

MS Word as basic Latex editor/previewer

Martin Densing

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1 The Problem

This Word-file with VBA-Macros (only tested on MS Windows) tries to address the problem that

- Some people want write papers with Latex, but supervisors and co-authors do not want to work with Latex, and prefer word
- Word has superb collaboration features, the best track changes and commenting system: You can comment on comments, concurrent editing etc. You can also compare two documents, with a reasonable, editable(!) merged output file. The spelling and grammar checking is also best. You can fold headings.
- Converting a latex-generated .pdf to word is easy: Just open the .pdf in word. The problem is the back-conversion to Latex, and the usual program pandoc cannot handle track-changes etc. well. Hence, we try to stay totally in Latex.

Hence, the intended workflow is as follows:

1. After you drafted as main author your .tex in your preferred Latex-editor, paste it into a .doc that contains the VBA-Macros (as has this file). For a nice result, set the paragraph spacing to zero.
2. Run the previewSnippet VBA-macro (accessible also through the new Latex-Ribbon). This uses the usually preview-package to preview: tables, equation, align, and figure (can be extended to other environments).
3. There is no preview of bibliography. This can be done in 20 seconds manually. Run the runLaTeX-macro, or use your preferred Latex-editor to produce a .pdf of your work (which has the reference section), then open the .pdf with word (yes, this works), and paste the reference section at the end.
4. There are only two files: LaTeXeditor.doc (which can be renamed), and preamble.tex, for the tex-preamble of the snippets.
5. Look at the macro-code (shortcut: ALT+F11), and modify

1.1 Caveats

- For preview of snippets: You need a Latex-installation with the following Latex-packages installed: amsmath, preview, standalone. You need also a .pdf to .png converter: The code currently uses the free-ware ghostscript program, and the path is hardcoded (please search and replace in VBA): c:/Program Files/ /gswin64 or gswin32 for the older 32-bit version. You can use any other converter program.
- RunLateX. This macro compiles the whole document and opens the default viewer for .pdf. So you need trivially a pdf-viewer installed.
- VBA-Macro are sometimes considered as bad by Anti-Virus Software. Hence, the VBA-code that calls external programs is commented out. There are 4 lines marked with COMMENT FOLLOWING LINE OUT FOR SAVING IF MALICIOUS MACRO DETECTED (1/4). If you save the .doc, please comment always these 4 lines. Also add the file-location to the trusted location in Word.

1.2 Issues/ToDo

- Make a search-macro that toggles item by a nice bullet
- Trailing } of headings gets not colored. See attempt in unfinished subroutine ColorHeading
- The snippets are currently placed as pictures in front of text. They could be put as inline-shapes, and their size could be also adjusted; at the moment, the original size is taken.
- Only ASCII files currently work always. Make the program fully UTF compatible.

2 Example Code for Preview Snippets

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$$a + b = c \tag{1}$$

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Table 1: my table

a	b
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$$\int_a^b f(x) dx \tag{2}$$

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Figure 1: my figure