of_title` into several lines.

`\author[label,...,label]{name_of_author}` Appends one entry to an internal list of authors. This entry is in the form `name_of_author(V,...,V)`, where V, \dots, V are values obtained by computation from the respective labels in the list

[label,...,label]. This is done in a way very similar to the \label-\ref mechanism.

Therefore, each label links the given \author to all \address-es and \thanks-es bearing the same particular label.

Each of the authors must be introduced by a separate \author command. (Do not try an ‘\and’ inside the name_of_author!)

\address[label]{text_of_address} Appends one entry to an internal list of addresses. This entry is in the form ^(V)text_of_address, where V is a value obtained from the label by the \label-\ref-like mechanism. Therefore, each \author using the same label is linked to the given \address.

Each address should be introduced by a separate \address command. (Do not pack them together into one \address entry.) Commands inside text_of_address:

**** New line, used to divide the given address into several lines.

\withinline Used to replace ****, in order to save some vertical space. That is, some logical blocks of text representing separate lines (when written down on the envelope) will be printed within the same line.

\email[short_author’s_name]{em@il_address} Provides one email address, in the form em@il_address (short_author’s_name). E-mail addresses for all authors linked to the given \address should be introduced by separate \email commands. The optional [short_author’s_name] can be omitted, if the owner’s identity can be deduced easily from the em@il_address itself.

\thanks[label]{text_of_footnote} Appends one entry to an internal list of footnotes, in the form ^(V)text_of_footnote, where V is a value obtained from the label by the \label-\ref-like mechanism. Therefore, each \author using the same label is linked to the given \thanks footnote.

All footnotes related to the paper as a whole, or to the title itself, should appear immediately below \title, without the optional label.

\runningtitle{short_text_of_title} Saves short_text_of_title in an internal T_EX variable, to be used as a running title on odd pages. If the command is not present, the text introduced in the \title command is used (after removing line separators). The running title should be capitalized.

\runningauthors{short_names_of_authors} Saves short_names_of_authors in an internal T_EX variable, to be used as a running list of authors on even pages. If the command is not present, the list of authors collected from all \author commands is used. If there are too many authors, you can also select a name of one author (not abbreviated in this case), followed by ‘_et.al.’.

\thanksmark[label,...,label] Provides a list of footnote marks, in the form ^(V,...,V), where V,...,V are values obtained from the respective labels in the list label,...,label, by the \label-\ref-like mechanism. Combined with \thanks[...]{...}, it can imitate an exceptional footnote (not thanking for a grant support). This command can be used only in text_of_address or in text_of_footnote, that is, for a footnote in an address or for a footnote in

another footnote.

`\maketitle` Closes the preamble and prints it out. Without `\maketitle` at the end, no front matter will be printed!

Relative order and labeling by default

`\title` is always the first one below `\begin{document}`.

`\author`: The relative order of the `\author` commands determines the order of appearance of authors.

`\address` should go below the first `\author` linked to the given `\address`. If all `\author`-s are affiliated with all `\address`-es, no labels are in `\address`-es. However, if there is any difference in affiliation, labels are used.

`\thanks`, if thanking for a grant support: It should go below the first `\author` related to the given `\thanks`. If all `\author`-s are linked to all such `\thanks` commands, no labels are used. However, if there is any difference among the authors in grant support, labels are used.

`\thanks`, as a footnote related to the paper as a whole, or to the title itself: It should appear immediately below `\title`, and never with the optional `[label]` parameter.

`\thanks`, if imitating a footnote not thanking for a grant support: This should go immediately above `\maketitle`, and always linked with the optional `[label]` parameter.

`\runningtitle` can be placed anywhere.

`\runningauthors` can be placed anywhere.

`\thanksmark` can go nowhere, except for an inside of some `text_of_address` or `text_of_footnote` parameter.

`\maketitle` is always the last one.

3 Predefined theorem-like environments

```
\begin{theorem}.....\end{theorem}
\begin{lemma}.....\end{lemma}
\begin{corollary}....\end{corollary}
\begin{problem}.....\end{problem}
\begin{definition}...\end{definition}
\begin{remark}.....\end{remark}
\begin{example}.....\end{example}

\begin{claim}.....\end{claim}
\begin{proof}.....\end{proof}
\begin{proofof}{s}...\end{proofof}
```

Except for `claim`, `proof`, and `proofof`, these environments are numbered uniformly with a single counter.

The `proof-s` and `proofof-s` are not numbered. The `proofof` behaves in the same way as `proof`, but it displays also the parameter ‘`s`’, the subject of the proof. It is used if the theorem and its proof are far away from each other.

A `claim` can be used only inside a `proof` or `proofof`, as an auxiliary statement. Such claims can have their own proofs (second-level proofs, nested in the main proof). The `claim-s` are numbered within the scope of the main (outermost) proof.

Additional information in run-in headings: Except for `proof` and `proofof`, the above environments can use an optional parameter to introduce an inventor, citation, or common name. For example, `\begin{theorem}[(Distribution of Primes)]`, or `\begin{theorem}[\cite{Ve70}]`.

Defining your own theorem-like environments: Additional environments can be defined in a very simple way:

```
\newtheorem{hypo}{theorem}{Hypothesis}, or
\newtheorem{hypo}{theorem}{Hypothesis\dromanb}
```

Now you can use `\begin{hypo}` and `\end{hypo}`, captioned by ‘Hypothesis’. For the body of the environment, there are two choices; either italicized like `theorem`—without `\dromanb`; or roman like `definition`—with `\dromanb`. Another example:

```
\newtheorem{exercise}{theorem}{\itshape Exercise\dromanb}
```

This produces an `exercise` environment, with bold italicized run-in headings and roman bodies inside.

4 A sequence of items in a list

```
\begin{itemize}.....\end{itemize}
\begin{description}...\end{description}
\begin{enumerate}.....\end{enumerate}
```

In all of these environments, each new item begins with an `\item` command. This can be used in three different forms; `\item[text]` (explicit); `\item[]` (empty); `\item` (implicit).

Here we only point out that the new layout for the generated output makes the lists more flexible. See `dcfs08dc.pdf`, `dcfs08dc.ps` (detailed documentation), or `dcfs08ex.tex` (sample input).

5 List of references

The following example is fictitious, but covers the most typical situations.

```
\begin{thebibliography}{9}

\bibitem{Ca76}
U.~Castelli. \newblock An article published in a journal.
\newblock \emph{J.~Comput.\ System Sci.}, 12, 144--57, 1976.

\bibitem{CD86}
U.~Castelli, O.~Debn\`{a}r. \newblock An article published in a journal,
```

```

    requiring later corrections.
\newblock \emph{Theoret.\ Comput.\ Sci.}, 47, 157--68, 1986\@.
\newblock (Corrigendum:\ \emph{ibid.}, 302, 398--402, 2003).

\bibitem{CDV71}
U.~Castelli, O.~Debn\’{a}r, M.V.~Veronesi. \newblock A~contribution in
  a proceedings not published in a book series.
\newblock In \emph{Proc.\ Math.\ Found.\ Comput.\ Sci.}, 200--215\@.
Univ.\ Milano, 1971.

\bibitem{CV94}
U.~Castelli, M.V.~Veronesi. \newblock A~contribution in a proceedings
  which appeared in a book series.
\newblock In \emph{Proc.\ Math.\ Found.\ Comput.\ Sci.},
\emph{Lect.\ Notes Comput.\ Sci.}, 841, 203--5\@. Springer-Verlag, 1994.

\bibitem{DD85}
O.~Debn\’{a}r, R.~Debn\’{a}r. \newblock \emph{A~Book on Composite
  Numbers}. \newblock John Veronesi \& Sons, 1985.

\bibitem{DV89b}
O.~Debn\’{a}r, M.V.~Veronesi.
\newblock A~chapter in a book edited by someone else.
\newblock In U.~di Castelli, J.~Veronesi (eds.), \emph{Handbook of
  Curious Ideas in Theoretical Computer Science}. Elsevier Science, 1989.

\bibitem{DV89t}
O.~Debn\’{a}r, M.V.~Veronesi. \newblock A~technical report.
\newblock Tech.\ Rep.\ {IRR-TR-283}, Xa\~na\~du State University, 1989\@.
\newblock (Available from
  {http://$!$/ftpsrv.diagon.dragon/\linebreak[0]%
  science/\linebreak[0]ujh.sk/pub/\linebreak[0]%
  techreports/TR-33-98.ps.Z}).

\bibitem{Ve70}
M.V.~Veronesi. \newblock A~simple argument for showing that
  $\mathrm{P}\not\equiv\mathrm{NP}$\@.
\newblock Unpublished man\~u\~script, Xanadu University, 1970.

\end{thebibliography}

```

6 Miscellaneous

The first thing after the preamble should be an abstract containing a brief summary of the main results, followed by a list of keywords.

```

\begin{abstract}
  We shall show an upper bound ...
\keywords
  finite-state automata, regular sets, Turing machines
\end{abstract}

```

If you believe that more details are necessary to substantiate the main claims of the paper, but these details would not fit within the given page limit, you may include an appendix that will be read at the discretion of the Program Committee. This material should appear at the very end of the paper, below the

`\PCappendix`

command. This command comes together with the `[acc]` class option.