

The file `phddoc.dtx` for use with \LaTeX 2 _{ϵ} .^{*}
It contains the code for `phddoc.cls`

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Fusce adipiscing justo nec ante. Nullam in
enim. Pellentesque felis orci, sagittis ac,
malesuada et, facilisis in, ligula. Nunc non
magna sit amet mi aliquam dictum. In mi.
Curabitur sollicitudin justo sed quam et quadd.

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section
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1

User Manual



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1.1 Documentation of the L^AT_EX sources

This is a class for documenting the **phd** bundle, a collection of packages and classes that enables the typesetting of documents using a flexible user interface,

You may however find it generally useful as a class for typesetting the documentation of files produced in ‘doc’ format.

The class is written as a “self-contained” docstrip file: executing `latex phd-doc.dtx` generates the `phddoc.cls` file and typesets this documentation; execute `tex l3doc.dtx` to only generate `phddoc.cls`.

Each documented file in the standard distribution comes with extension `dtx`. The appropriate class package or `initex` file will be extracted from the source by the docstrip system. Each `dtx` file may be directly processed with L^AT_EX 2_ε, for example

```
% latex2e docclass.dtx
%
```

would produce the documentation of the Class and package interface.

Each file that is used in producing the L^AT_EX 2_ε format (ie not including the standard class and packages) will be printed together in one document if you L^AT_EX the file `sources2e.tex`. This has the advantage that one can produce a full index of macro usage across all the source files.

If you need to customise the typesetting of any of these files, there are two options:

- You can use DOCSTRIP with the module ‘driver’ to extract a small L^AT_EX file that you may edit to use whatever class or package options you require, before inputting the source file.
- You can create a file `phddoc.cfg`. This configuration file will be read whenever the `phddoc` class is used, and so can be used to customise the typesetting of all the source files, without having to edit lots of small driver files.

The second option is usually more convenient. Various possibilities are discussed in the next section.

1.2 Specification

The class builds on the **ltxdoc**¹ class and the **doc**² package, but since they were written many authors have come up with different ideas, as to how these documents should be produced.

The L^AT_EX3 Team has also more recently developed the `l3doc` class and `l3docstrip` package for documenting the `l3` sources. Other Teams such

¹Carlisle, David (Mar. 2018). *The file ltxdoc.dtx for use with LaTeX2e.*

²Mittelbach, Frank (May 2018). *The doc and shortvrb package.*



as the developers of **pgf** prefer not to use `docstrip` and document the code and user manuals in a more traditional way, as normal documents in conjunction with external scripts written in python.

My objectives in writing this package, was to integrate the ability of the other packages in this series to document code in a flexible way. For longer books, such as a thesis, where the author might use their own developed macros, it also enables one to use such a method.

The objectives are as follows:

Flexibility Provide flexibility to use one of the standard \LaTeX 2 ϵ classes `article`, `book` or the KOMA classes `scrartcl`, `scrbook`, `scrreprt` as the main class.

Style Enable the use of a fully featured key value interface for documenting the code.

Tools Provide a series of tools to create new documents, formatting and scaffolding. Currently \LaTeX distributions have a plethora of tools, mostly using perl and lately `l3build` using Lua. Perl tools have served the community well for many years. One such tool `ctanify` does not work using normal distributions as the Perl bundled in the distributions has some missing modules. Go is a cross-compilation systems language enabling scripts to be bundled for different operating systems easily, hence the choice here.³ Some of these problems with Perl on Windows can be overcome using Strawberry Perl⁴ For any conflicts follow the guidelines in `penwatch`.⁵

```
phd ctanify myclass.dtx myclass.ins README
```

1.3 Customisation

The simplest form of customisation is to pass more options to the `article` class which is loaded by **phddoc**. For instance if you wish all the documentation to be formatted for A4 paper, add the following line to `phddoc.cfg`:

```
% \PassOptionsToClass{a4paper}{article}
%
```

All the source files are in two parts, separated by `\StopEventually`. The first part (should) contain ‘user’ documentation. The second part is a full

³See for example <https://tex.stackexchange.com/questions/256096/which-perl-to-install-for-xindy-with-miktex-on-windows>

⁴Download at <http://strawberryperl.com/>. This will also enable xindy to work on a MikTeX distribution.

⁵https://www.penwatch.net/cms/pip_conflict/

documented listing of the source code. The doc package provides the command `\OnlyDescription` which suppresses the code listings. This may also be used in the configuration file, but as the doc package is read later, you must delay the execution of `\OnlyDescription` until after the doc package has been read. The simplest way is to use `\AtBeginDocument`. Thus you could put the following in your `phddoc.cfg`.

```
% \AtBeginDocument{\OnlyDescription}
%
```

If the full source listing `sources2e.tex` is processed, then an index and change history are produced by default, however indices are not normally produced for individual files.

As an example, consider `ltclass.dtx`, which contains the sources for the new class and package interface commands. With no `cfg` file, a 19 page document is produced. With the above configuration a slightly more readable document (4 pages) is produced.

Conversely, if you really want to read the source listings in detail, you will want to have an index. Again the index commands provided by the doc package may be used, but their execution must be delayed.

```
% \AtBeginDocument{\CodelineIndex\EnableCrossrefs}
% \AtEndDocument{\PrintIndex}
%
```

The doc package writes index files to be sorted using `MakeIndex` with the `gind` style, so one would then use a command such as

```
% makeindex -s gind.ist ltclass.idx
%
```

and re-run \TeX .

Similarly to print a Change history, you would add

```
% \AtBeginDocument{\RecordChanges}
% \AtEndDocument{\PrintChanges}
%
```

to `phddoc.cfg`, and use `MakeIndex` with a command such as

```
% makeindex -s gglo.ist -o ltclass.gls ltclass.glo
%
```

Finally if you do not want to list all the sections of `source2e.tex`, you can use `\includeonly` in the `cfg` file:

```
% \includeonly{ltvers,ltboxes}
%
```


2

Implementation Code



Fusce adipiscing justo nec ante. Nullam in enim. Pellentesque felis orci, sagittis ac, malesuada et, facilisis in, ligula. Nunc non magna sit amet mi aliquam dictum. In mi. Curabitur sollicitudin justo sed quam et quadd.

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2.1 Options

```

1 \<class>
2 \DeclareOption{a5paper}{\@latexerr{Option not supported}%
3   {}}
4 \newif\if@book
5 \newif\if@article
6 \newif\if@report
7 \newif\if@scrbook
8 \newif\if@scrartcl
9 \newif\if@scrreprt
10
11 \DeclareOption{article}{\@articletrue}
12 \DeclareOption{book}{\@booktrue}
13 \DeclareOption{report}{\@reporttrue}
14 \DeclareOption{scrbook}{\@scrbooktrue}
15 \DeclareOption{scrartcl}{\@scrartcltrue}
16 \DeclareOption{scrreprt}{\@scrreprttrue}
17
18 \DeclareOption*{%
19   \PassOptionsToClass {\CurrentOption}{book}}

```

2.2 Configuration

Input a local configuration file, if it exists.

```

20 \InputIfFileExists{phddoc.cfg}
21   {\typeout{*****^J%
22             * Local config file phddoc.cfg used^J%
23             *****}}
24   {}

```

2.3 Option Processing

```

25 \ProcessOptions

```

2.4 Loading book and doc

The original phddoc uses the article class. For longer documentation it is preferable to use the book. This means we might get an error on the production of a title, which we will fix very soon.

```

26 \if@book
27   \LoadClass{book}
28   \else
29     \if@article
30       \LoadClass{article}
31       \cxset{section number prefix=,}
32     \else
33       \if@report
34         \LoadClass{report}

```



```

35         \else
36             \if@scrbook
37                 \LoadClass{scrbook}
38             \else
39                 \if@scrartcl
40                     %\cxset{section number prefix=,}
41                     \LoadClass{scrartcl}
42                 \else
43                     \if@scrreprt
44                     \LoadClass{scrreprt}
45                 \fi
46             \fi
47         \fi
48     \fi
49 \fi
50 \fi

51 \RequirePackage{doc}
52 \RequirePackage{expl3}

```

Make | be a ‘short verb’ character, but not in the document preamble, where an active character may interfere with packages that are loaded.

```
53 \AtBeginDocument{\MakeShortVerb{\|}}
```

As ‘doc’ documents tend to have a lot of monospaced material, Set up some tt substitutions to occur silently.

```

54 \DeclareFontShape{OT1}{cmtt}{bx}{n}{<-> ssub * cmtt/m/n}{}
55 \DeclareFontFamily{OMS}{cmtt}{\skewchar\font 48} % '60
56 \DeclareFontShape{OMS}{cmtt}{m}{n}{<-> ssub * cmsy/m/n}{}
57 \DeclareFontShape{OMS}{cmtt}{bx}{n}{<-> ssub * cmsy/b/n}{}

```

This substitution is in the standard fd file, but not silent.

```

58 \DeclareFontShape{OT1}{cmss}{m}{it}{<->ssub*cmss/m/sl}{}

59 \CodelineNumbered
60 \DisableCrossrefs

```

Increase the text width slightly so that width the standard fonts 72 columns of code may appear in a macrocode environment.

```
61 \setlength{\textwidth}{355pt}
```

Increase the marginpar width slightly, for long command names. And increase the left margin by a similar amount

```

62 \addtolength\marginparwidth{30pt}
63 \addtolength\oddsidemargin{20pt}
64 \addtolength\evensidemargin{20pt}

65 \setcounter{StandardModuleDepth}{1}

```

2.5 Useful abbreviations

The **phd-documentation** provides numerous commands for typesetting \LaTeX code. It is imported automatically by the phddoc class and hence the following macros are described here for convenience.

`\cmd{\foo}` Prints `\foo` verbatim. It may be used inside moving arguments. It can *not* be used to record commands that are defined as “\outer” nor is it possible to use it on conditionals such as `\iftrue` or defined by `\newif`. `\cs{foo}` also prints `\foo`, for those who prefer that syntax. (This second form can be used to record all type of commands so the above restrictions do not apply.

```
\cmd
\cs 66 \def\cmd#1{\cs{\expandafter\cmd@to@cs\string#1}}
    67 \def\cmd@to@cs#1#2{\char\number`#2\relax}
    68 %\newcommand\cs[1]{\color{blue}{\texttt{\char` \ #1}}}
```

`\marg` `\marg{text}` prints `{\text{}}`, ‘mandatory argument’.

```
69 %\providecommand\marg[1]{%
70 %  {\ttfamily\char`\}\meta{#1}{\ttfamily\char`\}}}
```

`\oarg` `\oarg{text}` prints `[{\text{}]`, ‘optional argument’.

```
71 %\providecommand\oarg[1]{%
72 %  {\ttfamily[]\meta{#1}{\ttfamily[]}}}
```

`\parg` `\parg{te,xt}` prints `({\text{}})`, ‘picture mode argument’.

```
73 \providecommand\parg[1]{%
74  {\ttfamily()\meta{#1}{\ttfamily()}}}
```

2.6 DocInclude

```
75 \@addtoreset{CodelineNo}{part}

\DocInclude More or less exactly the same as \include, but uses \DocInput on a dtx file,
not \input on a tex file.
76 \def\partname{File}
77 \newcommand*\DocInclude[1]{%
78   \relax
79   \clearpage
80   \docincludeaux
81   \IfFileExists{#1.fdd}{\def\currentfile{#1.fdd}}{\def\currentfile{#1.dtx}}%
82   \ifnum\@auxout=\@partaux
83     \@latexerr{\string\include\space cannot be nested}\@eha
84   \else \docinclude#1 \fi
85 \def\@docinclude#1 {\clearpage
86 \if@filesw \immediate\write\@mainaux{\string\input{#1.aux}}\fi
87 \@tempswattrue\if@partsw \@tempswafalse\edef\@tempb{#1}\@for
88 \@tempa:=\@partlist\do{\ifx\@tempa\@tempb\@tempswattrue\fi}\fi
```



```

89 \if@tempswa \let\@auxout\@partaux \if@filesw
90 \immediate\openout\@partaux #1.aux
91 \immediate\write\@partaux{\relax}\fi

```

We need to save (and later restore) various index-related commands which might be changed by the included file.

```

92 \let\@phddoc@PrintIndex\PrintIndex
93 \let\PrintIndex\relax
94 \let\@phddoc@PrintChanges\PrintChanges
95 \let\PrintChanges\relax
96 \let\@phddoc@theglossary\theglossary
97 \let\@phddoc@endtheglossary\endtheglossary
98 \part{\currentfile}%
99 {\let\ttfamily\relax
100 \xdef\filekey{\filekey, \thepart={\ttfamily\currentfile}}}%
101 \DocInput{\currentfile}%
102 \let\PrintIndex\@phddoc@PrintIndex
103 \let\PrintChanges\@phddoc@PrintChanges
104 \let\theglossary\@phddoc@theglossary
105 \let\endtheglossary\@phddoc@endtheglossary
106 \clearpage
107 \@writeckpt{#1}\if@filesw \immediate\closeout\@partaux \fi
108 \else\@nameuse{cp@#1}\fi\let\@auxout\@mainaux}

109 \gdef\codeline@wrindex#1{\if@filesw
110     \immediate\write\@indexfile
111     {\string\indexentry{#1}%
112     {\filesep\number\c@CodelineNo}}\fi}%

113 \let\filesep\@empty

```

`\aalph` Special form of `\alph` as currently `source2e.tex` includes more than 26 files .

```

114 \def\aalph#1{\@aalph{\csname c@#1\endcsname}}
115 \def\@aalph#1{%
116     \ifcase#1\or a\or b\or c\or d\or e\or f\or g\or h\or i\or
117         j\or k\or l\or m\or n\or o\or p\or q\or r\or s\or
118         t\or u\or v\or w\or x\or y\or z\or A\or B\or C\or
119         D\or E\or F\or G\or H\or I\or J\or K\or L\or M\or
120         N\or O\or P\or Q\or R\or S\or T\or U\or V\or W\or
121         X\or Y\or Z\else\@ctrerr\fi}

```

`\docincludeaux`

```

122 \def\docincludeaux{%
123     \def\thepart{\aalph{part}}\def\filesep{\thepart-}%
124     \let\filekey\@gobble
125     \g@addto@macro\index@prologue{%
126         \gdef\@oddfoot{\parbox{\textwidth}{\strut\footnotesize
127             \raggedright{\bfseries File Key:} \filekey}}%
128     \let\@evenfoot\@oddfoot}%

```

```

129 \global\let\docincludeaux\relax
130 \gdef\@oddfoot{%
131   \expandafter\ifx\csname ver@\currentfile\endcsname\relax
132     File \thepart: {\ttfamily\currentfile} %
133   \else
134     \GetFileInfo{\currentfile}%
135     File \thepart: {\ttfamily\filename} %
136     Date: \filedate\ %
137     Version \fileversion
138     \fi
139     \hfill\thepage}%
140 \let\@evenfoot\@oddfoot}%

```

ddangernote



Use the double danger bend if there is something which could cause serious problems when used in a wrong way. Better the normal user does not know about such things.

```

141 \ExplSyntaxOn
142 \newenvironment {ddangernote}
143 {
144   \begin{trivlist}\item[]\noindent
145   \begingroup\hangindent=3.5pc\hangafter=-2
146   \cs_set:Npn \par{\endgraf\endgroup}
147   \hbox to0pt{\hskip-\hangindent\dbend\kern2pt\dbend\hfill}\ignorespaces
148 }{
149   \par\end{trivlist}
150 }
151 \ExplSyntaxOff

```



This is a double bend danger sign from **manfnt**¹

```

152 \def\task#1#2{}
153 \endclass

```

¹Kielhorn, Axel and Kosygin, Denis (July 1999). *The Manfnt package. A quick way to access the symbols in manfnt.*