

# From L<sup>A</sup>T<sub>E</sub>X to HTML Help

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## Abstract

Recent Microsoft operating systems provide a new help system based on HTML (hence called HTML Help). It is much more flexible than the '.hlp' files used before, because it's HTML source provides multiple HTML derived advantages. Final HTML help file is a single '.chm' file which may contain a number of '.html' and graphics files.

This paper presents how to build HTML Help automatically using L<sup>A</sup>T<sub>E</sub>X and some additional tools.

## The most natural way to the goal

The HTML source which can be compiled with Microsoft HTML Help Compiler must comply with some special rules. Nevertheless it seems that the simplest way to the goal leads through a tool that given L<sup>A</sup>T<sub>E</sub>X source generates an HTML output:

L<sup>A</sup>T<sub>E</sub>X → HTML → HTML Help

Slightly changed and augmented L<sup>A</sup>T<sub>E</sub>X2HTML [2] can produce a MS HTML Workshop project that can be compiled into a '.chm' file.

## HTML Help Workshop

To build an HTML help (a '.chm') file it is enough to:

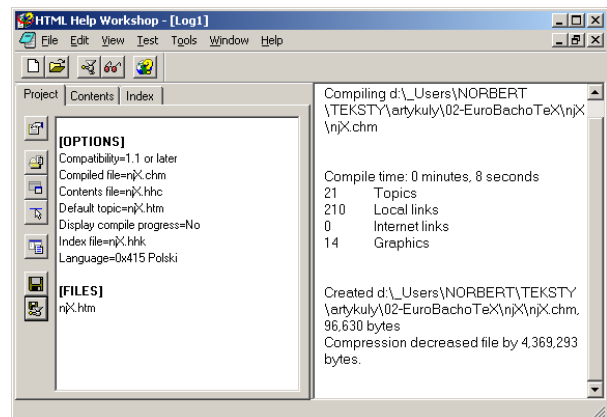
- have help source in HTML format (file or a set)
- prepare the project of final help, which may specify the table of contents, index etc.
- compile HTML help project using HTML Help Workshop<sup>1</sup> [1] to obtain the final '.chm' file.

HTML help source may be prepared using any tool (we will concentrate on L<sup>A</sup>T<sub>E</sub>X2HTML package in this paper).

To build an HTML help project, HTML Help Workshop may be used as user interface or you can

<sup>1</sup> HTML Workshop is a product of Microsoft(r) Corporation.

use a plain ascii editor if only you know the syntax of the project file (compare with HTML Workshop documentation). The same concerns the table of contents and index files. They use special HTML/XML tags.



The final step is the '.chm' file generation. It can be done inside HTML Help Workshop: the HTML help project file must be loaded and compiled.

Note that after the compilation process puts all the required information (all '.htm' files, graphics files, table of contents, index) inside a single '.chm' file. The data contained within the final file is compressed with an impressive ratio.

## L<sup>A</sup>T<sub>E</sub>X2HTML

It is well known that L<sup>A</sup>T<sub>E</sub>X2HTML easily generates HTML output taking care of the structure of the document (this allows L<sup>A</sup>T<sub>E</sub>Xdocument sections to be converted to context help pages). As a result we obtain a set of '.htm' files and necessary graphics files (equations, transformed EPS graphics).

Well, a part of job is done ...

## L<sup>A</sup>T<sub>E</sub>X2HTML2CHM

We have augmented the L<sup>A</sup>T<sub>E</sub>X2HTML with some code to produce files which are required by HTML Help Workshop. As a result you can run L<sup>A</sup>T<sub>E</sub>X2HTML with `-html_help` switch to make it generate a few additional files:

- '**hhp**' HTML help project file
- '**hhc**' table of contents of the HTML help
- '**hhk**' index file for the HTML help
- '**c**' C language source code to make it easier to call context help pages from your program

After such L<sup>A</sup>T<sub>E</sub>X2HTML call it is enough to compile the HTML help project. Simply click '**hhp**' file in the file manager program you use and select **File | Compile...** menu option in HTML Help Workshop that gets called. A '.chm.' file will be produced.

The '.c' file may be easily put into your own program to easy call any page of the help. For example:

```
CallHtmlHelpTopic("sec:Introduction");
```

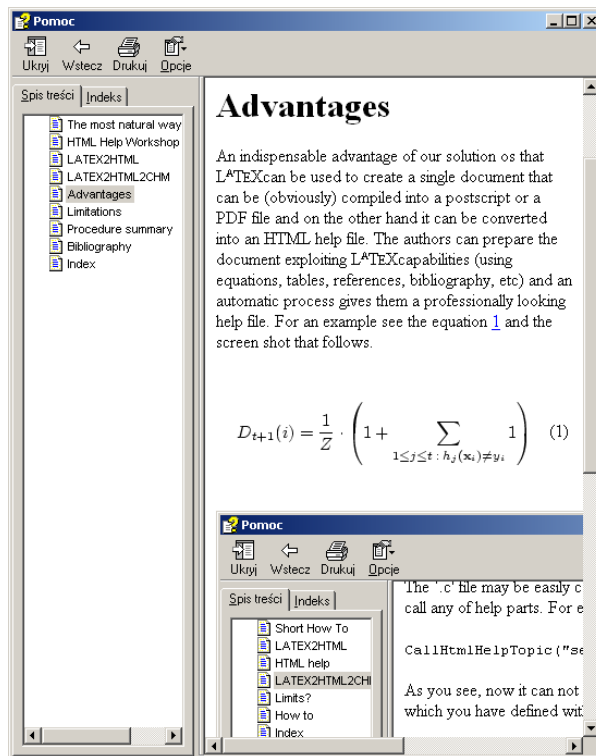
As you can see, it can not be easier than the above, you simply call labels you have defined with `\label` macro in your L<sup>A</sup>T<sub>E</sub>Xfile!

CallHtmlHelpTopic function is a part of the distribution of L<sup>A</sup>T<sub>E</sub>X2HTML2CHM.

## Advantages

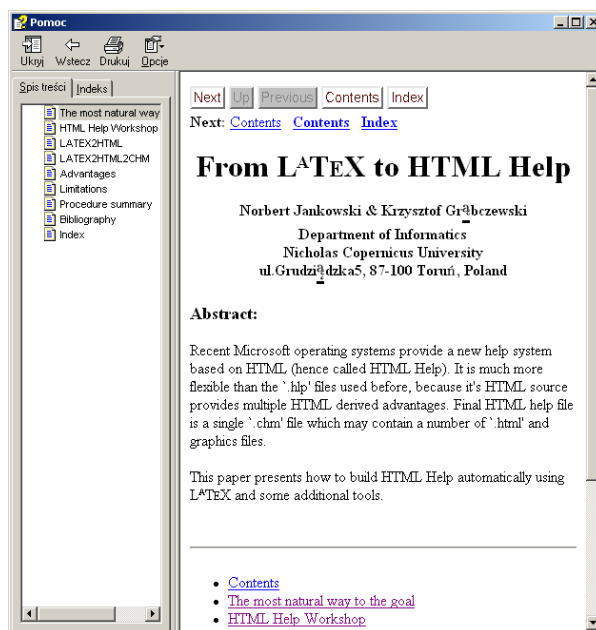
An indispensable advantage of our solution is that L<sup>A</sup>T<sub>E</sub>X can be used to create a single document that can be (obviously) compiled into a postscript or a PDF file and on the other hand it can be converted into an HTML help file. The authors can prepare the document exploiting L<sup>A</sup>T<sub>E</sub>X capabilities (using equations, tables, references, bibliography, etc) and an automatic process gives them a professionally looking help file. For an example see the equation 1 and the screen shot that follows.

$$D_{t+1}(i) = \frac{1}{Z} \cdot \left( 1 + \sum_{1 \leq j \leq t : h_j(\mathbf{x}_i) \neq y_i} 1 \right) \quad (1)$$



## Limitations

The limitations of L<sup>A</sup>T<sub>E</sub>X2HTML2CHM are mostly derived from L<sup>A</sup>T<sub>E</sub>X2HTML. If only it is possible to obtain HTML output from L<sup>A</sup>T<sub>E</sub>X2HTML you should be able to build HTML help too. At least we hope so ...

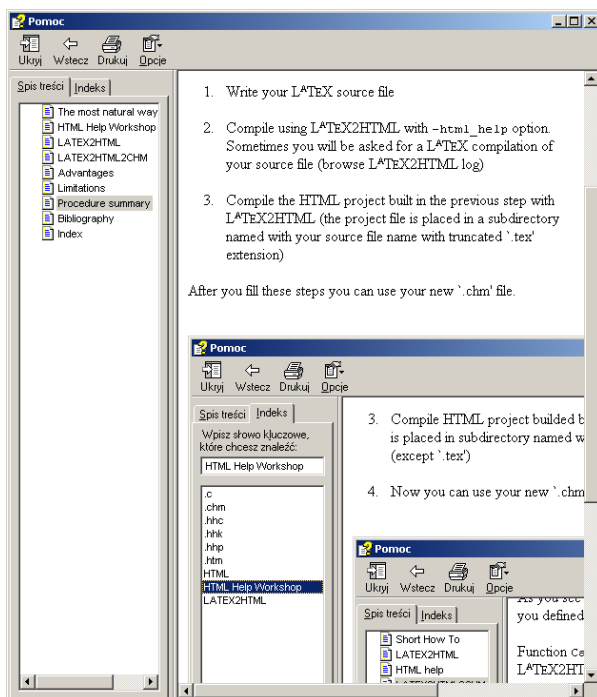


## Procedure summary

To create an HTML help file it is enough to proceed according to the following:

1. Write your L<sup>A</sup>T<sub>E</sub>X source file
2. Compile using L<sup>A</sup>T<sub>E</sub>X2HTML with `-html_help` option. Sometimes you will be asked for a L<sup>A</sup>T<sub>E</sub>X compilation of your source file (browse L<sup>A</sup>T<sub>E</sub>X2HTML log)
3. Compile the HTML project built in the previous step with L<sup>A</sup>T<sub>E</sub>X2HTML (the project file is placed in a subdirectory named with your source file name with truncated `.tex` extension)

After you fill these steps you can use your new `.chm` file.



## References

- [1] Microsoft Corporation. Microsoft HTML Help. Technical report, Microsoft Corporation, 1999.
- [2] N. Drakos and R. Moore. The L<sup>A</sup>T<sub>E</sub>X2html translator. Technical report, Computer Based Learning Unit University of Leeds and Mathematics Department Macquarie University, Sydney, 2000.