

# Configuring PFE for use with L<sup>A</sup>T<sub>E</sub>X

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This document can be found on the web in PDF format with links to the software described at the author's web page or by searching for the string "AGMcfgPFEforLaTeX".<sup>1</sup>

## Abstract

Many students wishing to use L<sup>A</sup>T<sub>E</sub>X to write up dissertations, projects and theses wish to do so on a PC platform. Such students are usually guided towards the excellent MiKTeX distribution for Windows. The set up of MiKTeX is relatively easy and becomes easier with each distribution. This document is intended to begin where the MiKTeX setup ends and therefore describes setting up a text editor to run the necessary L<sup>A</sup>T<sub>E</sub>X commands. In particular setting up the text editor Programmers File Editor (PFE) is described.

The set up described in this document is biased towards WindowsXP since this is the latest release of Windows at the time of writing and will ensure this document remains useful for as long as possible. The set up should be very similar (if not exactly the same) under previous or more recent versions of Windows. If you have any difficulties with setting up anything described in this document under any version of Windows the author is willing to offer help via e-mail.

The versions of software described here are:

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<sup>1</sup>Using a long search string such as this enables the document to be located even if the author's web page is deleted or moved. Please do not put this string in any document that can be accessed on the web. You can refer to it in web documents as "the string obtained by removing the - characters from AGM-cfg-PFE-for-LaTeX". Read more about this by searching the web for the string obtained by joining together `lamports` and `wwnine` and `poster`.

- MikTeX version 2, available from <http://www.miktex.org/>
- Programmers' File Editor (PFE) version 1.01.000 32 bit edition, available from <http://www.lancs.ac.uk/people/cpaap/pfe/>

PFE is freeware so can be installed on many machines without any requirement to register or purchase a licence. PFE is available from the PFE home page as a compressed zip archive at <http://www.lancs.ac.uk/people/cpaap/pfe/> and also from many freeware archives. Search for the file `pfe101i.zip`.

Installing PFE only requires the zipped archive to be unzipped and copied to a suitable location. All of the files in the archive must be kept together. A *suitable location* might be `C:\Program Files\PFE` but not the desktop. A shortcut can be created so that PFE can be accessed from an icon on the desktop or via the Start button.

Now setup PFE for use with  $\LaTeX$ . Open PFE and go to the “Preferences...” option on the “Options” drop down menu. Select the “Associations” category and click the “New...” button on the right. In the box that appears type `.tex` (make sure you include the dot). Click “OK”; you have now associated  $\TeX$  files with PFE so that double clicking a file with file extension `.tex` will open it in PFE. Some users may wish to set up file associations for the  $\LaTeX$  files `.sty` and `.cls` and possibly other files types.<sup>2</sup>

Remaining in the Preferences part of PFE choose “Execute Menu” from the “Category” list on the left hand side. Click the “New...” button on the right to create a new execute menu item. Now copy the following commands into the corresponding boxes:<sup>3</sup>

Menu Item: Run LaTeX (output captured)

Command: `"C:\Program Files\MikTeX\miktex\bin\latex" -src "%f"`

Directory: `%u%d`

Under “Start command” select “...and capture output”

Check the “Options” boxes “First check for unsaved files”, “Auto-scroll window to end of output” and “Reuse any existing output window”.

Now create two further Execute Menu items in the same way using the following commands.

Menu Item: Run LaTeX (output uncaptured)

Command: `"C:\Program Files\MikTeX\miktex\bin\latex" -src "%f"`

Directory: `%u%d`

Under “Start command” select “...as independent process”

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<sup>2</sup> `.sty` and `.cls` are also files used by  $\LaTeX$  but they need not concern us here.

<sup>3</sup> If you have the PDF file for this document it may be beneficial to copy and paste the commands. To copy text in Adobe Acrobat Viewer press V then highlight the required text. Press Ctrl+C to copy, then paste the text into the appropriate place using Ctrl+V.

Check the “Options” box “First check for unsaved files”.

Menu Item: Run YAP

Command: "C:\Program Files\MiKTeX\miktex\bin\yap" -1 "%n"

Directory: %u\%d

Under “Start command” select “...as independent process”

Check the “Options” box “First check for unsaved files”.

Click “OK” and all the settings should be saved. To check they have been, click “Execute” on the menu bar in PFE. On the right hand side of the drop down menu you should see the three commands you entered: “Run LaTeX (output captured)”, “Run LaTeX (output uncaptured)” and “Run YAP”.

To test the execute menu, open a  $\text{\TeX}$  document in PFE (if you haven’t created one yet you can use the one given in the appendix) then goto “Execute”  $\implies$  “Run LaTeX (output uncaptured)”. A DOS command box should briefly appear where  $\text{\LaTeX}$  is executed. If no errors are produced then a DVI file should be written to same location as the  $\text{\TeX}$  document. To view the DVI file go to “Execute”  $\implies$  “Run YAP”. The YAP previewer should now open and display the output of your file.

Now there is another little thing you can do to speed up ‘ $\text{\LaTeX}$ ing’. Since you will execute the  $\text{\LaTeX}$  and YAP commands many times it is useful to be able to access them using keyboard shortcuts.

In PFE select “Key Mapping...” from the “Options” menu.

Look for the “Functions” drop down box about 2/3 of the way down the box and click on the down arrow on the right. From the drop down list select “ExecUserCommand1”, this means “Execute User Command 1” (if you didn’t guess).

User Command 1 is of course the first of the commands you have just entered, viz the command to run  $\text{\LaTeX}$  (output captured). You can now select a key sequence that allows you to execute the command via the keyboard. I chose **Alt+Ctrl+C** for “Run LaTeX (output captured)”, **Alt+Ctrl+L** for “Run LaTeX (output uncaptured)” and **Alt+Ctrl+Y** for “Run YAP”.

It is now a good time to explain the difference between capturing and not capturing output from the run LaTeX commands. When  $\text{\LaTeX}$  is executed it outputs information about the  $\text{\TeX}$  version begin used, error messages, information about the DVI output and lots of other information which is generally not needed. It can sometimes be useful to view this information when trying to find errors in a document that won’t ‘LaTeX’ (i. e.  $\text{\LaTeX}$  cannot produce a DVI output file due to errors in the source `.tex` file).

Part of the output from  $\text{\LaTeX}$  for this document is shown below.

```
> cd D:\miktexunderxp
> "C:\Program Files\MiKTeX\miktex\bin\latex" -src "latexonPC.tex"
```

```

D:\miktexunderxp>"C:\Program Files\MiKTeX\miktex\bin\latex" -src "latexonPC.tex"
This is TeX, Version 3.14159 (MiKTeX 2)
(latexonPC.tex
LaTeX2e <2000/06/01>
Babel <v3.6Z> and hyphenation patterns for english, french, german, ngerman, du
mylang, nohyphenation, loaded.
(C:\Program Files\MiKTeX\tex\latex\base\article.cls
Document Class: article 2000/05/19 v1.4b Standard LaTeX document class
(C:\Program Files\MiKTeX\tex\latex\base\size12.clo))

... snip ...

(see the transcript file for additional information)
Output written on latexonPC.dvi (9 pages, 40208 bytes).
Transcript written on latexonPC.log.

```

From this you can see that when this document was prepared it was called `latexonPC.tex` and stored in the folder `miktexunderxp` on my D drive and that I was using MiKTeX version 2.

If the above steps to create keyboard shortcuts to the often used  $\LaTeX$  commands have been followed then when preparing a  $\LaTeX$  document the user only needs to press `Ctrl+Alt+L` to ‘ $\LaTeX$ ’ it, (I usually have to press `Enter` for “Yes” to saving files that have been altered), then press `Alt+Ctrl+Y` to preview it in YAP. Other key mappings can be set to fit with the user’s preference. Be careful not to overwrite the usual keyboard short cuts like `Ctrl+C` for copying, `Ctrl+S` for saving, etc.

## A A basic $\LaTeX$ document

```
\documentclass[12pt]{article}
```

```
\begin{document}
```

```
This is a basic \LaTeX{} document.
```

```
The solutions of the the quadratic equation
```

```
$$px^2+qx+r=0,$$
```

are given by the formula

$$x = \frac{-q \pm \sqrt{q^2 - 4pr}}{2p}.$$

`\end{document}`

## B Some resources for L<sup>A</sup>T<sub>E</sub>X

Two good resources for L<sup>A</sup>T<sub>E</sub>X newcomers are:

- A Grasshopper's Approach to L<sup>A</sup>T<sub>E</sub>X by Sebastian Reich available from <http://www.maths.surrey.ac.uk/personal/st/S.Reich/teaching.html>
- The Not So Short Introduction to L<sup>A</sup>T<sub>E</sub>X 2<sub>ε</sub> by Tobias Oetiker is an excellent resource for L<sup>A</sup>T<sub>E</sub>X beginners.

Also check the authors' web page <http://www.ilovemaths.co.uk/latex/> where additional articles on L<sup>A</sup>T<sub>E</sub>X will be posted occasionally.