Sub-files and Sub-folders
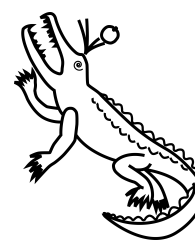
Part of the cheat sheet series in partnership with CUPS

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What do they do and why should I use them?

Sub-folders and sub-files are particularly important for managing larger documents, such as reports. They are native features and do not require any additional packages to implement, though packages are available which alter the functionality. This discussion will not centre around the inclusion of other files (images and bibliography files for example) but management of these files is made much easier by use of sub-files and sub-folders.

Sub-files allow one to break the content of a document into smaller TeX files. One can then edit the document compiling only single sections, or certain sections in order to improve compile times and isolate errors, before including all sub-files to compile the completed document. It is also a useful methodology for maintaining a good document structure, in much the same way as having sensibly managed sections.

Sub-folders work the same way as any file manager and are generally good practice for avoiding clutter within the directory. When working with large files including sub-files, images, bibliography files and any other figures it is important to have them easily accessible.

Top Tip!

One of the best ways to manage your document is by separating the preamble into its own sub-file and then including it before the begin document command.
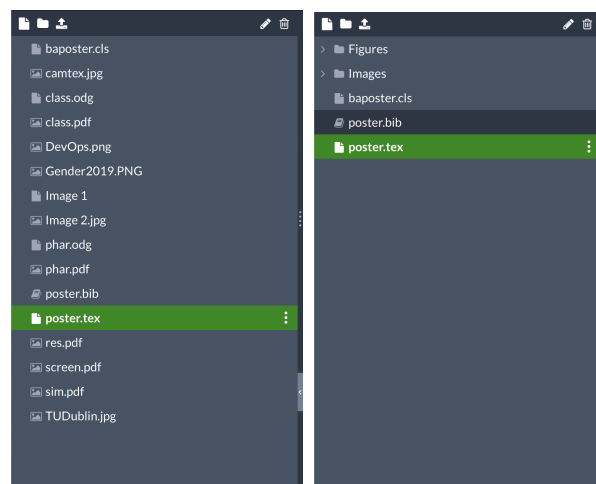
This makes document manager much easier, and gives a clean space for managing all the included packages and commands.

For particularly complicated documents, it even makes sense to have separate preamble and custom command files!

File Extensions

When including other TeX files (.tex) in the directory the file extension can be ignored.

This is not true in general when including other file types (for example when you include a graphic or import a bibliography).

The syntax for these processes is found in the instructional references and other cheat sheets.

Demonstration

Demonstration of sub-folders
Fortunately, within Overleaf editor it is very straightforward to create new sub-files and folders, with the built in menu at the top of the directory. The folder navigation is a simple drag and drop system (as with all modern file managers). Shown right is an example from within a document showing how the use of folders aids in organisation and allows for more quick access to the files you need (especially with similar naming).

Including sub-files
LaTeX native commands for including sub-files are the \input and \include commands. The commands are used as:

$$\input\{filename\} \qquad \include\{filename\}$$

It is vital to note that the sub-files input or included within the document of the main file *must not* contain any preamble. Input allows for nesting of input commands, where include does not.

$$\include\{subfiles/introduction\}$$

The include command has extra functionality such that each included file has an .aux file storing information of created labels and contents for the table of contents, list of figures, etc. You can use \include only with a comma separated list of file names (make sure that there are no leading or trailing spaces). If you do this LATEX will only process the files contained in that list. This can be used to enhance compilation speed if you're only working on a small part of a bigger document. Page numbers and cross references will however still work, as the .aux files of left out files will still be processed.

Topic Overview

To gain additional functionality, the two most common packages would be sub-files and standalone. In most cases, it is not necessary to use these features and the ease of use of the default implementation is best.

Sub-files allows for compilation of each sub-files independently (allows each sub-files to act as an individually document, pulling the preamble from the main document).

Standalone allows for each .tex file in the directory to have an independent preamble.