Premia: The Documentation system version 13

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Contents

The documentation system of PREMIA has been written in LaTeXto avoid problems with the mathematical formulas. Then, it has been compilated in PDF (Files format of Acrobat Reader) to allow a large diffusion. It is strongly linked with the source files directory structure. In order to be able to navigate easily between the different files of the documentation, a system of hyperlinks have been undertaken up.

1 PREMIA LaTeXfiles

1.1 The different kinds of LaTeXfiles

There exist 3 types of files:

- For each source files (.c, .h) of the software, for instance gottlieb.c, a file gottlieb_src.tex is created, it is a LaTeXversion of the source file.
- For some source files (such as the routine files or general documentation on numerical methods, models or options), a documentation file is created, for instance gottlieb_doc.tex.
- For each _doc.tex files there exists a _docl.tex files which contains only the hyperlinks of the first file and is not compilable.

The first and the last kind of LaTeXfiles are generated automatically by the routine PremiaCToTex.exe. We will come back to this later.

1.2 Common LaTeXfiles

Some files contain some LaTeXcode of common usage (preamble, packages...). They are all located in the Doc subdirectory of PREMIA1. So if you plan to compile a LaTeXfile in PREMIA you need to add the PREMIA1directory to path list for LaTeXinput files (in MikTex.ini if you use MikTex under Windows).

- premiamble.tex: contains the declaration of the use of the packages color and hyperref with its options.
- premiambledoc.tex: same as above, except that it is only for the general documentation files. In addition it creates a bar of links to the help on the kernel, the documentation the VAR system, the Interface, and the contents of the directory PREMIA1.
- premiadata.tex: contains some declaration of custom commands for LaTeX.
- premiaend.tex: links to the bibliography and last commands necessary to the file.
- premiaendnobib.tex: same as above without the bibliographical link.

1.3 The hyperlinks system

As we say above, the hyperlinks are automatically generated by PremiaCTo-TeX. What kind of links are generated?

- For a routine file: A link to the source file, the model, the option family, the file model_option, the list of archived trials of the routine, and the algorithmic family (like tree, finite-difference...) of the routine
  Example:

  tr_euler_bs_doc.pdf

- For an option file: A link to the source file and the (corresponding) option family.
  Example:

  calleuro_doc.pdf

- For a model_option file: A link to the source file, the model, the option family, the dynamic test routine of the directory, and the comparison tests between different routines of the directory. Also a list of links to all the routines of the directory.
  Example:

  bs1d_std_doc.pdf

- For a model_option_test file: A link to the source file, the model, the option family, the model_option file of the directory, and the dynamical tests involving a routine of the directory.
  Example:

  bs1d_std_test_doc.pdf

2 LaTeXpackages

All the following packages can be found on the CTAN site (ftp.dante.de).

2.1 The package Hyperref

Of course this is the cornerstone of the documentation system. The package hyperref extends the functionality of all the LaTeXcross-referencing commands (including the table of contents, bibliographies etc...) to produce special commands which a driver can turn into hypertext links under PDF in particular; it also provides new commands to allow the user to write hypertext links, including those to external documents and URLs. The package hyperref is available on the CTAN sites (like ftp.dante.de).

2.2 Other packages

We also use (essentially to get a nicer presentation) the following packages: **fancyhdr, latexsym, alltt, varioref, keyval, nameref, verbatim, time**.

3 Dvipdfm

This is a DVI to PDF conversion utility, that support hyperlinks. It also can include a JPEG image as an encapsulated object and offer great possiblities with colors and fonts. It produces a nicer output than ps2pdf or even distiller (after running dvips)...and it is free.

4 The routine PremiaCToTex

All the hyperlinks of the fils _doc.tex and _src.tex are generated automatically by the programs PremiaCToTex. They are located in the file _docl.tex for the first kind. This file is the one modified by PremiaCToTex which also erases all the _src.tex and at the opposite nether write in the _doc.tex files (except if it does not exist, then the routine creates it with the appropriate inputs, links and declaration).

This program also creates the file summury.tex which lists all the source files of the program PREMIA.

5 Scripts

5.1 From LaTeXto Pdf

A script for both Windows and Unix have been implemented to transform the LaTeXfiles in PDF format: tex2pdfone. The is also a script to compile all the LaTeXfiles, tex2pdfall.

5.2 Out2Pdf

This is a script (a .bat file under Windows, bash file under Unix) to produce a (hopefully) nice Pdf output out of the software output (premia.out, etc..). The output file (gnupremia.pdf) is put in the or subdirectory of PREMIA1, so the hyperlinks to the model, option,..will not work: it is intended as a trial stage before launching ArchivePdf if the output is found to be satisfactory. Of course ArchivePdf can be launched directly.

5.3 ArchivePdf

The same as above, except that in addition the output Pdf file is integrated in the documentation system, and the corresponding list of archived files (either a single routine list, or a comparison list or a dynamical test list) is updated. Under Windows it requires a bash shell like that of Cygnus (cf readme.txt).