in

ManFilt 1.2

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TTH(1)              TeX to HTML translator              TTH(1)


NAME
      tth, latex2gif, ps2gif, ps2png - TeX and LaTeX to HTML
      translator and its auxiliary program

SYNOPSIS
      tth [options] [<file.tex] [>file.html] [2>err]

      tth [options] file.tex [2>err]

      latex2gif file (no extension)

      ps2gif file.ps file.gif [icon.gif]

      ps2png file.ps file.gif [icon.gif]

DESCRIPTION
      tth translates TeX source that uses the plain macro  pack-
      age  or  LaTeX, including most  mathematics, into a near
      equivalent in HTML. The formal  standard  that  TTH-trans-
      lated documents follow is strictly HTML4.0 Transitional.

      The  complete  documentation  is  contained  in  "tth_man-
      ual.html" distributed with the program. This man  page  is
      an  incomplete  summary and updated on an irregular basis.
      [Last updated 1 May 2002 by Hans Fredrik Nordhaug.]

      The program is a filter, i.e. it reads from standard input
      and  writes  to  standard  output. In addition, diagnostic
      messages concerning its detection of unknown  or  untrans-
      lated constructs are sent to standard error.

      In  handling  embedded graphical files tth can make use of
      auxiliary programs,  ps2gif or ps2png, which in turn  make
      use of the ghostscript interpreter gs (1) and the Portable
      Bitmap Graphics suite of commands, see pbm (1).
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tth is extremely fast in default mode on any reasonable
hardware.   Conversion of even large TeX files should be a
matter of a second or two. This makes it possible to use
tth in a CGI script to output HTML directly from TeX
source if desired; (standard error may then need to be
redirected.)

To discuss how to get the best from tth, you can subscribe
to a mailing list by sending an email containing the mes-
sage   subscribe tth_mailing_list to "majordomo@hutchin-
son.belmont.ma.us".   Then   you   can   send   messages   to
"tth_mailing_list@hutchinson.belmont.ma.us".

tth handles TeX things like:
    Almost all mathematics, including symbols, fractions, delimiters.
    {} \begingroup\endgroup grouping.
    \it \bf \sl etc styles.
    \beginsection.

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        \centerline{}.
        \item{...} \itemitem{...} {\obeylines ...}.
        Almost all accented latin characters written like \"o, or \"{e}.
        \hang \hangindent \narrower for entire paragraphs
          (\hangafter ignored).
        \headline is made into a title.
        % Comments. Simply removed.
        \halign tables, checks template for the presence of \vrule,
          to decide if the table is to be border style.
        \settabs \+ style tables.
        \input: But, of course, not from the implicit texinputs path.
        \newcount, \number, \advance and counter setting.
        \def, \edef, \xdef but no delimited arguments.
          All definitions are global.
        \matrix, \pmatrix but not \bordermatrix. \cases.

    LaTeX support includes essentially all mathematics plus
    the following environments:
        em, verbatim, center, flushright [one paragraph only],
        verse, quotation, quote, itemize, enumerate, descrip-
        tion, list [treated as if description], figure, table,
        tabular[*,x], equation, displaymath, eqnarray [only one
        equation   number],   math,   array,   thebibliography,
        [raw]html, index [as description].
    and Latex commands:
        [re]newcommand, newenvironment [optional arg not per-

mitted], chapter, section, subsection, subsubsection,
caption, label, ref, pageref [no number], emph, textit,
texttt, textbf, centering, raggedleft, includegraphics,
[e]psfig, title, author, date [not automatic], lefteqn,
frac, tableofcontents, input, include [as input], text-
color, color [8 standard colors], footnote [ignoring
optional arg], cite, bibitem, bibliography, tiny ...
normalsize ... Huge, newcounter [no ``within'' sup-
port], setcounter, addtocounter, value [inside set or
addto counter], arabic, the, stepcounter, newline,
verb[*], bfseries, itshape, ttfamily, textsc, ensure-
math, listoftables, listoffigures, newtheorem [no
optional arguments permitted], today, printindex, bold-
math, unboldmath, newfont, thanks, makeindex, index.

Hypertext cross-references within the document are auto-
matically generated by (e.g.) ref, and tableofcontents.

When tth encounters TeX constructs that it cannot handle
either because there is no HTML equivalent, or because it
is not clever enough, it tries to remove the mess they
would otherwise cause in the HTML code, generally giving a
warning of the action if it is not sure what it is doing.
Untranslatable TeX math tokens are inserted verbatim.

Independence of [La]TeX installation and the -L switch
       A major difference between tth and latex2html is that tth
       does not call the latex or tex programs at all by default,

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and is not specifically dependent upon these, or indeed
any other (e.g. perl), programs being installed on the
translating system. Its portability is therefore virtu-
ally universal.

Forward references in LaTeX are handled by multiple passes
that write auxiliary files. tth does only a single pass
through the source. If you want tth to use LaTeX con-
structs (e.g. tableofcontents, bibliographic commands,
etc.) that depend on auxiliary files, then you do need to
run LaTeX on the code so that these files are generated.
Alternatively, the tth switch -a causes tth automatically
to attempt to run latex on the file, if no auxiliary file
.aux exists.

When run specifying a filename on the command line as a
non-switch argument, x tth constructs the name of the

expected auxiliary LaTeX files in the usual way and looks
for them in the same directory as the file. If you are
using tth as a filter, you must tell tth , using the
switch -Lfilename, the base file name of these auxiliary
files (which is the name of the original file omitting the
extension). If tth cannot find the relevant auxiliary
file because you didn't run LaTeX and generate the files
or didn't include the switch, then it will omit the con-
struct and warn you. Forward references via ref will not
work if the .aux file is unavailable, but backward refer-
ences will. The -L switch with no filename may be used to
tell tth that the document being translated is to be
interpreted as a LaTeX file even though it lacks the usual
LaTeX header commands. This may be useful for translating
single equations that (unwisely) use the \frac command.

BibTeX bibliographies
tth supports bibliographies that are created by hand using
\begin{thebibliography} etc. Such bibliographies do not
require anything beyond the .aux file. tth also supports
bibliographies created using BibTeX from a biblography
database. The filename.bbl file is input at the correct
place in the document. However, this filename.bbl is not
created automatically by latex. In addition to running
latex on the source file to create the auxiliary file, you
must also execute bibtex filename in the same directory,
to create the filename.bbl file, and then run latex again
to get the references right. (This is, of course, no more
than the standard procedure for using bibtex with latex
but it must be done if you want tth to get your bibliogra-
phy right). If you don't create the
 .bbl file, or if you create it somewhere else that tth
does not search, then naturally tth won't find it. Since
the BibTeX process is relatively tortuous, tth offers an
alternative. Using the -a switch with tth will cause it
to attempt to generate the required .bbl file automati-
cally using bibtex and latex.

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There are many different styles for bibliographies and a
large number of different LaTeX extension packages has
grown up to implement them, which tth does not support.
More recently, a significant rationalization of the situa-
tion has been achieved by the package natbib.   tth has
rudimentary support built in for its commands \citep and
citet in the default author-date form without a second
optional argument. A style file for natbib is distributed

with TTHgold which makes it possible to accommodate most
of its more useful styles and commands and easily switch
from author-date citation to numeric citation.

Indexing
tth can make an extremely useful hyperlinked index using
LaTeX automatic indexing entries. But indexing an HTML
document is different from indexing a printed document,
because a printed index refers to page numbers, which have
no meaning in HTML because there are no page breaks.   TTH
indexes LaTeX documents by section number rather than by
page; assuming, of course, that they have been prepared
with index entries in the standard LaTeX fashion.

tth will construct an index based on the standard LaTeX
commands "\makeindex" and "\index{...}", and automatically
process it and read it in when "\printindex" is encoun-
tered. The command line for calling the makeindex program
(not part of this distribution) may be changed using the
-x switch. For a file without the "\makeindex" command,
tth will write no index files, just read in an existing
one "file.ind" if it exists.

Graphics inclusion: epsfbox/includegraphics
The standard way in plain TeX to include a graphic is
using the epsf macros. The work is done by \epsf-
box{file.ps} which tth can parse. By default tth produces
a simple link to such a postscript file, or indeed any
format file.

Optionally TTH can use a more appropriate graphics format,
by using ps2gif or ps2png to convert the postscript file
to a png or gif file, "file.png" or file.gif" When the
switch -e1 or -e2 is specified, if ``file.png'',
``file.gif'' or ``file.jpg'' already exists in the same
directory as implied by the reference to ``file.ps'' then
no conversion is done and the file found is used instead.
That graphics file is then automatically either linked
(-e1) or inlined (-e2) in the document. If no such file is
found, TTH tries to find a postscript file with extension
that starts either .ps or .eps and convert it, first using
ps2png then, if unsuccessful, ps2gif. By popular request,
a third graphics option -e3 for generating icons is now
available.

The LaTeX command \includegraphics{...} and the older

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\[e]psfig{file=...} are treated the same as \epsfbox.
Their optional arguments are ignored.

Picture Environments
        The picture environment cannot be translated to HTML. Pic-
        tures using the built-in LaTeX commands must be converted
        to a graphics file such as a gif or png, and then included
        using \includegraphics. The switch −a, causes tth to
        attempt automatic picture conversion using latex2gif.

OPTIONS
        −a   attempt automatic conversion of picture environ-
                ments. Default omit.

        −c   prefix header "Content-type: text/HTML" (for direct
                web serving).

        −d   disable definitions with delimited arguments.
                Default enable.

        −e?   epsfbox handling: −e1 convert figure to png/gif
                using user−supplied ps2png/ps2gif. −e2 convert and
                include inline. −e2 as e2 but with icon. −e0
                (default) no conversion, just ref.

        −f?   sets the depth of grouping to which fractions are
                constructed built−up f5 (default) allows five lev-
                els built−up, f0 none, f9 lots.

        −g   don't guess an HTML equivalent for font defini-
                tions, just remove.

        −h   print some help. −? print usage

        −i   use italic font for equations (like TeX). Default
                roman.

        −j?   use index page length ?. Default 20 lines. −j sin-
                gle column.

        −Lfile tells tth the base file (no extension) for LaTeX
                auxiliary input.

        −n?   HTML title format control. 0 raw. 1 expand macros.
                2 expand eqns.

        −ppath specify additional directories (path) to search for
                input files.

        −r   output raw HTML (no preamble or postlude) for
                inclusion in other HTML.

        −t   permit built−up items in textstyle equations.
                Default in−line items only.

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    -u   unicode character encoding. (Default iso-8859-1).

    -v   give verbose commentary.

    -V   even more verbose (for debugging).

    -w?   HTML writing style. Default no head/body tags. -w
           -w0 no title. -w1 single title only, head/body
           tags. -w2 XHTML.

    -xmakindxcmd
           specify a non-standard makeindex command line.

    -y?   equation style: bit 1 compress vertically; bit 2
           inline overaccents.

SEE ALSO
        The tth manual which is more likely to be up-to-date.
        http://hutchinson.belmont.ma.us/tth/manual.cgi (or prefer-
        ably your local copy). In addition reading the man pages
        for latex, latex2html, tex and makeindex might be useful.

Browser Problems
        tth translates (La)TeX into standard HTML and takes
        account as far as possible of the idiosyncrasies of the
        major browsers. Nevertheless, there are several problems
        that are associated with the browsers. Authors and pub-
        lishers should recognize that these are not tth bugs.

        Many of the most serious difficulties of Mathematics ren-
        dering in HTML are associated with the need for extra sym-
        bols. In addition to various Greek letters and mathemati-
        cal operators, one needs access to the glyphs used to
        build up from parts the large brackets matching the height
        of built-up fractions. These symbols are almost univer-
        sally present on systems with graphical browsers, which
        all have a ''Symbol'' font, generally based on that made
        freely available by Adobe. The problem lies in accessing
        the font because of shortcomings in the browsers and the
        HTML standards that relate to font use.

        For more information please read the section "Browser
        Problems" in the manual.

AUTHOR
        tth   is   copyright   (c)   1997-2002   Ian   Hutchinson

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         For details see http://hutchinson.belmont.ma.us/tth/.

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