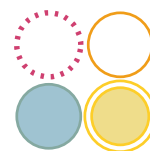


latexindent.pl

Version 3.4.1



Chris Hughes *

January 18, 2018

`latexindent.pl` is a Perl script that indents `.tex` (and other) files according to an indentation scheme that the user can modify to suit their taste. Environments, including those with alignment delimiters (such as `tabular`), and commands, including those that can split braces and brackets across lines, are *usually* handled correctly by the script. Options for `verbatim`-like environments and commands, together with indentation after headings (such as `chapter`, `section`, etc) are also available. The script also has the ability to modify line breaks, and add comment symbols. All user options are customisable via the switches in the YAML interface; you can find a quick start guide in Section 1.4 on page 7.

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*and contributors! See Section 8.2 on page 80. For all communication, please visit [6].



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1 Introduction

1.1 Thanks

I first created `latexindent.pl` to help me format chapter files in a big project. After I blogged about it on the T_EX stack exchange [1] I received some positive feedback and follow-up feature requests. A big thank you to Harish Kumar [8] who helped to develop and test the initial versions of the script.

The YAML-based interface of `latexindent.pl` was inspired by the wonderful `arara` tool; any similarities are deliberate, and I hope that it is perceived as the compliment that it is. Thank you to Paulo Cereda and the team for releasing this awesome tool; I initially worried that I was going to have to make a GUI for `latexindent.pl`, but the release of `arara` has meant there is no need.

There have been several contributors to the project so far (and hopefully more in the future!); thank you very much to the people detailed in Section 8.2 on page 80 for their valued contributions, and thank you to those who report bugs and request features at [6].

1.2 License

`latexindent.pl` is free and open source, and it always will be; it is released under the GNU General Public License v3.0.

Before you start using it on any important files, bear in mind that `latexindent.pl` has the option to overwrite your `.tex` files. It will always make at least one backup (you can choose how many it makes, see page 18) but you should still be careful when using it. The script has been tested on many files, but there are some known limitations (see Section 7). You, the user, are responsible for ensuring that you maintain backups of your files before running `latexindent.pl` on them. I think it is important at this stage to restate an important part of the license here:

This program is distributed in the hope that it will be useful, but WITHOUT ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE. See the GNU General Public License for more details.

There is certainly no malicious intent in releasing this script, and I do hope that it works as you expect it to; if it does not, please first of all make sure that you have the correct settings, and then feel free to let me know at [6] with a complete minimum working example as I would like to improve the code as much as possible.



Before you try the script on anything important (like your thesis), test it out on the sample files in the `test-case` directory [6].

If you have used any version 2. of `latexindent.pl`, there are a few changes to the interface; see appendix D on page 84 and the comments throughout this document for details.*



1.3 About this documentation

As you read through this documentation, you will see many listings; in this version of the documentation, there are a total of 345. This may seem a lot, but I deem it necessary in presenting the various different options of `latexindent.pl` and the associated output that they are capable of producing.

The different listings are presented using different styles:

LISTING 1: `demo-tex.tex`
demonstration .tex file

This type of listing is a .tex file.

LISTING 2:
`fileExtensionPreference`

```

38 fileExtensionPreference:
39   .tex: 1
40   .sty: 2
41   .cls: 3
42   .bib: 4

```

This type of listing is a .yaml file; when you see line numbers given (as here) it means that the snippet is taken directly from `defaultSettings.yaml`, discussed in detail in Section 5 on page 18.

LISTING 3: `modifyLineBreaks`

```

391 modifyLineBreaks:
392   preserveBlankLines: 1
393   condenseMultipleBlankLinesInto: 1

```

This type of listing is a .yaml file, but it will only be relevant when the `-m` switch is active; see Section 6 on page 51 for more details.

N: 2017-06-25

You will occasionally see dates shown in the margin (for example, next to this paragraph!) which detail the date of the version in which the feature was implemented; the 'N' stands for 'new as of the date shown' and 'U' stands for 'updated as of the date shown'. If you see ✨, it means that the feature is either new (N) or updated (U) as of the release of the current version; if you see ✨ attached to a listing, then it means that listing is new (N) or updated (U) as of the current version. If you have not read this document before (and even if you have!), then you can ignore every occurrence of the ✨; they are simply there to highlight new and updated features. The new and updated features in this documentation (V3.4.1) are on the following pages:

<i>perl module installer helper script</i> (N)	9
<i>screenlog switch created</i> (N)	13
<i>STDIN allowed</i> (N)	14
<i>no options/filename updated</i> (U)	14
<i>showDecorationStartCodeBlockTrace feature for log file</i> (N)	19
<i>log file pattern layout for log file</i> (N)	19
<i>update to spacesBeforeDoubleBackSlash in ampersand alignment</i> (U)	22
<i>spacesBeforeAmpersand in ampersand alignment</i> (N)	22
<i>spacesAfterAmpersand in ampersand alignment</i> (N)	22
<i>justification of cells in ampersand alignment</i> (N)	22
<i>one sentence per line</i> (N)	54
<i>perl module helper script</i> (N)	81

1.4 Quick start

If you'd like to get started with `latexindent.pl` then simply type

```
cmh:~$ latexindent.pl myfile.tex
```

from the command line. If you receive an error message such as that given in Listing 4, then you need to install the missing perl modules.



LISTING 4: Possible error messages

```
Can't locate File/HomeDir.pm in @INC (@INC contains:
/Library/Perl/5.12/darwin-thread-multi-2level/Library/Perl/5.12
/Network/Library/Perl/5.12/darwin-thread-multi-2level
/Network/Library/Perl/5.12
/Library/Perl/Updates/5.12.4/darwin-thread-multi-2level
/Library/Perl/Updates/5.12.4
/System/Library/Perl/5.12/darwin-thread-multi-2level/System/Library/Perl/5.12
/System/Library/Perl/Extras/5.12/darwin-thread-multi-2level
/System/Library/Perl/Extras/5.12.) at helloworld.pl line 10.
BEGIN failed--compilation aborted at helloworld.pl line 10.
```

latexindent.pl ships with a script to help with this process; if you run the following script, you should be prompted to install the appropriate modules.

```
cmh:~$ perl latexindent-module-installer.pl
```

You might also like to see <https://stackoverflow.com/questions/19590042/error-cant-locate-file-homedir-pm-in-inc>, for example, as well as appendix A on page 80.

2 Demonstration: before and after

Let's give a demonstration of some before and after code – after all, you probably won't want to try the script if you don't much like the results. You might also like to watch the video demonstration I made on youtube [16]

As you look at Listings 5 to 10, remember that latexindent.pl is just following its rules, and there is nothing particular about these code snippets. All of the rules can be modified so that you can personalize your indentation scheme.

In each of the samples given in Listings 5 to 10 the 'before' case is a 'worst case scenario' with no effort to make indentation. The 'after' result would be the same, regardless of the leading white space at the beginning of each line which is stripped by latexindent.pl (unless a verbatim-like environment or noIndentBlock is specified – more on this in Section 5).

LISTING 5: filecontents1.tex

```
\begin{filecontents}{mybib.bib}
@online{strawberryperl,
title="Strawberry Perl",
url="http://strawberryperl.com/"}
@online{cmhblog,
title="A Perl script ..."
url="..."
}
\end{filecontents}
```

LISTING 6: filecontents1.tex default output

```
\begin{filecontents}{mybib.bib}
  @online{strawberryperl,
    title="Strawberry Perl",
    url="http://strawberryperl.com/"}
  @online{cmhblog,
    title="A Perl script ..."
    url="..."
  }
\end{filecontents}
```

LISTING 7: tikzset.tex

```
\tikzset{
shrink inner sep/.code={
\pgfkeysgetvalue...
\pgfkeysgetvalue...
}
}
```

LISTING 8: tikzset.tex default output

```
\tikzset{
  shrink inner sep/.code={
    \pgfkeysgetvalue...
    \pgfkeysgetvalue...
  }
}
```




LISTING 9: pstricks.tex

```
\def\Picture#1{%
\def\stripH{#1}%
\begin{pspicture}[showgrid]
\psforeach{\row}{%
{{3,2.8,2.7,3,3.1}},%
{2.8,1,1.2,2,3}},%
...
}%
\expandafter...
}
\end{pspicture}}
```

LISTING 10: pstricks.tex default output

```
\def\Picture#1{%
\def\stripH{#1}%
\begin{pspicture}[showgrid]
\psforeach{\row}{%
{{3,2.8,2.7,3,3.1}},%
{2.8,1,1.2,2,3}},%
...
}%
\expandafter...
}
\end{pspicture}}
```


3 How to use the script

latexindent.pl ships as part of the TeXLive distribution for Linux and Mac users; latexindent.exe ships as part of the TeXLive and MiKTeX distributions for Windows users. These files are also available from github [6] should you wish to use them without a TeX distribution; in this case, you may like to read appendix B on page 82 which details how the path variable can be updated.

In what follows, we will always refer to latexindent.pl, but depending on your operating system and preference, you might substitute latexindent.exe or simply latexindent.

There are two ways to use latexindent.pl: from the command line, and using arara; we discuss these in Section 3.1 and Section 3.2 respectively. We will discuss how to change the settings and behaviour of the script in Section 5 on page 18.

latexindent.pl ships with latexindent.exe for Windows users, so that you can use the script with or without a Perl distribution. If you plan to use latexindent.pl (i.e, the original Perl script) then you will need a few standard Perl modules – see appendix A on page 80 for details; in particular, note that a module installer helper script is shipped with latexindent.pl.

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3.1 From the command line

latexindent.pl has a number of different switches/flags/options, which can be combined in any way that you like, either in short or long form as detailed below. latexindent.pl produces a .log file, indent.log, every time it is run; the name of the log file can be customized, but we will refer to the log file as indent.log throughout this document. There is a base of information that is written to indent.log, but other additional information will be written depending on which of the following options are used.

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-v, -version

```
cmh:~$ latexindent.pl -v
```

This will output only the version number to the terminal.

-h, -help

```
cmh:~$ latexindent.pl -h
```

As above this will output a welcome message to the terminal, including the version number and available options.

```
cmh:~$ latexindent.pl myfile.tex
```

This will operate on myfile.tex, but will simply output to your terminal; myfile.tex will not be changed by latexindent.pl in any way using this command.



`-w, -overwrite`

```
cmh:~$ latexindent.pl -w myfile.tex
cmh:~$ latexindent.pl --overwrite myfile.tex
cmh:~$ latexindent.pl myfile.tex --overwrite
```

This *will* overwrite `myfile.tex`, but it will make a copy of `myfile.tex` first. You can control the name of the extension (default is `.bak`), and how many different backups are made – more on this in Section 5, and in particular see `backupExtension` and `onlyOneBackUp`.

Note that if `latexindent.pl` can not create the backup, then it will exit without touching your original file; an error message will be given asking you to check the permissions of the backup file.

`-o=output.tex, -outputfile=output.tex`

```
cmh:~$ latexindent.pl -o=output.tex myfile.tex
cmh:~$ latexindent.pl myfile.tex -o=output.tex
cmh:~$ latexindent.pl --outputfile=output.tex myfile.tex
cmh:~$ latexindent.pl --outputfile output.tex myfile.tex
```

This will indent `myfile.tex` and output it to `output.tex`, overwriting it (`output.tex`) if it already exists¹. Note that if `latexindent.pl` is called with both the `-w` and `-o` switches, then `-w` will be ignored and `-o` will take priority (this seems safer than the other way round).

Note that using `-o` as above is equivalent to using

```
cmh:~$ latexindent.pl myfile.tex > output.tex
```

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You can call the `-o` switch with the name of the output file *without* an extension; in this case, `latexindent.pl` will use the extension from the original file. For example, the following two calls to `latexindent.pl` are equivalent:

```
cmh:~$ latexindent.pl myfile.tex -o=output
cmh:~$ latexindent.pl myfile.tex -o=output.tex
```

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You can call the `-o` switch using a `+` symbol at the beginning; this will concatenate the name of the input file and the text given to the `-o` switch. For example, the following two calls to `latexindent.pl` are equivalent:

```
cmh:~$ latexindent.pl myfile.tex -o=+new
cmh:~$ latexindent.pl myfile.tex -o=myfilenew.tex
```

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You can call the `-o` switch using a `++` symbol at the end of the name of your output file; this tells `latexindent.pl` to search successively for the name of your output file concatenated with `0, 1, ...` while the name of the output file exists. For example,

```
cmh:~$ latexindent.pl myfile.tex -o=output++
```

tells `latexindent.pl` to output to `output0.tex`, but if it exists then output to `output1.tex`, and so on.

Calling `latexindent.pl` with simply

¹Users of version 2.* should note the subtle change in syntax



```
cmh:~$ latexindent.pl myfile.tex -o=++
```

tells it to output to `myfile0.tex`, but if it exists then output to `myfile1.tex` and so on.

The `+` and `++` feature of the `-o` switch can be combined; for example, calling

```
cmh:~$ latexindent.pl myfile.tex -o=+out++
```

tells `latexindent.pl` to output to `myfileout0.tex`, but if it exists, then try `myfileout1.tex`, and so on.

There is no need to specify a file extension when using the `++` feature, but if you wish to, then you should include it *after* the `++` symbols, for example

```
cmh:~$ latexindent.pl myfile.tex -o=+out++.tex
```

See appendix D on page 84 for details of how the interface has changed from Version 2.2 to Version 3.0 for this flag.

`-s`, `-silent`

```
cmh:~$ latexindent.pl -s myfile.tex
cmh:~$ latexindent.pl myfile.tex -s
```

Silent mode: no output will be given to the terminal.

`-t`, `-trace`

```
cmh:~$ latexindent.pl -t myfile.tex
cmh:~$ latexindent.pl myfile.tex -t
```

Tracing mode: verbose output will be given to `indent.log`. This is useful if `latexindent.pl` has made a mistake and you're trying to find out where and why. You might also be interested in learning about `latexindent.pl`'s thought process – if so, this switch is for you, although it should be noted that, especially for large files, this does affect performance of the script.

`-tt`, `-ttrace`

```
cmh:~$ latexindent.pl -tt myfile.tex
cmh:~$ latexindent.pl myfile.tex -tt
```

More detailed tracing mode: this option gives more details to `indent.log` than the standard trace option (note that, even more so than with `-t`, especially for large files, performance of the script will be affected).

`-l`, `-local[=myyaml.yaml,other.yaml,...]`

```
cmh:~$ latexindent.pl -l myfile.tex
cmh:~$ latexindent.pl -l=myyaml.yaml myfile.tex
cmh:~$ latexindent.pl -l myyaml.yaml myfile.tex
cmh:~$ latexindent.pl -l first.yaml,second.yaml,third.yaml myfile.tex
cmh:~$ latexindent.pl -l=first.yaml,second.yaml,third.yaml myfile.tex
cmh:~$ latexindent.pl myfile.tex -l=first.yaml,second.yaml,third.yaml
```



`latexindent.pl` will always load `defaultSettings.yaml` (rhymes with camel) and if it is called with the `-l` switch and it finds `localSettings.yaml` in the same directory as `myfile.tex` then these settings will be added to the indentation scheme. Information will be given in `indent.log` on the success or failure of loading `localSettings.yaml`.

The `-l` flag can take an *optional* parameter which details the name (or names separated by commas) of a YAML file(s) that resides in the same directory as `myfile.tex`; you can use this option if you would like to load a settings file in the current working directory that is *not* called `localSettings.yaml`. In fact, you can specify both *relative* and *absolute paths* for your YAML files; for example

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```
cmh:~$ latexindent.pl -l=../myyaml.yaml myfile.tex
cmh:~$ latexindent.pl -l=/home/cmhughes/Desktop/myyaml.yaml myfile.tex
cmh:~$ latexindent.pl -l=C:\Users\cmhughes\Desktop\myyaml.yaml myfile.tex
```

You will find a lot of other explicit demonstrations of how to use the `-l` switch throughout this documentation,

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You can call the `-l` switch with a '+' symbol either before or after another YAML file; for example:

```
cmh:~$ latexindent.pl -l+=myyaml.yaml myfile.tex
cmh:~$ latexindent.pl -l "+myyaml.yaml" myfile.tex
cmh:~$ latexindent.pl -l=myyaml.yaml+ myfile.tex
```

which translate, respectively, to

```
cmh:~$ latexindent.pl -l=localSettings.yaml,myyaml.yaml myfile.tex
cmh:~$ latexindent.pl -l=localSettings.yaml,myyaml.yaml myfile.tex
cmh:~$ latexindent.pl -l=myyaml.yaml,localSettings.yaml myfile.tex
```

Note that the following is *not* allowed:

```
cmh:~$ latexindent.pl -l+myyaml.yaml myfile.tex
```

and

```
cmh:~$ latexindent.pl -l + myyaml.yaml myfile.tex
```

will *only* load `localSettings.yaml`, and `myyaml.yaml` will be ignored. If you wish to use spaces between any of the YAML settings, then you must wrap the entire list of YAML files in quotes, as demonstrated above.

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You may also choose to omit the `yaml` extension, such as

```
cmh:~$ latexindent.pl -l=localSettings,myyaml myfile.tex
```

`-y`, `-yaml=yaml settings`



```
cmh:~$ latexindent.pl myfile.tex -y="defaultIndent:␣␣"
cmh:~$ latexindent.pl myfile.tex -y="defaultIndent:␣␣',maximumIndentation:'␣'"
cmh:~$ latexindent.pl myfile.tex -y="indentRules:␣one:␣'\t\t\t\t'"
cmh:~$ latexindent.pl myfile.tex
-y='modifyLineBreaks:environments:EndStartsOnOwnLine:3' -m
cmh:~$ latexindent.pl myfile.tex
-y='modifyLineBreaks:environments:one:EndStartsOnOwnLine:3' -m
```

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You can specify YAML settings from the command line using the `-y` or `-yaml` switch; sample demonstrations are given above. Note, in particular, that multiple settings can be specified by separating them via commas. There is a further option to use a `;` to separate fields, which is demonstrated in Section 4.3 on page 17.

Any settings specified via this switch will be loaded *after* any specified using the `-l` switch. This is discussed further in Section 4.4 on page 17.

`-d, -onlydefault`

```
cmh:~$ latexindent.pl -d myfile.tex
```

Only `defaultSettings.yaml`: you might like to read Section 5 before using this switch. By default, `latexindent.pl` will always search for `indentconfig.yaml` or `.indentconfig.yaml` in your home directory. If you would prefer it not to do so then (instead of deleting or renaming `indentconfig.yaml` or `.indentconfig.yaml`) you can simply call the script with the `-d` switch; note that this will also tell the script to ignore `localSettings.yaml` even if it has been called with the `-l` switch; `latexindent.pl` will also ignore any settings specified from the `-y` switch.

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`-c, -cruft=<directory>`

```
cmh:~$ latexindent.pl -c=/path/to/directory/ myfile.tex
```

If you wish to have backup files and `indent.log` written to a directory other than the current working directory, then you can send these ‘cruft’ files to another directory.


`-g, -logfile=<name of log file>`

```
cmh:~$ latexindent.pl -g=other.log myfile.tex
cmh:~$ latexindent.pl -g other.log myfile.tex
cmh:~$ latexindent.pl --logfile other.log myfile.tex
cmh:~$ latexindent.pl myfile.tex -g other.log
```

By default, `latexindent.pl` reports information to `indent.log`, but if you wish to change the name of this file, simply call the script with your chosen name after the `-g` switch as demonstrated above.

`-sl, -screenlog`

```
cmh:~$ latexindent.pl -sl myfile.tex
cmh:~$ latexindent.pl -screenlog myfile.tex
```

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Using this option tells `latexindent.pl` to output the log file to the screen, as well as to your chosen log file.

`-m, -modifylinebreaks`

```
cmh:~$ latexindent.pl -m myfile.tex
cmh:~$ latexindent.pl -modifylinebreaks myfile.tex
```



One of the most exciting developments in Version 3.0 is the ability to modify line breaks; for full details see Section 6 on page 51

`latexindent.pl` can also be called on a file without the file extension, for example

```
cmh:~$ latexindent.pl myfile
```

and in which case, you can specify the order in which extensions are searched for; see Listing 15 on page 18 for full details.

STDIN

```
cmh:~$ cat myfile.tex | latexindent.pl
```

`latexindent.pl` will allow input from STDIN, which means that you can pipe output from other commands directly into the script. For example assuming that you have content in `myfile.tex`, then the above command will output the results of operating upon `myfile.tex`

Similarly, if you simply type `latexindent.pl` at the command line, then it will expect (STDIN) input from the command line.

```
cmh:~$ latexindent.pl
```

Once you have finished typing your input, you can press

- CTRL+D on Linux
- CTRL+Z followed by ENTER on Windows

to signify that your input has finished.

3.2 From arara

Using `latexindent.pl` from the command line is fine for some folks, but others may find it easier to use from `arara`; you can find the `arara` rule at [2].

You can use the rule in any of the ways described in Listing 11 (or combinations thereof). In fact, `arara` allows yet greater flexibility – you can use `yes/no`, `true/false`, or `on/off` to toggle the various options.

LISTING 11: `arara` sample usage

```
% arara: indent
% arara: indent: {overwrite: yes}
% arara: indent: {output: myfile.tex}
% arara: indent: {silent: yes}
% arara: indent: {trace: yes}
% arara: indent: {localSettings: yes}
% arara: indent: {onlyDefault: on}
% arara: indent: { cruft: /home/cmhughes/Desktop }
\documentclass{article}
...
```

Hopefully the use of these rules is fairly self-explanatory, but for completeness Table 1 shows the relationship between `arara` directive arguments and the switches given in Section 3.1.

The `cruft` directive does not work well when used with directories that contain spaces.



TABLE 1: arara directive arguments and corresponding switches

arara directive argument	switch
overwrite	-w
output	-o
silent	-s
trace	-t
localSettings	-l
onlyDefault	-d
cruft	-c

4 indentconfig.yaml, local settings and the -y switch

The behaviour of `latexindent.pl` is controlled from the settings specified in any of the YAML files that you tell it to load. By default, `latexindent.pl` will only load `defaultSettings.yaml`, but there are a few ways that you can tell it to load your own settings files.

4.1 indentconfig.yaml and .indentconfig.yaml

`latexindent.pl` will always check your home directory for `indentconfig.yaml` and `.indentconfig.yaml` (unless it is called with the `-d` switch), which is a plain text file you can create that contains the *absolute* paths for any settings files that you wish `latexindent.pl` to load. There is no difference between `indentconfig.yaml` and `.indentconfig.yaml`, other than the fact that `.indentconfig.yaml` is a 'hidden' file; thank you to [5] for providing this feature. In what follows, we will use `indentconfig.yaml`, but it is understood that this could equally represent `.indentconfig.yaml`. If you have both files in existence then `indentconfig.yaml` takes priority.

For Mac and Linux users, their home directory is `/username` while Windows (Vista onwards) is `C:\Users\username`² Listing 12 shows a sample `indentconfig.yaml` file.

LISTING 12: indentconfig.yaml (sample)

```
# Paths to user settings for latexindent.pl
#
# Note that the settings will be read in the order you
# specify here- each successive settings file will overwrite
# the variables that you specify

paths:
- /home/cmhughes/Documents/yamlfiles/mysettings.yaml
- /home/cmhughes/folder/othersettings.yaml
- /some/other/folder/anynameyouwant.yaml
- C:\Users\chughes\Documents\mysettings.yaml
- C:\Users\chughes\Desktop\test spaces\more spaces.yaml
```

Note that the `.yaml` files you specify in `indentconfig.yaml` will be loaded in the order in which you write them. Each file doesn't have to have every switch from `defaultSettings.yaml`; in fact, I recommend that you only keep the switches that you want to *change* in these settings files.

To get started with your own settings file, you might like to save a copy of `defaultSettings.yaml` in another directory and call it, for example, `mysettings.yaml`. Once you have added the path to `indentconfig.yaml` you can change the switches and add more code-block names to it as you see fit – have a look at Listing 13 for an example that uses four tabs for the default indent, adds the `tabbing` environment/command to the list of environments that contains alignment delimiters; you might also like to refer to the many YAML files detailed throughout the rest of this documentation.

²If you're not sure where to put `indentconfig.yaml`, don't worry `latexindent.pl` will tell you in the log file exactly where to put it assuming it doesn't exist already.



LISTING 13: mysettings.yaml (example)

```
# Default value of indentation
defaultIndent: "\t\t\t\t\t"

# environments that have tab delimiters, add more
# as needed
lookForAlignDelims:
  tabbing: 1
```

You can make sure that your settings are loaded by checking `indent.log` for details – if you have specified a path that `latexindent.pl` doesn't recognize then you'll get a warning, otherwise you'll get confirmation that `latexindent.pl` has read your settings file ³.



When editing `.yaml` files it is *extremely* important to remember how sensitive they are to spaces. I highly recommend copying and pasting from `defaultSettings.yaml` when you create your first `whateveryoulike.yaml` file.

If `latexindent.pl` can not read your `.yaml` file it will tell you so in `indent.log`.

4.2 localSettings.yaml

The `-l` switch tells `latexindent.pl` to look for `localSettings.yaml` in the *same directory* as `myfile.tex`. For example, if you use the following command

```
cmh:~$ latexindent.pl -l myfile.tex
```

then `latexindent.pl` will (assuming it exists) load `localSettings.yaml` from the same directory as `myfile.tex`.

If you'd prefer to name your `localSettings.yaml` file something different, (say, `mysettings.yaml` as in Listing 13) then you can call `latexindent.pl` using, for example,

```
cmh:~$ latexindent.pl -l=mysettings.yaml myfile.tex
```

Any settings file(s) specified using the `-l` switch will be read *after* `defaultSettings.yaml` and, assuming they exist, any user setting files specified in `indentconfig.yaml`.

Your settings file can contain any switches that you'd like to change; a sample is shown in Listing 14, and you'll find plenty of further examples throughout this manual.

LISTING 14: localSettings.yaml (example)

```
# verbatim environments - environments specified
# here will not be changed at all!
verbatimEnvironments:
  cmhenvironment: 0
  myenv: 1
```

You can make sure that your settings file has been loaded by checking `indent.log` for details; if it can not be read then you receive a warning, otherwise you'll get confirmation that `latexindent.pl` has read your settings file.

³Windows users may find that they have to end `.yaml` files with a blank line



4.3 The -y|yaml switch

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You may use the `-y` switch to load your settings; for example, if you wished to specify the settings from Listing 14 using the `-y` switch, then you could use the following command:

```
cmh:~$ latexindent.pl -y="verbatimEnvironments:cmhenvironment:0;myenv:1" myfile.tex
```

Note the use of `;` to specify another field within `verbatimEnvironments`. This is shorthand, and equivalent, to using the following command:

```
cmh:~$ latexindent.pl
-y="verbatimEnvironments:cmhenvironment:0,verbatimEnvironments:myenv:1"
myfile.tex
```

You may, of course, specify settings using the `-y` switch as well as, for example, settings loaded using the `-l` switch; for example,

```
cmh:~$ latexindent.pl -l=mysettings.yaml
-y="verbatimEnvironments:cmhenvironment:0;myenv:1" myfile.tex
```

Any settings specified using the `-y` switch will be loaded *after* any specified using `indentconfig.yaml` and the `-l` switch.

4.4 Settings load order

`latexindent.pl` loads the settings files in the following order:

1. `defaultSettings.yaml` is always loaded, and can not be renamed;
2. `anyUserSettings.yaml` and any other arbitrarily-named files specified in `indentconfig.yaml`;
3. `localSettings.yaml` but only if found in the same directory as `myfile.tex` and called with `-l` switch; this file can be renamed, provided that the call to `latexindent.pl` is adjusted accordingly (see Section 4.2). You may specify both relative and absolute paths to other YAML files using the `-l` switch, separating multiple files using commas;
4. any settings specified in the `-y` switch.

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A visual representation of this is given in Figure 1.

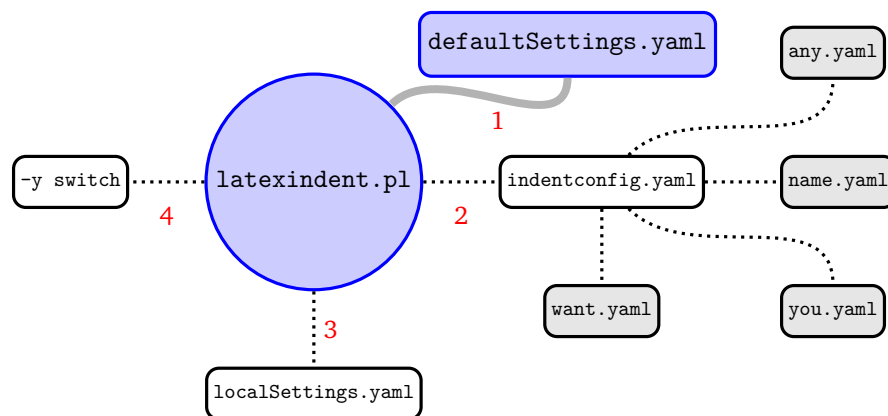


FIGURE 1: Schematic of the load order described in Section 4.4; solid lines represent mandatory files, dotted lines represent optional files. `indentconfig.yaml` can contain as many files as you like. The files will be loaded in order; if you specify settings for the same field in more than one file, the most recent takes priority.



5 defaultSettings.yaml

`latexindent.pl` loads its settings from `defaultSettings.yaml`. The idea is to separate the behaviour of the script from the internal working – this is very similar to the way that we separate content from form when writing our documents in \LaTeX .

If you look in `defaultSettings.yaml` you'll find the switches that govern the behaviour of `latexindent.pl`. If you're not sure where `defaultSettings.yaml` resides on your computer, don't worry as `indent.log` will tell you where to find it. `defaultSettings.yaml` is commented, but here is a description of what each switch is designed to do. The default value is given in each case; whenever you see *integer* in *this* section, assume that it must be greater than or equal to 0 unless otherwise stated.

fileExtensionPreference: *<fields>*

`latexindent.pl` can be called to act on a file without specifying the file extension. For example we can call

```
cmh:~$ latexindent.pl myfile
```

in which case the script will look for `myfile` with the extensions specified in `fileExtensionPreference` in their numeric order. If no match is found, the script will exit. As with all of the fields, you should change and/or add to this as necessary.

Calling `latexindent.pl myfile` with the (default) settings specified in Listing 15 means that the script will first look for `myfile.tex`, then `myfile.sty`, `myfile.cls`, and finally `myfile.bib` in order⁴.

LISTING 15:
fileExtensionPreference

```
fileExtensionPreference:
  .tex: 1
  .sty: 2
  .cls: 3
  .bib: 4
```

backupExtension: *<extension name>*

If you call `latexindent.pl` with the `-w` switch (to overwrite `myfile.tex`) then it will create a backup file before doing any indentation; the default extension is `.bak`, so, for example, `myfile.bak0` would be created when calling `latexindent.pl myfile.tex` for the first time.

By default, every time you subsequently call `latexindent.pl` with the `-w` to act upon `myfile.tex`, it will create successive back up files: `myfile.bak1`, `myfile.bak2`, etc.

onlyOneBackup: *<integer>*

If you don't want a backup for every time that you call `latexindent.pl` (so you don't want `myfile.bak1`, `myfile.bak2`, etc) and you simply want `myfile.bak` (or whatever you chose `backupExtension` to be) then change `onlyOneBackup` to 1; the default value of `onlyOneBackup` is 0.

maxNumberOfBackUps: *<integer>*

Some users may only want a finite number of backup files, say at most 3, in which case, they can change this switch. The smallest value of `maxNumberOfBackUps` is 0 which will *not* prevent backup files being made; in this case, the behaviour will be dictated entirely by `onlyOneBackup`. The default value of `maxNumberOfBackUps` is 0.

cycleThroughBackUps: *<integer>*

Some users may wish to cycle through backup files, by deleting the oldest backup file and keeping

⁴Throughout this manual, listings shown with line numbers represent code taken directly from `defaultSettings.yaml`.



only the most recent; for example, with `maxNumberOfBackUps: 4`, and `cycleThroughBackUps` set to 1 then the copy procedure given below would be obeyed.

```
cmh:~$ copy myfile.bak1 to myfile.bak0
cmh:~$ copy myfile.bak2 to myfile.bak1
cmh:~$ copy myfile.bak3 to myfile.bak2
cmh:~$ copy myfile.bak4 to myfile.bak3
```

The default value of `cycleThroughBackUps` is 0.

`logFilePreferences:` *(fields)*

`latexindent.pl` writes information to `indent.log`, some of which can be customized by changing `logFilePreferences`; see Listing 16. If you load your own user settings (see Section 4 on page 15) then `latexindent.pl` will detail them in `indent.log`; you can choose not to have the details logged by switching `showEveryYamlRead` to 0. Once all of your settings have been loaded, you can see the amalgamated settings in the log file by switching `showAmalgamatedSettings` to 1, if you wish.

LISTING 16: `logFilePreferences`

```
79 logFilePreferences:
80   showEveryYamlRead: 1
81   showAmalgamatedSettings: 0
82   showDecorationStartCodeBlockTrace: 0
83   showDecorationFinishCodeBlockTrace: 0
84   endLogFileWith: '-----'
85   showGitHubInfoFooter: 1
86   PatternLayout:
87     default: "%A%n"
88     trace: "%A%n"
89     ttrace: "%A%n"
```

N: 2018-01-13

When either of the trace modes (see page 11) are active, you will receive detailed information in `indent.log`. You can specify character strings to appear before and after the notification of a found code block using, respectively, `showDecorationStartCodeBlockTrace` and `showDecorationFinishCodeBlockTrace`. A demonstration is given in appendix C on page 83.

The log file will end with the characters given in `endLogFileWith`, and will report the GitHub address of `latexindent.pl` to the log file if `showGitHubInfoFooter` is set to 1.

N: 2018-01-13

`latexindent.pl` uses the `log4perl` module [9] to handle the creation of the logfile. You can specify the layout of the information given in the logfile using any of the Log Layouts detailed at [9].

`verbatimEnvironments:` *(fields)*

A field that contains a list of environments that you would like left completely alone – no indentation will be performed on environments that you have specified in this field, see Listing 17.

LISTING 17:
`verbatimEnvironments`

```
93 verbatimEnvironments:
94   verbatim: 1
95   lstlisting: 1
96   minted: 1
```

LISTING 18:
`verbatimCommands`

```
99 verbatimCommands:
100   verb: 1
101   lstinline: 1
```

Note that if you put an environment in `verbatimEnvironments` and in other fields such as `lookForAlignDelims` or `noAdditionalIndent` then `latexindent.pl` will *always* prioritize `verbatimEnvironments`.



`verbatimCommands:` *<fields>*

A field that contains a list of commands that are verbatim commands, for example `\lstinline`; any commands populated in this field are protected from line breaking routines (only relevant if the `-m` is active, see Section 6 on page 51).

`noIndentBlock:` *<fields>*

If you have a block of code that you don't want `latexindent.pl` to touch (even if it is *not* a verbatim-like environment) then you can wrap it in an environment from `noIndentBlock`; you can use any name you like for this, provided you populate it as demonstrate in Listing 19.

Of course, you don't want to have to specify these as null environments in your code, so you use them with a comment symbol, `%`, followed by as many spaces (possibly none) as you like; see Listing 20 for example.

LISTING 19:
`noIndentBlock`
`noIndentBlock:`
 `noindent: 1`
 `cmhtest: 1`

LISTING 20: `noIndentBlock` demonstration

```
% \begin{noindent}
   this code
       won't
   be touched
       by
       latexindent.pl!
%\end{noindent}
```

`removeTrailingWhitespace:` *<fields>*

Trailing white space can be removed both *before* and *after* processing the document, as detailed in Listing 21; each of the fields can take the values 0 or 1. See Listings 297 to 299 on page 72 for before and after results. Thanks to [17] for providing this feature.

You can specify `removeTrailingWhitespace` simply as 0 or 1, if you wish; in this case, `latexindent.pl` will set both `beforeProcessing` and `afterProcessing` to the value you specify; see Listing 22.

LISTING 21:
`removeTrailingWhitespace`
`removeTrailingWhitespace:`
 `beforeProcessing: 0`
 `afterProcessing: 1`

LISTING 22:
`removeTrailingWhitespace (alt)`
`removeTrailingWhitespace: 1`

N: 2017-06-28

`fileContentsEnvironments:` *<field>*

Before `latexindent.pl` determines the difference between preamble (if any) and the main document, it first searches for any of the environments specified in `fileContentsEnvironments`, see Listing 23. The behaviour of `latexindent.pl` on these environments is determined by their location (preamble or not), and the value `indentPreamble`, discussed next.

LISTING 23:
`fileContentsEnvironments`
`fileContentsEnvironments:`
 `filecontents: 1`
 `filecontents*: 1`



`indentPreamble: 0|1`

The preamble of a document can sometimes contain some trickier code for `latexindent.pl` to operate upon. By default, `latexindent.pl` won't try to operate on the preamble (as `indentPreamble` is set to 0, by default), but if you'd like `latexindent.pl` to try then change `indentPreamble` to 1.

`lookForPreamble: <fields>`

Not all files contain preamble; for example, `sty`, `cls` and `bib` files typically do *not*. Referencing Listing 24, if you set, for example, `.tex` to 0, then regardless of the setting of the value of `indentPreamble`, preamble will not be assumed when operating upon `.tex` files.

`preambleCommandsBeforeEnvironments: 0|1`

Assuming that `latexindent.pl` is asked to operate upon the preamble of a document, when this switch is set to 0 then environment code blocks will be sought first, and then command code blocks. When this switch is set to 1, commands will be sought first. The example that first motivated this switch contained the code given in Listing 25.

LISTING 25: Motivating `preambleCommandsBeforeEnvironments`

```
...
preheadhook={\begin{mdframed}[style=myframedstyle]},
postfoothook=\end{mdframed},
...
```

`defaultIndent: <horizontal space>`

This is the default indentation (`\t` means a tab, and is the default value) used in the absence of other details for the command or environment we are working with; see `indentRules` in Section 5.2 on page 30 for more details.

If you're interested in experimenting with `latexindent.pl` then you can *remove* all indentation by setting `defaultIndent: ""`.

`lookForAlignDelims: <fields>`

This contains a list of environments and/or commands that are operated upon in a special way by `latexindent.pl` (see Listing 26). In fact, the fields in `lookForAlignDelims` can actually take two different forms: the *basic* version is shown in Listing 26 and the *advanced* version in Listing 29; we will discuss each in turn.

The environments specified in this field will be operated on in a special way by `latexindent.pl`. In particular, it will try and align each column by its alignment tabs. It does have some limitations (discussed further in Section 7), but in many cases it will produce results such as those in Listings 27 and 28.

If you find that `latexindent.pl` does not perform satisfactorily on such environments then you can set the relevant key to 0, for example `tabular: 0`; alternatively,

LISTING 24:
`lookForPreamble`

```
126 lookForPreamble:
127   .tex: 1
128   .sty: 0
129   .cls: 0
130   .bib: 0
```

LISTING 26:
`lookForAlignDelims`
(basic)

```
lookForAlignDelims:
  tabular: 1
  tabularx: 1
  longtable: 1
  array: 1
  matrix: 1
  ...
```



if you just want to ignore *specific* instances of the environment, you could wrap them in something from `noIndentBlock` (see Listing 19 on page 20).

LISTING 27: `tabular1.tex`

```
\begin{tabular}{cccc}
1& 2 & 3 & 4\\
5& 6 & & \\
\end{tabular}
```

LISTING 28: `tabular1.tex` default output

```
\begin{tabular}{cccc}
1 & 2 & 3 & 4 \\
5 & & 6 & \\
\end{tabular}
```

If, for example, you wish to remove the alignment of the `\\` within a delimiter-aligned block, then the advanced form of `lookForAlignDelims` shown in Listing 29 is for you.

LISTING 29: `tabular.yaml`

```
lookForAlignDelims:
  tabular:
    delims: 1
    alignDoubleBackSlash: 0
    spacesBeforeDoubleBackSlash: 0
    multiColumnGrouping: 0
    alignRowsWithoutMaxDelims: 1
    spacesBeforeAmpersand: 1
    spacesAfterAmpersand: 1
  tabularx:
    delims: 1
  longtable: 1
```

Note that you can use a mixture of the basic and advanced form: in Listing 29 `tabular` and `tabularx` are advanced and `longtable` is basic. When using the advanced form, each field should receive at least 1 sub-field, and *can* (but does not have to) receive any of the following fields:

- `delims`: binary switch (0 or 1) equivalent to simply specifying, for example, `tabular: 1` in the basic version shown in Listing 26. If `delims` is set to 0 then the align at ampersand routine will not be called for this code block (default: 1);
- `alignDoubleBackSlash`: binary switch (0 or 1) to determine if `\\` should be aligned (default: 1);
- `spacesBeforeDoubleBackSlash`: optionally, specifies the number (integer ≥ 0) of spaces to be inserted before `\\` (default: 1).⁵
- `multiColumnGrouping`: binary switch (0 or 1) that details if `latexindent.pl` should group columns above and below a `\multicolumn` command (default: 0);
- `alignRowsWithoutMaxDelims`: binary switch (0 or 1) that details if rows that do not contain the maximum number of delimiters should be formatted so as to have the ampersands aligned (default: 1);
- `spacesBeforeAmpersand`: optionally specifies the number (integer ≥ 0) of spaces to be placed *before* ampersands (default: 1);
- `spacesAfterAmpersand`: optionally specifies the number (integer ≥ 0) of spaces to be placed *after* ampersands (default: 1);
- `justification`: optionally specifies the justification of each cell as either *left* or *right* (default: left).

We will explore each of these features using the file `tabular2.tex` in Listing 30 (which contains a `\multicolumn` command), and the YAML files in Listings 31 to 37.

⁵Previously this only activated if `alignDoubleBackSlash` was set to 0.



LISTING 30: tabular2.tex

```
\begin{tabular}{cccc}
A& B & C & & D\\
AAA& BBB & CCC & & DDD\\
\multicolumn{2}{c}{first heading} & \multicolumn{2}{c}{second heading}\\
one& two & three & & four\\
five& six & & & \\
seven & & & & \\
\end{tabular}
```

LISTING 31: tabular2.yaml

```
lookForAlignDelims:
  tabular:
    multiColumnGrouping: 1
```

LISTING 33: tabular4.yaml

```
lookForAlignDelims:
  tabular:
    spacesBeforeAmpersand: 4
```

LISTING 35: tabular6.yaml

```
lookForAlignDelims:
  tabular:
    alignDoubleBackSlash: 0
```

LISTING 37: tabular8.yaml

```
lookForAlignDelims:
  tabular:
    justification: "right"
```

LISTING 32: tabular3.yaml

```
lookForAlignDelims:
  tabular:
    alignRowsWithoutMaxDelims: 0
```

LISTING 34: tabular5.yaml

```
lookForAlignDelims:
  tabular:
    spacesAfterAmpersand: 4
```

LISTING 36: tabular7.yaml

```
lookForAlignDelims:
  tabular:
    spacesBeforeDoubleBackSlash: 0
```

On running the commands

```
cmh:~$ latexindent.pl tabular2.tex
cmh:~$ latexindent.pl tabular2.tex -l tabular2.yaml
cmh:~$ latexindent.pl tabular2.tex -l tabular3.yaml
cmh:~$ latexindent.pl tabular2.tex -l tabular2.yaml,tabular4.yaml
cmh:~$ latexindent.pl tabular2.tex -l tabular2.yaml,tabular5.yaml
cmh:~$ latexindent.pl tabular2.tex -l tabular2.yaml,tabular6.yaml
cmh:~$ latexindent.pl tabular2.tex -l tabular2.yaml,tabular7.yaml
cmh:~$ latexindent.pl tabular2.tex -l tabular2.yaml,tabular8.yaml
```

we obtain the respective outputs given in Listings 38 to 45.

LISTING 38: tabular2.tex default output

```
\begin{tabular}{cccc}
A & B & C & D & \\
AAA & BBB & CCC & DDD & \\
\multicolumn{2}{c}{first heading} & \multicolumn{2}{c}{second heading} & \\
one & two & three & four & \\
five & & six & & \\
seven & & & & \\
\end{tabular}
```



LISTING 39: tabular2.tex using Listing 31

```

\begin{tabular}{cccc}
A      & B      & & & \\
AAA    & BBB    & & & \\
\multicolumn{2}{c}{first heading} & & \multicolumn{2}{c}{second heading} \\
one    & two    & & three & four \\
five   &        & & six   & \\
seven  &        & & & \\
\end{tabular}

```

LISTING 40: tabular2.tex using Listing 32

```

\begin{tabular}{cccc}
A      & B      & C      & D      & \\
AAA    & BBB    & CCC    & DDD    & \\
\multicolumn{2}{c}{first heading} & & \multicolumn{2}{c}{second heading} \\
one    & two    & three  & four   & \\
five   &        & six    &        & \\
seven  &        &        &        & \\
\end{tabular}

```

LISTING 41: tabular2.tex using Listings 31 and 33

```

\begin{tabular}{cccc}
A      & B      & & & \\
AAA    & BBB    & & & \\
\multicolumn{2}{c}{first heading} & & \multicolumn{2}{c}{second heading} \\
one    & two    & & three & four \\
five   &        & & six   & \\
seven  &        & & & \\
\end{tabular}

```

LISTING 42: tabular2.tex using Listings 31 and 34

```

\begin{tabular}{cccc}
A      & B      & & & \\
AAA    & BBB    & & & \\
\multicolumn{2}{c}{first heading} & & \multicolumn{2}{c}{second heading} \\
one    & two    & & three & four \\
five   &        & & six   & \\
seven  &        & & & \\
\end{tabular}

```

LISTING 43: tabular2.tex using Listings 31 and 35

```

\begin{tabular}{cccc}
A      & B      & & & \\
AAA    & BBB    & & & \\
\multicolumn{2}{c}{first heading} & & \multicolumn{2}{c}{second heading} \\
one    & two    & & three & four \\
five   &        & & six   & \\
seven  &        & & & \\
\end{tabular}

```



LISTING 44: tabular2.tex using Listings 31 and 36

```

\begin{tabular}{cccc}
A      & B      & & & & & \\
AAA    & BBB    & & & & & \\
\multicolumn{2}{c}{first heading} & & \multicolumn{2}{c}{second heading} & & \\
one    & two    & & three & four  & & \\
five   &        & & six   &       & & \\
seven  &        & &       &       & & \\
\end{tabular}

```

LISTING 45: tabular2.tex using Listings 31 and 37

```

\begin{tabular}{cccc}
      A & B &      C & D \\
      AAA & BBB &      CCC & DDD \\
\multicolumn{2}{c}{first heading} & \multicolumn{2}{c}{second heading} \\
      one & two &      three & four \\
      five &     &      six &     \\
      seven &     &         &     \\
\end{tabular}

```

Notice in particular:

- in both Listings 38 and 39 all rows have been aligned at the ampersand, even those that do not contain the maximum number of ampersands (3 ampersands, in this case);
- in Listing 38 the columns have been aligned at the ampersand;
- in Listing 39 the `\multicolumn` command has grouped the 2 columns beneath *and* above it, because `multiColumnGrouping` is set to 1 in Listing 31;
- in Listing 40 rows 3 and 6 have *not* been aligned at the ampersand, because `alignRowsWithoutMaxDelims` has been set to 0 in Listing 32; however, the `\\` have still been aligned;
- in Listing 41 the columns beneath and above the `\multicolumn` commands have been grouped (because `multiColumnGrouping` is set to 1), and there are at least 4 spaces *before* each aligned ampersand because `spacesBeforeAmpersand` is set to 4;
- in Listing 42 the columns beneath and above the `\multicolumn` commands have been grouped (because `multiColumnGrouping` is set to 1), and there are at least 4 spaces *after* each aligned ampersand because `spacesAfterAmpersand` is set to 4;
- in Listing 43 the `\\` have *not* been aligned, because `alignDoubleBackSlash` is set to 0, otherwise the output is the same as Listing 39;
- in Listing 44 the `\\` have been aligned, and because `spacesBeforeDoubleBackSlash` is set to 0, there are no spaces ahead of them; the output is otherwise the same as Listing 39.
- in Listing 45 the cells have been *right*-justified; note that cells above and below the `\multicol` statements have still been group correctly, because of the settings in Listing 31.

As of Version 3.0, the alignment routine works on mandatory and optional arguments within commands, and also within ‘special’ code blocks (see `specialBeginEnd` on page 26); for example, assuming that you have a command called `\matrix` and that it is populated within `lookForAlignDelims` (which it is, by default), and that you run the command

```
cmh:~$ latexindent.pl matrix1.tex
```

then the before-and-after results shown in Listings 46 and 47 are achievable by default.



LISTING 46: matrix1.tex

```
\matrix [
  1&2 &3
4&5&6]{
7&8 &9
10&11&12
}
```

LISTING 47: matrix1.tex default output

```
\matrix [
  1 & 2 & 3
  4 & 5 & 6]{
  7 & 8 & 9
  10 & 11 & 12
}
```

If you have blocks of code that you wish to align at the & character that are *not* wrapped in, for example, `\begin{tabular} ... \end{tabular}`, then you can use the mark up illustrated in Listing 48; the default output is shown in Listing 49. Note that the `%*` must be next to each other, but that there can be any number of spaces (possibly none) between the `*` and `\begin{tabular}`; note also that you may use any environment name that you have specified in `lookForAlignDelims`.

LISTING 48: align-block.tex

```
%* \begin{tabular}
  1 & 2 & 3 & 4 \\
  5 & & 6 & \\
%* \end{tabular}
```

LISTING 49: align-block.tex default output

```
%* \begin{tabular}
  1 & 2 & 3 & 4 \\
  5 & & 6 & \\
%* \end{tabular}
```

With reference to Table 2 on page 31 and the, yet undiscussed, fields of `noAdditionalIndent` and `indentRules` (see Section 5.2 on page 30), these comment-marked blocks are considered environments.

`indentAfterItems:` *<fields>*

The environment names specified in `indentAfterItems` tell `latexindent.pl` to look for `\item` commands; if these switches are set to 1 then indentation will be performed so as indent the code after each item. A demonstration is given in Listings 51 and 52

LISTING 51: items1.tex

```
\begin{itemize}
\item some text here
some more text here
some more text here
\item another item
some more text here
\end{itemize}
```

LISTING 50: indentAfterItems

```
183 indentAfterItems:
184   itemize: 1
185   enumerate: 1
186   description: 1
187
```

LISTING 52: items1.tex default output

```
\begin{itemize}
  \item some text here
    some more text here
    some more text here
  \item another item
    some more text here
\end{itemize}
```

`itemNames:` *<fields>*

If you have your own item commands (perhaps you prefer to use `myitem`, for example) then you can put populate them in `itemNames`. For example, users of the exam document class might like to add parts to `indentAfterItems` and part to `itemNames` to their user settings (see Section 4 on page 15 for details of how to configure user settings, and Listing 13 on page 16 in particular.)

LISTING 53: itemNames

```
193 itemNames:
194   item: 1
195   myitem: 1
```

`specialBeginEnd:` *<fields>*



U: 2017-08-21

The fields specified in `specialBeginEnd` are, in their default state, focused on math mode begin and end statements, but there is no requirement for this to be the case; Listing 54 shows the default settings of `specialBeginEnd`.

LISTING 54: `specialBeginEnd`

```

199 specialBeginEnd:
200   displayMath:
201     begin: '\\\['
202     end: '\\\]'
203     lookForThis: 1
204   inlineMath:
205     begin: '(?<!\$)(?<!\$)\$(?!\$)'
206     end: '(?<!\$)\$(?!\$)'
207     lookForThis: 1
208   displayMathTeX:
209     begin: '\$ \$'
210     end: '\$ \$'
211     lookForThis: 1
212   specialBeforeCommand: 0

```

The field `displayMath` represents `\[...]`, `inlineMath` represents `...$` and `displayMathTeX` represents `$$...$$`. You can, of course, rename these in your own YAML files (see Section 4.2 on page 16); indeed, you might like to set up your own special begin and end statements.

A demonstration of the before-and-after results are shown in Listings 55 and 56.

LISTING 55: `special1.tex` before

```

The function  $f$  has formula
\[
f(x)=x^2.
\]
If you like splitting dollars,
$
g(x)=f(2x)
$

```

LISTING 56: `special1.tex` default output

```

The function  $f$  has formula
\[
f(x)=x^2.
\]
If you like splitting dollars,
$
g(x)=f(2x)
$

```

For each field, `lookForThis` is set to 1 by default, which means that `latexindent.pl` will look for this pattern; you can tell `latexindent.pl` not to look for the pattern, by setting `lookForThis` to 0.

N: 2017-08-21

There are examples in which it is advantageous to search for `specialBeginEnd` fields *before* searching for commands, and the `specialBeforeCommand` switch controls this behaviour. For example, consider the file shown in Listing 57.

LISTING 57: `specialLR.tex`

```

\begin{equation}
\left[
\sqrt{
a+b
}
\right]
\end{equation}

```

Now consider the YAML files shown in Listings 58 and 59



LISTING 58:
specialsLeftRight.yaml

```
specialBeginEnd:
  leftRightSquare:
    begin: '\\left\[
    end: '\\right\]'
    lookForThis: 1
```

LISTING 59:
specialBeforeCommand.yaml

```
specialBeginEnd:
  specialBeforeCommand: 1
```

Upon running the following commands

```
cmh:~$ latexindent.pl specialLR.tex -l=specialsLeftRight.yaml
cmh:~$ latexindent.pl specialLR.tex -l=specialsLeftRight.yaml,specialBeforeCommand.yaml
```

we receive the respective outputs in Listings 60 and 61.

LISTING 60: specialLR.tex using
Listing 58

```
\begin{equation}
  \left[
    \sqrt{
      a+b
    }
  \right]
\end{equation}
```

LISTING 61: specialLR.tex using
Listings 58 and 59

```
\begin{equation}
  \left[
    \sqrt{
      a+b
    }
  \right]
\end{equation}
```

Notice that in:

- Listing 60 the `\left` has been treated as a *command*, with one optional argument;
- Listing 61 the `specialBeginEnd` pattern in Listing 58 has been obeyed because Listing 59 specifies that the `specialBeginEnd` should be sought *before* commands.

`indentAfterHeadings: {fields}`

This field enables the user to specify indentation rules that take effect after heading commands such as `\part`, `\chapter`, `\section`, `\subsection*`, or indeed any user-specified command written in this field.⁶

The default settings do *not* place indentation after a heading, but you can easily switch them on by changing `indentAfterThisHeading: 0` to `indentAfterThisHeading: 1`. The `level` field tells `latexindent.pl` the hierarchy of the heading structure in your document. You might, for example, like to have both section and subsection set with `level: 3` because you do not want the indentation to go too deep.

You can add any of your own custom heading commands to this field, specifying the `level` as appropriate. You can also specify your own indentation in `indentRules` (see Section 5.2 on page 30);

⁶There is a slight difference in interface for this field when comparing Version 2.2 to Version 3.0; see appendix D on page 84 for details.

LISTING 62: indentAfterHeadings

```
indentAfterHeadings:
  part:
    indentAfterThisHeading: 0
    level: 1
  chapter:
    indentAfterThisHeading: 0
    level: 2
  section:
    indentAfterThisHeading: 0
    level: 3
```



you will find the default indentRules contains chapter: " " which tells latexindent.pl simply to use a space character after headings (once indent is set to 1 for chapter).

For example, assuming that you have the code in Listing 63 saved into headings1.yaml, and that you have the text from Listing 64 saved into headings1.tex.

LISTING 63: headings1.yaml

```
indentAfterHeadings:
  subsection:
    indentAfterThisHeading: 1
    level: 1
  paragraph:
    indentAfterThisHeading: 1
    level: 2
```

LISTING 64: headings1.tex

```
\subsection{subsection title}
subsection text
subsection text
\paragraph{paragraph title}
paragraph text
paragraph text
\paragraph{paragraph title}
paragraph text
paragraph text
```

If you run the command

```
cmh:~$ latexindent.pl headings1.tex -l=headings1.yaml
```

then you should receive the output given in Listing 65.

LISTING 65: headings1.tex using Listing 63

```
\subsection{subsection title}
  \subsection text
  \subsection text
  \paragraph{paragraph title}
  \paragraph text
  \paragraph text
  \paragraph{paragraph title}
  \paragraph text
  \paragraph text
```

LISTING 66: headings1.tex second modification

```
\subsection{subsection title}
  \subsection text
  \subsection text
  \paragraph{paragraph title}
  \paragraph text
  \paragraph text
  \paragraph{paragraph title}
  \paragraph text
  \paragraph text
```

Now say that you modify the YAML from Listing 63 so that the paragraph level is 1; after running

```
cmh:~$ latexindent.pl headings1.tex -l=headings1.yaml
```

you should receive the code given in Listing 66; notice that the paragraph and subsection are at the same indentation level.

`maximumIndentation:` *(horizontal space)*

N: 2017-08-21

You can control the maximum indentation given to your file by specifying the `maximumIndentation` field as horizontal space (but *not* including tabs). This feature uses the `Text::Tabs` module [14], and is *off* by default.

For example, consider the example shown in Listing 67 together with the default output shown in Listing 68.



LISTING 67: mult-nested.tex

```

\begin{one}
one
\begin{two}
two
\begin{three}
three
\begin{four}
four
\end{four}
\end{three}
\end{two}
\end{one}

```

LISTING 68: mult-nested.tex default output

```

\begin{one}
  one
  \begin{two}
    two
    \begin{three}
      three
      \begin{four}
        four
      \end{four}
    \end{three}
  \end{two}
\end{one}

```

Now say that, for example, you have the `max-indentation1.yaml` from Listing 69 and that you run the following command:

```
cmh:~$ latexindent.pl mult-nested.tex -l=max-indentation1
```

You should receive the output shown in Listing 70.

LISTING 69: max-indentation1.yaml

```
maximumIndentation: " "
```

LISTING 70: mult-nested.tex using Listing 69

```

\begin{one}
 one
 \begin{two}
  two
  \begin{three}
   three
   \begin{four}
    four
    \end{four}
  \end{three}
 \end{two}
\end{one}

```

Comparing the output in Listings 68 and 70 we notice that the (default) tabs of indentation have been replaced by a single space.

In general, when using the `maximumIndentation` feature, any leading tabs will be replaced by equivalent spaces except, of course, those found in `verbatimEnvironments` (see Listing 17 on page 19) or `noIndentBlock` (see Listing 19 on page 20).

5.1 The code blocks known `latexindent.pl`

As of Version 3.0, `latexindent.pl` processes documents using code blocks; each of these are shown in Table 2.

We will refer to these code blocks in what follows.

5.2 `noAdditionalIndent` and `indentRules`

`latexindent.pl` operates on files by looking for code blocks, as detailed in Section 5.1; for each type of code block in Table 2 on the next page (which we will call a *thing*) in what follows) it searches YAML fields for information in the following order:

1. `noAdditionalIndent` for the *name* of the current *thing*;
2. `indentRules` for the *name* of the current *thing*;

TABLE 2: Code blocks known to `latexindent.pl`

Code block	characters allowed in name	example
environments	<code>a-zA-Z@*0-9_\\</code>	<code>\begin{myenv}</code> body of myenv <code>\end{myenv}</code>
optionalArguments	<i>inherits</i> name from parent (e.g. environment name)	<code>[</code> opt arg text <code>]</code>
mandatoryArguments	<i>inherits</i> name from parent (e.g. environment name)	<code>{</code> mand arg text <code>}</code>
commands	<code>+a-zA-Z@*0-9_:</code>	<code>\mycommand⟨arguments⟩</code>
keyEqualsValuesBracesBrackets	<code>a-zA-Z@*0-9_/.\\h\{\}\: \#-</code>	<code>my key/.style=⟨arguments⟩</code>
namedGroupingBracesBrackets	<code>a-zA-Z@*⟩<</code>	<code>in⟨arguments⟩</code>
UnNamedGroupingBracesBrackets	<i>No name!</i>	<code>{</code> or <code>[</code> or <code>,</code> or <code>&</code> or <code>)</code> or <code>(</code> or <code>\$</code> followed by <code>⟨arguments⟩</code>
ifElseFi	<code>@a-zA-Z</code> but must begin with either <code>\if</code> of <code>\@if</code>	<code>\ifnum...</code> <code>...</code> <code>\else</code> <code>...</code> <code>\fi</code>
items	User specified, see Listings 50 and 53 on page 26	<code>\begin{enumerate}</code> <code>\item ...</code> <code>\end{enumerate}</code>
specialBeginEnd	User specified, see Listing 54 on page 27	<code>\[</code> <code>...</code> <code>\]</code>
afterHeading	User specified, see Listing 62 on page 28	<code>\chapter{title}</code> <code>...</code> <code>\section{title}</code>
filecontents	User specified, see Listing 23 on page 20	<code>\begin{filecontents}</code> <code>...</code> <code>\end{filecontents}</code>



3. `noAdditionalIndentGlobal` for the *type* of the current *<thing>*;
4. `indentRulesGlobal` for the *type* of the current *<thing>*.

Using the above list, the first piece of information to be found will be used; failing that, the value of `defaultIndent` is used. If information is found in multiple fields, the first one according to the list above will be used; for example, if information is present in both `indentRules` and in `noAdditionalIndentGlobal`, then the information from `indentRules` takes priority.

We now present details for the different type of code blocks known to `latexindent.pl`, as detailed in Table 2 on page 31; for reference, there follows a list of the code blocks covered.

5.2.1	Environments and their arguments	32
5.2.2	Environments with items	38
5.2.3	Commands with arguments	39
5.2.4	<code>ifelsefi</code> code blocks	41
5.2.5	<code>specialBeginEnd</code> code blocks	43
5.2.6	<code>afterHeading</code> code blocks	44
5.2.7	The remaining code blocks	46
	<code>keyEqualsValuesBracesBrackets</code>	46
	<code>namedGroupingBracesBrackets</code>	46
	<code>UnNamedGroupingBracesBrackets</code>	47
	<code>filecontents</code>	47
5.2.8	Summary	47

5.2.1 Environments and their arguments

There are a few different YAML switches governing the indentation of environments; let's start with the code shown in Listing 71.

LISTING 71: `myenv.tex`

```
\begin{outer}
\begin{myenv}
  body of environment
body of environment
  body of environment
\end{myenv}
\end{outer}
```

`noAdditionalIndent: <fields>`

If we do not wish `myenv` to receive any additional indentation, we have a few choices available to us, as demonstrated in Listings 72 and 73.

LISTING 72:

`myenv-noAdd1.yaml`

```
noAdditionalIndent:
  myenv: 1
```

LISTING 73:

`myenv-noAdd2.yaml`

```
noAdditionalIndent:
  myenv:
    body: 1
```

On applying either of the following commands,



```
cmh:~$ latexindent.pl myenv.tex -l myenv-noAdd1.yaml
cmh:~$ latexindent.pl myenv.tex -l myenv-noAdd2.yaml
```

we obtain the output given in Listing 74; note in particular that the environment `myenv` has not received any *additional* indentation, but that the outer environment *has* still received indentation.

LISTING 74: `myenv.tex` output (using either Listing 72 or Listing 73)

```
\begin{outer}
  \begin{myenv}
    body of environment
    body of environment
    body of environment
  \end{myenv}
\end{outer}
```

Upon changing the YAML files to those shown in Listings 75 and 76, and running either

```
cmh:~$ latexindent.pl myenv.tex -l myenv-noAdd3.yaml
cmh:~$ latexindent.pl myenv.tex -l myenv-noAdd4.yaml
```

we obtain the output given in Listing 77.

LISTING 75: myenv-noAdd3.yaml
noAdditionalIndent: myenv: 0

LISTING 76: myenv-noAdd4.yaml
noAdditionalIndent: myenv: body: 0

LISTING 77: `myenv.tex` output (using either Listing 75 or Listing 76)

```
\begin{outer}
  \begin{myenv}
    body of environment
    body of environment
    body of environment
  \end{myenv}
\end{outer}
```

Let's now allow `myenv` to have some optional and mandatory arguments, as in Listing 78.

LISTING 78: `myenv-args.tex`

```
\begin{outer}
\begin{myenv}[%
  optional argument text
  optional argument text]%
{ mandatory argument text
mandatory argument text}
  body of environment
body of environment
  body of environment
\end{myenv}
\end{outer}
```

Upon running



```
cmh:~$ latexindent.pl -l=myenv-noAdd1.yaml myenv-args.tex
```

we obtain the output shown in Listing 79; note that the optional argument, mandatory argument and body *all* have received no additional indent. This is because, when `noAdditionalIndent` is specified in ‘scalar’ form (as in Listing 72), then *all* parts of the environment (body, optional and mandatory arguments) are assumed to want no additional indent.

LISTING 79: myenv-args.tex using Listing 72

```
\begin{outer}
  \begin{myenv}[%
    optional argument text
    optional argument text]%
    { mandatory argument text
      mandatory argument text}
    body of environment
    body of environment
    body of environment
  \end{myenv}
\end{outer}
```

We may customise `noAdditionalIndent` for optional and mandatory arguments of the `myenv` environment, as shown in, for example, Listings 80 and 81.

LISTING 80: myenv-noAdd5.yaml

```
noAdditionalIndent:
  myenv:
    body: 0
    optionalArguments: 1
    mandatoryArguments: 0
```

LISTING 81: myenv-noAdd6.yaml

```
noAdditionalIndent:
  myenv:
    body: 0
    optionalArguments: 0
    mandatoryArguments: 1
```

Upon running

```
cmh:~$ latexindent.pl myenv.tex -l myenv-noAdd5.yaml
cmh:~$ latexindent.pl myenv.tex -l myenv-noAdd6.yaml
```

we obtain the respective outputs given in Listings 82 and 83. Note that in Listing 82 the text for the *optional* argument has not received any additional indentation, and that in Listing 83 the *mandatory* argument has not received any additional indentation; in both cases, the *body* has not received any additional indentation.

LISTING 82: myenv-args.tex using Listing 80

```
\begin{outer}
  \begin{myenv}[%
    optional argument text
    optional argument text]%
    { mandatory argument text
      mandatory argument text}
    body of environment
    body of environment
    body of environment
  \end{myenv}
\end{outer}
```

LISTING 83: myenv-args.tex using Listing 81

```
\begin{outer}
  \begin{myenv}[%
    optional argument text
    optional argument text]%
    { mandatory argument text
      mandatory argument text}
    body of environment
    body of environment
    body of environment
  \end{myenv}
\end{outer}
```



```
indentRules: {fields}
```

We may also specify indentation rules for environment code blocks using the `indentRules` field; see, for example, Listings 84 and 85.

LISTING 84:
myenv-rules1.yaml

```
indentRules:
  myenv: "  "
```

LISTING 85:
myenv-rules2.yaml

```
indentRules:
  myenv:
    body: "  "
```

On applying either of the following commands,

```
cmh:~$ latexindent.pl myenv.tex -l myenv-rules1.yaml
cmh:~$ latexindent.pl myenv.tex -l myenv-rules2.yaml
```

we obtain the output given in Listing 86; note in particular that the environment `myenv` has received one tab (from the outer environment) plus three spaces from Listing 84 or 85.

LISTING 86: myenv.tex output (using either Listing 84 or Listing 85)

```
\begin{outer}
  \begin{myenv}
    \body_of_environment
    \body_of_environment
    \body_of_environment
  \end{myenv}
\end{outer}
```

If you specify a field in `indentRules` using anything other than horizontal space, it will be ignored.

Returning to the example in Listing 78 that contains optional and mandatory arguments. Upon using Listing 84 as in

```
cmh:~$ latexindent.pl myenv-args.tex -l=myenv-rules1.yaml
```

we obtain the output in Listing 87; note that the body, optional argument and mandatory argument of `myenv` have *all* received the same customised indentation.

LISTING 87: myenv-args.tex using Listing 84

```
\begin{outer}
  \begin{myenv}[%
    \optional_argument_text
    \optional_argument_text]%
    \{ \mandatory_argument_text
    \mandatory_argument_text}
    \body_of_environment
    \body_of_environment
    \body_of_environment
  \end{myenv}
\end{outer}
```

You can specify different indentation rules for the different features using, for example, Listings 88 and 89



LISTING 88: myenv-rules3.yaml

```
indentRules:
  myenv:
    body: "  "
    optionalArguments: " "
```

LISTING 89: myenv-rules4.yaml

```
indentRules:
  myenv:
    body: "  "
    mandatoryArguments: "\t\t"
```

After running

```
cmh:~$ latexindent.pl myenv-args.tex -l myenv-rules3.yaml
cmh:~$ latexindent.pl myenv-args.tex -l myenv-rules4.yaml
```

then we obtain the respective outputs given in Listings 90 and 91.

LISTING 90: myenv-args.tex using Listing 88

```
\begin{outer}
  \begin{myenv}[%
    \optionalargumenttext
    \optionalargumenttext]%
    \mandatoryargumenttext
    \mandatoryargumenttext}
  \bodyofenvironment
  \bodyofenvironment
  \bodyofenvironment
  \end{myenv}
\end{outer}
```

LISTING 91: myenv-args.tex using Listing 89

```
\begin{outer}
  \begin{myenv}[%
    \optionalargumenttext
    \optionalargumenttext]%
    \mandatoryargumenttext
    \mandatoryargumenttext}
  \bodyofenvironment
  \bodyofenvironment
  \bodyofenvironment
  \end{myenv}
\end{outer}
```

Note that in Listing 90, the optional argument has only received a single space of indentation, while the mandatory argument has received the default (tab) indentation; the environment body has received three spaces of indentation.

In Listing 91, the optional argument has received the default (tab) indentation, the mandatory argument has received two tabs of indentation, and the body has received three spaces of indentation.

```
noAdditionalIndentGlobal: <fields>
```

Assuming that your environment name is not found within neither `noAdditionalIndent` nor `indentRules`, the next place that `latexindent.pl` will look is `noAdditionalIndentGlobal`, and in particular for the *environments* key (see Listing 92). Let's say that you change the value of *environments* to 1 in Listing 92, and that you run

LISTING 92: noAdditionalIndentGlobal

```
noAdditionalIndentGlobal:
  environments: 0
```

```
cmh:~$ latexindent.pl myenv-args.tex -l env-noAdditionalGlobal.yaml
cmh:~$ latexindent.pl myenv-args.tex -l myenv-rules1.yaml,env-noAdditionalGlobal.yaml
```

The respective output from these two commands are in Listings 93 and 94; in Listing 93 notice that *both* environments receive no additional indentation but that the arguments of `myenv` still *do* receive indentation. In Listing 94 notice that the *outer* environment does not receive additional indentation, but because of the settings from `myenv-rules1.yaml` (in Listing 84 on page 35), the `myenv` environment still *does* receive indentation.



LISTING 93: myenv-args.tex using Listing 92

```

\begin{outer}
\begin{myenv}[%
  optional argument text
  optional argument text]%
{ mandatory argument text
  mandatory argument text}
body of environment
body of environment
body of environment
\end{myenv}
\end{outer}

```

LISTING 94: myenv-args.tex using Listings 84 and 92

```

\begin{outer}
\begin{myenv}[%
  optional argument text
  optional argument text]%
{ mandatory argument text
  mandatory argument text}
body of environment
body of environment
body of environment
\end{myenv}
\end{outer}

```

In fact, `noAdditionalIndentGlobal` also contains keys that control the indentation of optional and mandatory arguments; on referencing Listings 95 and 96

LISTING 95:

opt-args-no-add-glob.yaml

```

noAdditionalIndentGlobal:
  optionalArguments: 1

```

LISTING 96:

mand-args-no-add-glob.yaml

```

noAdditionalIndentGlobal:
  mandatoryArguments: 1

```

we may run the commands

```

cmh:~$ latexindent.pl myenv-args.tex -local opt-args-no-add-glob.yaml
cmh:~$ latexindent.pl myenv-args.tex -local mand-args-no-add-glob.yaml

```

which produces the respective outputs given in Listings 97 and 98. Notice that in Listing 97 the *optional* argument has not received any additional indentation, and in Listing 98 the *mandatory* argument has not received any additional indentation.

LISTING 97: myenv-args.tex using Listing 95

```

\begin{outer}
\begin{myenv}[%
  optional argument text
  optional argument text]%
{ mandatory argument text
  mandatory argument text}
body of environment
body of environment
body of environment
\end{myenv}
\end{outer}

```

LISTING 98: myenv-args.tex using Listing 96

```

\begin{outer}
\begin{myenv}[%
  optional argument text
  optional argument text]%
{ mandatory argument text
  mandatory argument text}
body of environment
body of environment
body of environment
\end{myenv}
\end{outer}

```

`indentRulesGlobal: {fields}`

The final check that `latexindent.pl` will make is to look for `indentRulesGlobal` as detailed in Listing 99; if you change the `environments` field to anything involving horizontal space, say " ", and then run the following commands

LISTING 99:

indentRulesGlobal

```

indentRulesGlobal:
  environments: 0

```

```

cmh:~$ latexindent.pl myenv-args.tex -l env-indentRules.yaml
cmh:~$ latexindent.pl myenv-args.tex -l myenv-rules1.yaml,env-indentRules.yaml

```



then the respective output is shown in Listings 100 and 101. Note that in Listing 100, both the environment blocks have received a single-space indentation, whereas in Listing 101 the outer environment has received single-space indentation (specified by `indentRulesGlobal`), but `myenv` has received " " , as specified by the particular `indentRules` for `myenv` Listing 84 on page 35.

LISTING 100: myenv-args.tex using Listing 99

```
\begin{outer}
\begin{myenv}[%
    optional_argument_text
    optional_argument_text]%
{mandatory_argument_text
    mandatory_argument_text}
body_of_environment
body_of_environment
body_of_environment
\end{myenv}
\end{outer}
```

LISTING 101: myenv-args.tex using Listings 84 and 99

```
\begin{outer}
  \begin{myenv}[%
    optional_argument_text
    optional_argument_text]%
    {mandatory_argument_text
    mandatory_argument_text}
    body_of_environment
    body_of_environment
    body_of_environment
  \end{myenv}
\end{outer}
```

You can specify `indentRulesGlobal` for both optional and mandatory arguments, as detailed in Listings 102 and 103

LISTING 102:
opt-args-indent-rules-glob.yaml

```
indentRulesGlobal:
  optionalArguments: "\t\t"
```

LISTING 103:
mand-args-indent-rules-glob.yaml

```
indentRulesGlobal:
  mandatoryArguments: "\t\t"
```

Upon running the following commands

```
cmh:~$ latexindent.pl myenv-args.tex -local opt-args-indent-rules-glob.yaml
cmh:~$ latexindent.pl myenv-args.tex -local mand-args-indent-rules-glob.yaml
```

we obtain the respective outputs in Listings 104 and 105. Note that the *optional* argument in Listing 104 has received two tabs worth of indentation, while the *mandatory* argument has done so in Listing 105.

LISTING 104: `myenv-args.tex` using Listing 102

```
\begin{outer}
  \begin{myenv}[%
    optional argument text
    optional argument text]%
    { mandatory argument text
    mandatory argument text}
    body of environment
    body of environment
    body of environment
  \end{myenv}
\end{outer}
```

LISTING 105: `myenv-args.tex` using Listing 103

```
\begin{outer}
  \begin{myenv}[%
    optional argument text
    optional argument text]%
    { mandatory argument text
      mandatory argument text}
    body of environment
    body of environment
    body of environment
  \end{myenv}
\end{outer}
```

5.2.2 Environments with items

With reference to Listings 50 and 53 on page 26, some commands may contain item commands; for the purposes of this discussion, we will use the code from Listing 51 on page 26.

Assuming that you've populated `itemNames` with the name of your item, you can put the item name into `noAdditionalIndent` as in Listing 106, although a more efficient approach may be to change the relevant field in `itemNames` to 0. Similarly, you can customise the indentation that your item receives using `indentRules`, as in Listing 107



LISTING 106: item-noAdd1.yaml

```
noAdditionalIndent:
  item: 1
# itemNames:
#   item: 0
```

LISTING 107: item-rules1.yaml

```
indentRules:
  item: " "
```

Upon running the following commands

```
cmh:~$ latexindent.pl items1.tex -local item-noAdd1.yaml
cmh:~$ latexindent.pl items1.tex -local item-rules1.yaml
```

the respective outputs are given in Listings 108 and 109; note that in Listing 108 that the text after each item has not received any additional indentation, and in Listing 109, the text after each item has received a single space of indentation, specified by Listing 107.

LISTING 108: items1.tex using Listing 106

```
\begin{itemize}
  \item some text here
    some more text here
    some more text here
  \item another item
    some more text here
\end{itemize}
```

LISTING 109: items1.tex using Listing 107

```
\begin{itemize}
  \item some text here
    \some more text here
    \some more text here
  \item another item
    \some more text here
\end{itemize}
```

Alternatively, you might like to populate `noAdditionalIndentGlobal` or `indentRulesGlobal` using the `items` key, as demonstrated in Listings 110 and 111. Note that there is a need to ‘reset/remove’ the `item` field from `indentRules` in both cases (see the hierarchy description given on page 30) as the `item` command is a member of `indentRules` by default.

LISTING 110:

items-noAdditionalGlobal.yaml

```
indentRules:
  item: 0
noAdditionalIndentGlobal:
  items: 1
```

LISTING 111:

items-indentRulesGlobal.yaml

```
indentRules:
  item: 0
indentRulesGlobal:
  items: " "
```

Upon running the following commands,

```
cmh:~$ latexindent.pl items1.tex -local items-noAdditionalGlobal.yaml
cmh:~$ latexindent.pl items1.tex -local items-indentRulesGlobal.yaml
```

the respective outputs from Listings 108 and 109 are obtained; note, however, that *all* such `item` commands without their own individual `noAdditionalIndent` or `indentRules` settings would behave as in these listings.

5.2.3 Commands with arguments

Let’s begin with the simple example in Listing 112; when `latexindent.pl` operates on this file, the default output is shown in Listing 113.⁷

⁷The command code blocks have quite a few subtleties, described in Section 5.3 on page 47.



LISTING 112: mycommand.tex

```
\mycommand
{
  mand arg text
  mand arg text}
[
  opt arg text
  opt arg text
]
```

LISTING 113: mycommand.tex default output

```
\mycommand
{
  mand arg text
  mand arg text}
[
  opt arg text
  opt arg text
]
```

As in the environment-based case (see Listings 72 and 73 on page 32) we may specify `noAdditionalIndent` either in ‘scalar’ form, or in ‘field’ form, as shown in Listings 114 and 115

LISTING 114:

mycommand-noAdd1.yaml

```
noAdditionalIndent:
  mycommand: 1
```

LISTING 115:

mycommand-noAdd2.yaml

```
noAdditionalIndent:
  mycommand:
    body: 1
```

After running the following commands,

```
cmh:~$ latexindent.pl mycommand.tex -l mycommand-noAdd1.yaml
cmh:~$ latexindent.pl mycommand.tex -l mycommand-noAdd2.yaml
```

we receive the respective output given in Listings 116 and 117

LISTING 116: mycommand.tex using Listing 114

```
\mycommand
{
  mand arg text
  mand arg text}
[
  opt arg text
  opt arg text
]
```

LISTING 117: mycommand.tex using Listing 115

```
\mycommand
{
  mand arg text
  mand arg text}
[
  opt arg text
  opt arg text
]
```

Note that in Listing 116 that the ‘body’, optional argument *and* mandatory argument have *all* received no additional indentation, while in Listing 117, only the ‘body’ has not received any additional indentation. We define the ‘body’ of a command as any lines following the command name that include its optional or mandatory arguments.

We may further customise `noAdditionalIndent` for `mycommand` as we did in Listings 80 and 81 on page 34; explicit examples are given in Listings 118 and 119.

LISTING 118:

mycommand-noAdd3.yaml

```
noAdditionalIndent:
  mycommand:
    body: 0
    optionalArguments: 1
    mandatoryArguments: 0
```

LISTING 119:

mycommand-noAdd4.yaml

```
noAdditionalIndent:
  mycommand:
    body: 0
    optionalArguments: 0
    mandatoryArguments: 1
```

After running the following commands,



```
cmh:~$ latexindent.pl mycommand.tex -l mycommand-noAdd3.yaml
cmh:~$ latexindent.pl mycommand.tex -l mycommand-noAdd4.yaml
```

we receive the respective output given in Listings 120 and 121.

LISTING 120: mycommand.tex using Listing 118

```
\mycommand
{
    mand arg text
    mand arg text}
[
opt arg text
opt arg text
]
```

LISTING 121: mycommand.tex using Listing 119

```
\mycommand
{
    mand arg text
    mand arg text}
[
    opt arg text
    opt arg text
]
```

Attentive readers will note that the body of mycommand in both Listings 120 and 121 has received no additional indent, even though body is explicitly set to 0 in both Listings 118 and 119. This is because, by default, noAdditionalIndentGlobal for commands is set to 1 by default; this can be easily fixed as in Listings 122 and 123.

LISTING 122:
mycommand-noAdd5.yaml

```
noAdditionalIndent:
  mycommand:
    body: 0
    optionalArguments: 1
    mandatoryArguments: 0
noAdditionalIndentGlobal:
  commands: 0
```

LISTING 123:
mycommand-noAdd6.yaml

```
noAdditionalIndent:
  mycommand:
    body: 0
    optionalArguments: 0
    mandatoryArguments: 1
noAdditionalIndentGlobal:
  commands: 0
```

After running the following commands,

```
cmh:~$ latexindent.pl mycommand.tex -l mycommand-noAdd5.yaml
cmh:~$ latexindent.pl mycommand.tex -l mycommand-noAdd6.yaml
```

we receive the respective output given in Listings 124 and 125.

LISTING 124: mycommand.tex using Listing 122

```
\mycommand
{
    mand arg text
    mand arg text}
[
opt arg text
opt arg text
]
```

LISTING 125: mycommand.tex using Listing 123

```
\mycommand
{
    mand arg text
    mand arg text}
[
    opt arg text
    opt arg text
]
```

Both indentRules and indentRulesGlobal can be adjusted as they were for *environment* code blocks, as in Listings 88 and 89 on page 36 and Listings 99, 102 and 103 on page 37 and on page 38.

5.2.4 ifelsefi code blocks

Let's use the simple example shown in Listing 126; when latexindent.pl operates on this file, the output as in Listing 127; note that the body of each of the `\if` statements have been indented, and that the `\else` statement has been accounted for correctly.



LISTING 126: ifelsefi1.tex	LISTING 127: ifelsefi1.tex default output
<pre> \ifodd\radius \ifnum\radius<14 \pgfmathparse{100-(\radius)*4}; \else \pgfmathparse{200-(\radius)*3}; \fi\fi </pre>	<pre> \ifodd\radius \ifnum\radius<14 \pgfmathparse{100-(\radius)*4}; \else \pgfmathparse{200-(\radius)*3}; \fi\fi </pre>

It is recommended to specify `noAdditionalIndent` and `indentRules` in the ‘scalar’ form only for these type of code blocks, although the ‘field’ form would work, assuming that body was specified. Examples are shown in Listings 128 and 129.

LISTING 128: ifnum-noAdd.yaml	LISTING 129: ifnum-indent-rules.yaml
<pre> noAdditionalIndent: ifnum: 1 </pre>	<pre> indentRules: ifnum: " " </pre>

After running the following commands,

```

cmh:~$ latexindent.pl ifelsefi1.tex -local ifnum-noAdd.yaml
cmh:~$ latexindent.pl ifelsefi1.tex -l ifnum-indent-rules.yaml

```

we receive the respective output given in Listings 130 and 131; note that in Listing 130, the `ifnum` code block has not received any additional indentation, while in Listing 131, the `ifnum` code block has received one tab and two spaces of indentation.

LISTING 130: ifelsefi1.tex using Listing 128	LISTING 131: ifelsefi1.tex using Listing 129
<pre> \ifodd\radius \ifnum\radius<14 \pgfmathparse{100-(\radius)*4}; \else \pgfmathparse{200-(\radius)*3}; \fi\fi </pre>	<pre> \ifodd\radius \ifnum\radius<14 \pgfmathparse{100-(\radius)*4}; \else \pgfmathparse{200-(\radius)*3}; \fi\fi </pre>

We may specify `noAdditionalIndentGlobal` and `indentRulesGlobal` as in Listings 132 and 133.

LISTING 132: ifelsefi-noAdd-glob.yaml	LISTING 133: ifelsefi-indent-rules-global.yaml
<pre> noAdditionalIndentGlobal: ifElseFi: 1 </pre>	<pre> indentRulesGlobal: ifElseFi: " " </pre>

Upon running the following commands

```

cmh:~$ latexindent.pl ifelsefi1.tex -local ifelsefi-noAdd-glob.yaml
cmh:~$ latexindent.pl ifelsefi1.tex -l ifelsefi-indent-rules-global.yaml

```

we receive the outputs in Listings 134 and 135; notice that in Listing 134 neither of the `ifelsefi` code blocks have received indentation, while in Listing 135 both code blocks have received a single space of indentation.



LISTING 134: `ifelsefi1.tex` using Listing 132

```
\ifodd\radius
\ifnum\radius<14
\pgfmathparse{100-(\radius)*4};
\else
\pgfmathparse{200-(\radius)*3};
\fi\fi
```

LISTING 135: `ifelsefi1.tex` using Listing 133

```
\ifodd\radius
\ifnum\radius<14
\pgfmathparse{100-(\radius)*4};
\else
\pgfmathparse{200-(\radius)*3};
\fi\fi
```

5.2.5 `specialBeginEnd` code blocks

Let's use the example from Listing 55 on page 27 which has default output shown in Listing 56 on page 27.

It is recommended to specify `noAdditionalIndent` and `indentRules` in the 'scalar' form for these type of code blocks, although the 'field' form would work, assuming that body was specified. Examples are shown in Listings 136 and 137.

LISTING 136:
`displayMath-noAdd.yaml`

```
noAdditionalIndent:
  displayMath: 1
```

LISTING 137:
`displayMath-indent-rules.yaml`

```
indentRules:
  displayMath: "\t\t\t"
```

After running the following commands,

```
cmh:~$ latexindent.pl special1.tex -local displayMath-noAdd.yaml
cmh:~$ latexindent.pl special1.tex -l displayMath-indent-rules.yaml
```

we receive the respective output given in Listings 138 and 139; note that in Listing 138, the `displayMath` code block has *not* received any additional indentation, while in Listing 139, the `displayMath` code block has received three tabs worth of indentation.

LISTING 138: `special1.tex` using Listing 136

```
The function  $f$  has formula
\[
f(x)=x^2.
\]
If you like splitting dollars,
$
    g(x)=f(2x)
$
```

LISTING 139: `special1.tex` using Listing 137

```
The function  $f$  has formula
\[
    \qquad \qquad f(x)=x^2.
\]
If you like splitting dollars,
$
    g(x)=f(2x)
$
```

We may specify `noAdditionalIndentGlobal` and `indentRulesGlobal` as in Listings 140 and 141.

LISTING 140:
`special-noAdd-glob.yaml`

```
noAdditionalIndentGlobal:
  specialBeginEnd: 1
```

LISTING 141:
`special-indent-rules-global.yaml`

```
indentRulesGlobal:
  specialBeginEnd: " "
```

Upon running the following commands

```
cmh:~$ latexindent.pl special1.tex -local special-noAdd-glob.yaml
cmh:~$ latexindent.pl special1.tex -l special-indent-rules-global.yaml
```

we receive the outputs in Listings 142 and 143; notice that in Listing 142 neither of the `special` code blocks have received indentation, while in Listing 143 both code blocks have received a single



space of indentation.

LISTING 142: special1.tex using Listing 140

```
The function  $f$  has formula
\[
f(x)=x^2.
\]
If you like splitting dollars,
$
g(x)=f(2x)
$
```

LISTING 143: special1.tex using Listing 141

```
The function  $f$  has formula
\[
f(x)=x^2.
\]
If you like splitting dollars,
$
g(x)=f(2x)
$
```

5.2.6 afterHeading code blocks

Let's use the example Listing 144 for demonstration throughout this Section. As discussed on page 29, by default `latexindent.pl` will not add indentation after headings.

LISTING 144: headings2.tex

```
\paragraph{paragraph
title}
paragraph text
paragraph text
```

On using the YAML file in Listing 146 by running the command

```
cmh:~$ latexindent.pl headings2.tex -l headings3.yaml
```

we obtain the output in Listing 145. Note that the argument of `paragraph` has received (default) indentation, and that the body after the heading statement has received (default) indentation.

LISTING 145: headings2.tex using Listing 146

```
\paragraph{paragraph
           title}
      paragraph text
      paragraph text
```

LISTING 146: headings3.yaml

```
indentAfterHeadings:
  paragraph:
    indentAfterThisHeading: 1
    level: 1
```

If we specify `noAdditionalIndent` as in Listing 148 and run the command

```
cmh:~$ latexindent.pl headings2.tex -l headings4.yaml
```

then we receive the output in Listing 147. Note that the arguments *and* the body after the heading of `paragraph` has received no additional indentation, because we have specified `noAdditionalIndent` in scalar form.

LISTING 147: headings2.tex using Listing 148

```
\paragraph{paragraph
title}
paragraph text
paragraph text
```

LISTING 148: headings4.yaml

```
indentAfterHeadings:
  paragraph:
    indentAfterThisHeading: 1
    level: 1
noAdditionalIndent:
  paragraph: 1
```

Similarly, if we specify `indentRules` as in Listing 150 and run analogous commands to those above, we receive the output in Listing 149; note that the *body*, *mandatory argument* and content *after the heading* of `paragraph` have *all* received three tabs worth of indentation.



LISTING 149: headings2.tex using Listing 150

```
\paragraph{paragraph
  ¶   ¶   ¶   ¶   ¶   ¶   ¶   ¶   ¶   ¶title}
  ¶   ¶   ¶paragraph text
  ¶   ¶   ¶paragraph text
```

LISTING 150: headings5.yaml

```
indentAfterHeadings:
  paragraph:
    indentAfterThisHeading: 1
    level: 1
indentRules:
  paragraph: "\t\t\t"
```

We may, instead, specify `noAdditionalIndent` in ‘field’ form, as in Listing 152 which gives the output in Listing 151.

LISTING 151: headings2.tex using Listing 152

```
\paragraph{paragraph
  title}
paragraph text
paragraph text
```

LISTING 152: headings6.yaml

```
indentAfterHeadings:
  paragraph:
    indentAfterThisHeading: 1
    level: 1
noAdditionalIndent:
  paragraph:
    body: 0
    mandatoryArguments: 0
    afterHeading: 1
```

Analogously, we may specify `indentRules` as in Listing 154 which gives the output in Listing 153; note that mandatory argument text has only received a single space of indentation, while the body after the heading has received three tabs worth of indentation.

LISTING 153: headings2.tex using Listing 154

```
\paragraph{paragraph
  ¶   ¶   ¶ title}
  ¶   ¶   ¶paragraph text
  ¶   ¶   ¶paragraph text
```

LISTING 154: headings7.yaml

```
indentAfterHeadings:
  paragraph:
    indentAfterThisHeading: 1
    level: 1
indentRules:
  paragraph:
    mandatoryArguments: " "
    afterHeading: "\t\t\t"
```

Finally, let’s consider `noAdditionalIndentGlobal` and `indentRulesGlobal` shown in Listings 156 and 158 respectively, with respective output in Listings 155 and 157. Note that in Listing 156 the *mandatory argument* of `paragraph` has received a (default) tab’s worth of indentation, while the body after the heading has received *no additional indentation*. Similarly, in Listing 157, the *argument* has received both a (default) tab plus two spaces of indentation (from the global rule specified in Listing 158), and the remaining body after `paragraph` has received just two spaces of indentation.

LISTING 155: headings2.tex using Listing 156

```
\paragraph{paragraph
  title}
paragraph text
paragraph text
```

LISTING 156: headings8.yaml

```
indentAfterHeadings:
  paragraph:
    indentAfterThisHeading: 1
    level: 1
noAdditionalIndentGlobal:
  afterHeading: 1
```

LISTING 157: headings2.tex using Listing 158

```
\paragraph{paragraph
  ¶¶¶title}
¶¶¶paragraph¶text
¶¶¶paragraph¶text
```

LISTING 158: headings9.yaml

```
indentAfterHeadings:
  paragraph:
    indentAfterThisHeading: 1
    level: 1
indentRulesGlobal:
  afterHeading: " "
```



5.2.7 The remaining code blocks

Referencing the different types of code blocks in Table 2 on page 31, we have a few code blocks yet to cover; these are very similar to the `commands` code block type covered comprehensively in Section 5.2.3 on page 39, but a small discussion defining these remaining code blocks is necessary.

`keyEqualsValuesBracesBrackets` `latexindent.pl` defines this type of code block by the following criteria:

- it must immediately follow either `{` OR `[` OR `,` with comments and blank lines allowed;
- then it has a name made up of the characters detailed in Table 2 on page 31;
- then an `=` symbol;
- then at least one set of curly braces or square brackets (comments and line breaks allowed throughout).

An example is shown in Listing 159, with the default output given in Listing 160.

LISTING 159: `pgfkeys1.tex`

```
\pgfkeys{/tikz/.cd,
start coordinate/.initial={0,
\vertfactor},
}
```

LISTING 160: `pgfkeys1.tex` default output

```
\pgfkeys{/tikz/.cd,
    \start coordinate/.initial={0,
    \    \    \vertfactor},
}
```

In Listing 160, note that the maximum indentation is three tabs, and these come from:

- the `\pgfkeys` command's mandatory argument;
- the `start coordinate/.initial` key's mandatory argument;
- the `start coordinate/.initial` key's body, which is defined as any lines following the name of the key that include its arguments. This is the part controlled by the `body` field for `noAdditionalIndent` and friends from page 30.

`namedGroupingBracesBrackets` This type of code block is mostly motivated by `tikz`-based code; we define this code block as follows:

- it must immediately follow either *horizontal space* OR *one or more line breaks* OR `{` OR `[` OR `$` OR `)` OR `(`;
- the name may contain the characters detailed in Table 2 on page 31;
- then at least one set of curly braces or square brackets (comments and line breaks allowed throughout).

A simple example is given in Listing 161, with default output in Listing 162.

LISTING 161: `child1.tex`

```
\coordinate
child[grow=down]{
edge from parent [antiparticle]
node [above=3pt] {$C$}
}
```

LISTING 162: `child1.tex` default output

```
\coordinate
child[grow=down]{
    \edge from parent [antiparticle]
    \node [above=3pt] {$C$}
}
```

In particular, `latexindent.pl` considers `child`, `parent` and `node` all to be `namedGroupingBracesBrackets`⁸. Referencing Listing 162, note that the maximum indentation is two tabs, and these come from:

- the `child`'s mandatory argument;
- the `child`'s body, which is defined as any lines following the name of the `namedGroupingBracesBrackets` that include its arguments. This is the part controlled by the `body` field for `noAdditionalIndent` and friends from page 30.

⁸ You may like to verify this by using the `-tt` option and checking `indent.log`!



UnNamedGroupingBracesBrackets occur in a variety of situations; specifically, we define this type of code block as satisfying the following criteria:

- it must immediately follow either { OR [OR , OR & OR) OR (OR \$;
- then at least one set of curly braces or square brackets (comments and line breaks allowed throughout).

An example is shown in Listing 163 with default output give in Listing 164.

LISTING 163: psforeach1.tex	LISTING 164: psforeach1.tex default output
<pre> \psforeach{\row}{% { {3,2.8,2.7,3,3.1}},% {2.8,1,1.2,2,3},% } </pre>	<pre> \psforeach{\row}{% { {3,2.8,2.7,3,3.1}},% {2.8,1,1.2,2,3},% } </pre>

Referencing Listing 164, there are *three* sets of unnamed braces. Note also that the maximum value of indentation is three tabs, and these come from:

- the `\psforeach` command's mandatory argument;
- the *first* un-named braces mandatory argument;
- the *first* un-named braces *body*, which we define as any lines following the first opening { or [that defined the code block. This is the part controlled by the *body* field for `noAdditionalIndent` and friends from page 30.

Users wishing to customise the mandatory and/or optional arguments on a *per-name* basis for the **UnNamedGroupingBracesBrackets** should use `always-un-named`.

filecontents code blocks behave just as environments, except that neither arguments nor items are sought.

5.2.8 Summary

Having considered all of the different types of code blocks, the functions of the fields given in Listings 165 and 166 should now make sense.

LISTING 165: noAdditionalIndentGlobal	LISTING 166: indentRulesGlobal
<pre> 280 noAdditionalIndentGlobal: 281 environments: 0 282 commands: 1 283 optionalArguments: 0 284 mandatoryArguments: 0 285 ifElseFi: 0 286 items: 0 287 keyEqualsValuesBracesBrackets: 0 288 namedGroupingBracesBrackets: 0 289 UnNamedGroupingBracesBrackets: 0 290 specialBeginEnd: 0 291 afterHeading: 0 292 filecontents: 0 </pre>	<pre> 296 indentRulesGlobal: 297 environments: 0 298 commands: 0 299 optionalArguments: 0 300 mandatoryArguments: 0 301 ifElseFi: 0 302 items: 0 303 keyEqualsValuesBracesBrackets: 0 304 namedGroupingBracesBrackets: 0 305 UnNamedGroupingBracesBrackets: 0 306 specialBeginEnd: 0 307 afterHeading: 0 308 filecontents: 0 </pre>

5.3 Commands and the strings between their arguments

The command code blocks will always look for optional (square bracketed) and mandatory (curly braced) arguments which can contain comments, line breaks and 'beamer' commands `<.*?>` between them. There are switches that can allow them to contain other strings, which we discuss next.



```
commandCodeBlocks: {fields}
```

U: 2017-08-21

The `commandCodeBlocks` field contains a few switches detailed in Listing 167.

LISTING 167: `commandCodeBlocks`

```
311 commandCodeBlocks:
312     roundParenthesesAllowed: 1
313     stringsAllowedBetweenArguments:
314         node: 1
315         at: 1
316         to: 1
317         decoration: 1
318         ++: 1
319         --: 1
320     commandNameSpecial:
321         @ifnextchar[: 1
```

```
roundParenthesesAllowed: 0|1
```

The need for this field was mostly motivated by commands found in code used to generate images in PSTricks and tikz; for example, let's consider the code given in Listing 168.

LISTING 168: `pstricks1.tex`

```
\defFunction[algebraic]{torus}(u,v)
{(2+cos(u))*cos(v+\Pi)}
{(2+cos(u))*sin(v+\Pi)}
{sin(u)}
```

LISTING 169: `pstricks1` default output

```
\defFunction[algebraic]{torus}(u,v)
{(2+cos(u))*cos(v+\Pi)}
{(2+cos(u))*sin(v+\Pi)}
{sin(u)}
```

Notice that the `\defFunction` command has an optional argument, followed by a mandatory argument, followed by a round-parenthesis argument, (u, v) .

By default, because `roundParenthesesAllowed` is set to 1 in Listing 167, then `latexindent.pl` will allow round parenthesis between optional and mandatory arguments. In the case of the code in Listing 168, `latexindent.pl` finds *all* the arguments of `\defFunction`, both before and after (u, v) .

The default output from running `latexindent.pl` on Listing 168 actually leaves it unchanged (see Listing 169); note in particular, this is because of `noAdditionalIndentGlobal` as discussed on page 41.

Upon using the YAML settings in Listing 171, and running the command

```
cmh:~$ latexindent.pl pstricks1.tex -l noRoundParentheses.yaml
```

we obtain the output given in Listing 170.

LISTING 170: `pstricks1.tex` using Listing 171

```
\defFunction[algebraic]{torus}(u,v)
{(2+cos(u))*cos(v+\Pi)}
    {(2+cos(u))*sin(v+\Pi)}
    {sin(u)}
```

LISTING 171:
`noRoundParentheses.yaml`

```
commandCodeBlocks:
    roundParenthesesAllowed: 0
```

Notice the difference between Listing 169 and Listing 170; in particular, in Listing 170, because round parentheses are *not* allowed, `latexindent.pl` finds that the `\defFunction` command finishes at the first opening round parenthesis. As such, the remaining braced, mandatory, arguments are found to be `UnNamedGroupingBracesBrackets` (see Table 2 on page 31) which, by default, assume indentation for their body, and hence the tabbed indentation in Listing 170.



Let's explore this using the YAML given in Listing 173 and run the command

```
cmh:~$ latexindent.pl pstricks1.tex -l defFunction.yaml
```

then the output is as in Listing 172.

LISTING 172: pstricks1.tex using Listing 173

```
\defFunction[algebraic]{torus}(u,v)
  \{(2+\cos(u))*\cos(v+\Pi)\}
  \{(2+\cos(u))*\sin(v+\Pi)\}
  \{\sin(u)\}
```

LISTING 173: defFunction.yaml

```
indentRules:
  defFunction:
    body: " "
```

Notice in Listing 172 that the *body* of the `defFunction` command i.e, the subsequent lines containing arguments after the command name, have received the single space of indentation specified by Listing 173.

`stringsAllowedBetweenArguments: {fields}`

`tikz` users may well specify code such as that given in Listing 174; processing this code using `latexindent.pl` gives the default output in Listing 175.

LISTING 174: tikz-node1.tex

```
\draw[thin]
(c)\to[in=110,out=-90]
++(0,-0.5cm)
node[below,align=left,scale=0.5]
```

LISTING 175: tikz-node1 default output

```
\draw[thin]
(c)\to[in=110,out=-90]
++(0,-0.5cm)
node[below,align=left,scale=0.5]
```

With reference to Listing 167 on page 48, we see that the strings

to, node, ++

are all allowed to appear between arguments, as they are each set to 1; importantly, you are encouraged to add further names to this field as necessary. This means that when `latexindent.pl` processes Listing 174, it consumes:

- the optional argument `[thin]`
- the round-bracketed argument `(c)` because `roundParenthesesAllowed` is 1 by default
- the string `to` (specified in `stringsAllowedBetweenArguments`)
- the optional argument `[in=110,out=-90]`
- the string `++` (specified in `stringsAllowedBetweenArguments`)
- the round-bracketed argument `(0,-0.5cm)` because `roundParenthesesAllowed` is 1 by default
- the string `node` (specified in `stringsAllowedBetweenArguments`)
- the optional argument `[below,align=left,scale=0.5]`

We can explore this further, for example using Listing 177 and running the command

```
cmh:~$ latexindent.pl tikz-node1.tex -l draw.yaml
```

we receive the output given in Listing 176.



LISTING 176: tikz-node1.tex using Listing 177

```
\draw[thin]
  \c to[in=110,out=-90]
  \c ++(0,-0.5cm)
  \c node[below,align=left,scale=0.5]
```

LISTING 177: draw.yaml

```
indentRules:
  draw:
    body: " "
```

Notice that each line after the `\draw` command (its ‘body’) in Listing 176 has been given the appropriate two-spaces worth of indentation specified in Listing 177.

Let’s compare this with the output from using the YAML settings in Listing 179, and running the command

```
cmh:~$ latexindent.pl tikz-node1.tex -l no-to.yaml
```

given in Listing 178.

LISTING 178: tikz-node1.tex using Listing 179

```
\draw[thin]
(c) to[in=110,out=-90]
++(0,-0.5cm)
node[below,align=left,scale=0.5]
```

LISTING 179: no-to.yaml

```
commandCodeBlocks:
  stringsAllowedBetweenArguments:
    to: 0
```

In this case, `latexindent.pl` sees that:

- the `\draw` command finishes after the `(c)` as (`stringsAllowedBetweenArguments` has to set to 0)
- it finds a `namedGroupingBracesBrackets` called `to` (see Table 2 on page 31) with argument `[in=110,out=-90]`
- it finds another `namedGroupingBracesBrackets` but this time called `node` with argument `[below,align=left,scale=0.5]`

`commandNameSpecial: {fields}`

N: 2017-08-21

There are some special command names that do not fit within the names recognized by `latexindent.pl`, the first one of which is `\@ifnextchar[`. From the perspective of `latexindent.pl`, the whole of the text `\@ifnextchar[` is a command, because it is immediately followed by sets of mandatory arguments. However, without the `commandNameSpecial` field, `latexindent.pl` would not be able to label it as such, because the `[` is, necessarily, not matched by a closing `]`.

For example, consider the sample file in Listing 180, which has default output in Listing 181.

LISTING 180: ifnextchar.tex

```
\parbox{
\@ifnextchar[{arg 1}{arg 2}
}
```

LISTING 181: ifnextchar.tex default output

```
\parbox{
  \@ifnextchar[{arg 1}{arg 2}
}
```

Notice that in Listing 181 the `parbox` command has been able to indent its body, because `latexindent.pl` has successfully found the command `\@ifnextchar` first; the pattern-matching of `latexindent.pl` starts from the inner most <thing> and works outwards, discussed in more detail on page 78. For demonstration, we can compare this output with that given in Listing 182 in which the settings from Listing 183 have dictated that `\@ifnextchar[` command should not be searched for specially; as such, the `parbox` command has been unable to indent its body successfully, because the `\@ifnextchar[` command has not been found.



LISTING 182: ifnextchar.tex using Listing 183

```
\parbox{
\@ifnextchar[{arg 1}]{arg 2}
}
```

LISTING 183: no-ifnextchar.yaml

```
commandCodeBlocks:
  commandNameSpecial:
    @ifnextchar[: 0
```

6 The -m (modifylinebreaks) switch

All features described in this section will only be relevant if the -m switch is used.

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`modifylinebreaks: {fields}`

As of Version 3.0, latexindent.pl has the -m switch, which permits latexindent.pl to modify line breaks, according to the specifications in the modifyLineBreaks field. *The settings in this field will only be considered if the -m switch has been used.* A snippet of the default settings of this field is shown in Listing 184.

LISTING 184: modifyLineBreaks

```
modifyLineBreaks:
  preserveBlankLines: 1
  condenseMultipleBlankLinesInto: 1
```

Having read the previous paragraph, it should sound reasonable that, if you call latexindent.pl using the -m switch, then you give it permission to modify line breaks in your file, but let's be clear:



If you call latexindent.pl with the -m switch, then you are giving it permission to modify line breaks. By default, the only thing that will happen is that multiple blank lines will be condensed into one blank line; many other settings are possible, discussed next.



`preserveBlankLines: 0|1`

This field is directly related to *poly-switches*, discussed below. By default, it is set to 1, which means that blank lines will be protected from removal; however, regardless of this setting, multiple blank lines can be condensed if `condenseMultipleBlankLinesInto` is greater than 0, discussed next.

`condenseMultipleBlankLinesInto: <integer ≥ 0>`

Assuming that this switch takes an integer value greater than 0, `latexindent.pl` will condense multiple blank lines into the number of blank lines illustrated by this switch. As an example, Listing 185 shows a sample file with blank lines; upon running

```
cmh:~$ latexindent.pl myfile.tex -m
```

the output is shown in Listing 186; note that the multiple blank lines have been condensed into one blank line, and note also that we have used the `-m` switch!

LISTING 185: `mlb1.tex`

before blank line

after blank line

after blank line

LISTING 186: `mlb1.tex` out output

before blank line

after blank line

after blank line

`textWrapOptions: <fields>`

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When the `-m` switch is active `latexindent.pl` has the ability to wrap text using the options specified in the `textWrapOptions` field, see Listing 187. The value of `columns` specifies the column at which the text should be wrapped. By default, the value of `columns` is 0, so `latexindent.pl` will *not* wrap text; if you change it to a value of 2 or more, then text will be wrapped after the character in the specified column.

LISTING 187: `textWrapOptions`

```
394 textWrapOptions:
395     columns: 0
```

`-m`

For example, consider the file give in Listing 188.

LISTING 188: `textwrap1.tex`

Here is a line of text that will be wrapped by `latexindent.pl`. Each line is quite long.

Here is a line of text that will be wrapped by `latexindent.pl`. Each line is quite long.

Using the file `textwrap1.yaml` in Listing 190, and running the command

```
cmh:~$ latexindent.pl -m textwrap1.tex -o textwrap1-mod1.tex -l textwrap1.yaml
```

we obtain the output in Listing 189.



LISTING 189: textwrap1-mod1.tex

Here is a line of
text that will be
wrapped by
latexindent.pl.
Each line is quite
long.

Here is a line of
text that will be
wrapped by
latexindent.pl.
Each line is quite
long.

LISTING 190: textwrap1.yaml

-m

```
modifyLineBreaks:
  textWrapOptions:
    columns: 20
```

The text wrapping routine is performed *after* verbatim environments have been stored, so verbatim environments and verbatim commands are exempt from the routine. For example, using the file in Listing 191,

LISTING 191: textwrap2.tex

Here is a line of text that will be wrapped by latexindent.pl. Each line is quite long.

```
\begin{verbatim}
  a long line in a verbatim environment, which will not be broken by latexindent.pl
\end{verbatim}
```

Here is a verb command: `\verb!`this will not be text wrapped!

and running the following command and continuing to use textwrap1.yaml from Listing 190,

```
cmh:~$ latexindent.pl -m textwrap2.tex -o textwrap2-mod1.tex -l textwrap1.yaml
```

then the output is as in Listing 192.

LISTING 192: textwrap2-mod1.tex

Here is a line of
text that will be
wrapped by
latexindent.pl.
Each line is quite
long.

```
\begin{verbatim}
  a long line in a verbatim environment, which will not be broken by latexindent.pl
\end{verbatim}
```

Here is a verb
command:
`\verb!`this will not be text wrapped!

Furthermore, the text wrapping routine is performed after the trailing comments have been stored, and they are also exempt from text wrapping. For example, using the file in Listing 193

LISTING 193: textwrap3.tex

Here is a line of text that will be wrapped by latexindent.pl. Each line is quite long.

Here is a line % text wrapping does not apply to comments by latexindent.pl



and running the following command and continuing to use `textwrap1.yaml` from Listing 190,

```
cmh:~$ latexindent.pl -m textwrap3.tex -o textwrap3-mod1.tex -l textwrap1.yaml
```

then the output is as in Listing 194.

LISTING 194: `textwrap3-mod1.tex`

```
Here is a line of
text that will be
wrapped by
latexindent.pl.
Each line is quite
long.
```

```
Here is a line
% text wrapping does not apply to comments by latexindent.pl
```

The text wrapping routine of `latexindent.pl` is performed by the `Text::Wrap` module, which provides a separator feature to separate lines with characters other than a new line (see [15]). By default, the separator is empty (see Listing 195) which means that a new line token will be used, but you can change it as you see fit.

LISTING 195: `textWrapOptions`

```
textWrapOptions:
  columns: 0
  separator: ""
```

For example starting with the file in Listing 196

LISTING 196: `textwrap4.tex`

```
Here is a line of text.
```

and using `textwrap2.yaml` from Listing 198 with the following command

```
cmh:~$ latexindent.pl -m textwrap4.tex -o textwrap4-mod2.tex -l textwrap2.yaml
```

then we obtain the output in Listing 197.

LISTING 197: `textwrap4-mod2.tex`

```
Here||is a||line||of||text||.
```

LISTING 198: `textwrap2.yaml`

```
modifyLineBreaks:
  textWrapOptions:
    columns: 5
    separator: "||"
```

Summary of text wrapping It is important to note the following:

- Verbatim environments (Listing 17 on page 19) and verbatim commands (Listing 18 on page 19) will *not* be affected by the text wrapping routine (see Listing 192 on page 53);
- comments will *not* be affected by the text wrapping routine (see Listing 194);
- indentation is performed *after* the text wrapping routine; as such, indented code will likely exceed any maximum value set in the `columns` field.

6.1 oneSentencePerLine: modifying line breaks for sentences

You can instruct `latexindent.pl` to format your file so that it puts one sentence per line. Thank you to [10] for helping to shape and test this feature. The behaviour of this part of the script is controlled by the switches detailed in Listing 199, all of which we discuss next.



LISTING 199: oneSentencePerLine

```

397   oneSentencePerLine:
398     manipulateSentences: 0
399     removeSentenceLineBreaks: 1
400     sentencesFollow:
401       par: 1
402       blankLine: 1
403       fullStop: 1
404       exclamationMark: 1
405       questionMark: 1
406       rightBrace: 1
407       commentOnPreviousLine: 1
408       other: 0
409     sentencesBeginWith:
410       A-Z: 1
411       a-z: 0
412       other: 0
413     sentencesEndWith:
414       basicFullStop: 0
415       betterFullStop: 1
416       exclamationMark: 1
417       questionMark: 1
418       other: 0

```

`manipulateSentences: 0|1`

This is a binary switch that details if `latexindent.pl` should perform the sentence manipulation routine; it is *off* (set to 0) by default, and you will need to turn it on (by setting it to 1) if you want the script to modify line breaks surrounding and within sentences.

`removeSentenceLineBreaks: 0|1`

When operating upon sentences `latexindent.pl` will, by default, remove internal linebreaks as `removeSentenceLineBreaks` is set to 1. Setting this switch to 0 instructs `latexindent.pl` not to do so.

For example, consider `multiple-sentences.tex` shown in Listing 200.

LISTING 200: multiple-sentences.tex

```

This is the first
sentence. This is the; second, sentence. This is the
third sentence.

```

```

This is the fourth
sentence! This is the fifth sentence? This is the
sixth sentence.

```

If we use the YAML files in Listings 202 and 204, and run the commands

```

cmh:~$ latexindent.pl multiple-sentences -m -l=manipulate-sentences.yaml
cmh:~$ latexindent.pl multiple-sentences -m -l=keep-sen-line-breaks.yaml

```

then we obtain the respective output given in Listings 201 and 203.



LISTING 201: multiple-sentences.tex
using Listing 202

This is the first sentence.
This is the; second, sentence.
This is the third sentence.

This is the fourth sentence!
This is the fifth sentence?
This is the sixth sentence.

LISTING 203: multiple-sentences.tex
using Listing 204

This is the first
sentence.
This is the; second, sentence.
This is the
third sentence.

This is the fourth
sentence!
This is the fifth sentence?
This is the
sixth sentence.

LISTING 202:
manipulate-sentences.yaml

```
modifyLineBreaks:
  oneSentencePerLine:
    manipulateSentences: 1
```

LISTING 204:
keep-sen-line-breaks.yaml

```
modifyLineBreaks:
  oneSentencePerLine:
    manipulateSentences: 1
    removeSentenceLineBreaks: 0
```

Notice, in particular, that the ‘internal’ sentence line breaks in Listing 200 have been removed in Listing 201, but have not been removed in Listing 203.

The remainder of the settings displayed in Listing 199 on page 55 instruct `latexindent.pl` on how to define a sentence. From the perspective of `latexindent.pl` a sentence must:

- *follow* a certain character or set of characters (see Listing 205); by default, this is either `\par`, a blank line, a full stop/period (`.`), exclamation mark (`!`), question mark (`?`) right brace (`}`) or a comment on the previous line;
- *begin* with a character type (see Listing 206); by default, this is only capital letters;
- *end* with a character (see Listing 207); by default, these are full stop/period (`.`), exclamation mark (`!`) and question mark (`?`).

In each case, you can specify the other field to include any pattern that you would like; you can specify anything in this field using the language of regular expressions.

LISTING 205: sentencesFollow

```
sentencesFollow:
  par: 1
  blankLine: 1
  fullStop: 1
  exclamationMark: 1
  questionMark: 1
  rightBrace: 1
  commentOnPreviousLine: 1
  other: 0
```

LISTING 206:
sentencesBeginWith

```
sentencesBeginWith:
  A-Z: 1
  a-z: 0
  other: 0
```

LISTING 207: sentencesEndWith

```
sentencesEndWith:
  basicFullStop: 0
  betterFullStop: 1
  exclamationMark: 1
  questionMark: 1
  other: 0
```

6.1.1 sentencesFollow

Let’s explore a few of the switches in `sentencesFollow`; let’s start with Listing 200 on page 55, and use the YAML settings given in Listing 209. Using the command

```
cmh:~$ latexindent.pl multiple-sentences -m -l=sentences-follow1.yaml
```

we obtain the output given in Listing 208.



LISTING 208: multiple-sentences.tex
using Listing 209

```
This is the first sentence.
This is the; second, sentence.
This is the third sentence.

This is the fourth
sentence!
This is the fifth sentence?
This is the sixth sentence.
```

LISTING 209:
sentences-follow1.yaml

```
modifyLineBreaks:
  oneSentencePerLine:
    manipulateSentences: 1
    sentencesFollow:
      blankLine: 0
```

Notice that, because `blankLine` is set to 0, `latexindent.pl` will not seek sentences following a blank line, and so the fourth sentence has not been accounted for.

We can explore the other field in Listing 205 with the .tex file detailed in Listing 210.

LISTING 210: multiple-sentences1.tex

```
(Some sentences stand alone in brackets.) This is the first
sentence. This is the; second, sentence. This is the
third sentence.
```

Upon running the following commands

```
cmh:~$ latexindent.pl multiple-sentences1 -m -l=manipulate-sentences.yaml
cmh:~$ latexindent.pl multiple-sentences1 -m -l=manipulate-sentences.yaml,sentences-follow2.yaml
```

then we obtain the respective output given in Listings 211 and 212.

LISTING 211: multiple-sentences1.tex using Listing 202 on page 56

```
(Some sentences stand alone in brackets.) This is the first
sentence.
This is the; second, sentence.
This is the third sentence.
```

LISTING 212: multiple-sentences1.tex using
Listing 213

```
(Some sentences stand alone in brackets.)
This is the first sentence.
This is the; second, sentence.
This is the third sentence.
```

LISTING 213:
sentences-follow2.yaml

```
modifyLineBreaks:
  oneSentencePerLine:
    manipulateSentences: 1
    sentencesFollow:
      other: "\")"
```

Notice that in Listing 211 the first sentence after the `)` has not been accounted for, but that following the inclusion of Listing 213, the output given in Listing 212 demonstrates that the sentence *has* been accounted for correctly.

6.1.2 sentencesBeginWith

By default, `latexindent.pl` will only assume that sentences begin with the upper case letters A-Z; you can instruct the script to define sentences to begin with lower case letters (see Listing 206), and we can use the other field to define sentences to begin with other characters.



LISTING 214: multiple-sentences2.tex

```
This is the first
sentence.

$a$ can
represent a
number. 7 is
at the beginning of this sentence.
```

Upon running the following commands

```
cmh:~$ latexindent.pl multiple-sentences2 -m -l=manipulate-sentences.yaml
cmh:~$ latexindent.pl multiple-sentences2 -m -l=manipulate-sentences.yaml,sentences-begin1.yaml
```

then we obtain the respective output given in Listings 215 and 216.

LISTING 215: multiple-sentences2.tex using Listing 202 on page 56

```
This is the first sentence.

$a$ can
represent a
number. 7 is
at the beginning of this sentence.
```

LISTING 216: multiple-sentences2.tex using Listing 217

```
This is the first sentence.

$a$ can represent a number.
7 is at the beginning of this sentence.
```

LISTING 217: sentences-begin1.yaml

```
modifyLineBreaks:
  oneSentencePerLine:
    manipulateSentences: 1
    sentencesBeginWith:
      other: "\$|[0-9]"
```

Notice that in Listing 215, the first sentence has been accounted for but that the subsequent sentences have not. In Listing 216, all of the sentences have been accounted for, because the other field in Listing 217 has defined sentences to begin with either \$ or any numeric digit, 0 to 9.

6.1.3 sentencesEndWith

Let's return to Listing 200 on page 55; we have already seen the default way in which `latexindent.pl` will operate on the sentences in this file in Listing 201 on page 56. We can populate the other field with any character that we wish; for example, using the YAML specified in Listing 219 and the command

```
cmh:~$ latexindent.pl multiple-sentences -m -l=sentences-end1.yaml
cmh:~$ latexindent.pl multiple-sentences -m -l=sentences-end2.yaml
```

then we obtain the output in Listing 218.

LISTING 218: multiple-sentences.tex using Listing 219

```
This is the first sentence.
This is the;
second, sentence.
This is the third sentence.

This is the fourth sentence!
This is the fifth sentence?
This is the sixth sentence.
```

LISTING 219: sentences-end1.yaml

```
modifyLineBreaks:
  oneSentencePerLine:
    manipulateSentences: 1
    sentencesEndWith:
      other: "\:|\;|\\,"
```



LISTING 220: multiple-sentences.tex
using Listing 221

This is the first sentence.
This is the;
second,
sentence.
This is the third sentence.

This is the fourth sentence!
This is the fifth sentence?
This is the sixth sentence.

LISTING 221: sentences-end2.yaml

```
modifyLineBreaks:
  oneSentencePerLine:
    manipulateSentences: 1
    sentencesEndWith:
      other: "\;|\;|\;,"
    sentencesBeginWith:
      a-z: 1
```

There is a subtle difference between the output in Listings 218 and 220; in particular, in Listing 218 the word sentence has not been defined as a sentence, because we have not instructed `latexindent.pl` to begin sentences with lower case letters. We have changed this by using the settings in Listing 221, and the associated output in Listing 220 reflects this.

Referencing Listing 207 on page 56, you'll notice that there is a field called `basicFullStop`, which is set to 0, and that the `betterFullStop` is set to 1 by default.

Let's consider the file shown in Listing 222.

LISTING 222: url.tex

This sentence, `\url{tex.stackexchange.com/}` finishes here. Second sentence.

Upon running the following commands

```
cmh:~$ latexindent.pl url -m -l=manipulate-sentences.yaml
```

we obtain the output given in Listing 223.

LISTING 223: url.tex using Listing 202 on page 56

This sentence, `\url{tex.stackexchange.com/}` finishes here.
Second sentence.

Notice that the full stop within the url has been interpreted correctly. This is because, within the `betterFullStop`, full stops at the end of sentences have the following properties:

- they are ignored within e.g. and i.e.;
- they can not be immediately followed by a lower case or upper case letter;
- they can not be immediately followed by a hyphen, comma, or number.

If you find that the `betterFullStop` does not work for your purposes, then you can switch it off by setting it to 0, and you can experiment with the other field.

The `basicFullStop` routine should probably be avoided in most situations, as it does not accommodate the specifications above. For example, using the YAML in Listing 225 gives the output from the following command in Listing 224.

```
cmh:~$ latexindent.pl url -m -l=alt-full-stop1.yaml
```

LISTING 224: url.tex using Listing 225

This sentence, `\url{tex.stackexchange.com/}` finishes here. Second sentence.

LISTING 225: alt-full-stop1.yaml

```
modifyLineBreaks:
  oneSentencePerLine:
    manipulateSentences: 1
    sentencesEndWith:
      basicFullStop: 1
      betterFullStop: 0
```



Notice that the full stop within the URL has not been accommodated correctly because of the non-default settings in Listing 225.

6.1.4 Features of the oneSentencePerLine routine

The sentence manipulation routine takes place *after* verbatim environments, preamble and trailing comments have been accounted for; this means that any characters within these types of code blocks will not be part of the sentence manipulation routine.

For example, if we begin with the .tex file in Listing 226, and run the command

```
cmh:~$ latexindent.pl multiple-sentences3 -m -l=manipulate-sentences.yaml
```

then we obtain the output in Listing 227.

LISTING 226: multiple-sentences3.tex

```
The first sentence continues after the verbatim
\begin{verbatim}
  there are sentences within this. These
  will not be operated
  upon by latexindent.pl.
\end{verbatim}
and finishes here. Second sentence % a commented full stop.
contains trailing comments,
which are ignored.
```

LISTING 227: multiple-sentences3.tex using Listing 202 on page 56

```
The first sentence continues after the verbatim \begin{verbatim}
  there are sentences within this. These
  will not be operated
  upon by latexindent.pl.
\end{verbatim} and finishes here.
Second sentence contains trailing comments, which are ignored.
% a commented full stop.
```

Furthermore, if sentences run across environments then, by default, the line breaks internal to the sentence will be removed. For example, if we use the .tex file in Listing 228 and run the commands

```
cmh:~$ latexindent.pl multiple-sentences4 -m -l=manipulate-sentences.yaml
cmh:~$ latexindent.pl multiple-sentences4 -m -l=keep-sen-line-breaks.yaml
```

then we obtain the output in Listings 229 and 230.

LISTING 228: multiple-sentences4.tex

```
This sentence
\begin{itemize}
  \item continues
\end{itemize}
across itemize
and finishes here.
```

LISTING 229: multiple-sentences4.tex using Listing 202 on page 56

```
This sentence \begin{itemize} \item continues \end{itemize} across itemize and finishes here.
```



LISTING 230: multiple-sentences4.tex using Listing 204 on page 56

```
This sentence
\begin{itemize}
  \item continues
\end{itemize}
across itemize
and finishes here.
```

Once you've read Section 6.3, you will know that you can accommodate the removal of internal sentence line breaks by using the YAML in Listing 232 and the command

```
cmh:~$ latexindent.pl multiple-sentences4 -m -l=item-rules2.yaml
```

the output of which is shown in Listing 231.

LISTING 231: multiple-sentences4.tex using Listing 232

```
This sentence
\begin{itemize}
  \item continues
\end{itemize}
across itemize and finishes here.
```

LISTING 232: item-rules2.yaml

```
modifyLineBreaks:
  oneSentencePerLine:
    manipulateSentences: 1
  items:
    ItemStartsOnOwnLine: 1
  environments:
    BeginStartsOnOwnLine: 1
    BodyStartsOnOwnLine: 1
    EndStartsOnOwnLine: 1
    EndFinishesWithLineBreak: 1
```

6.2 removeParagraphLineBreaks: modifying line breaks for paragraphs

N: 2017-05-27

When the -m switch is active `latexindent.pl` has the ability to remove line breaks from within paragraphs; the behaviour is controlled by the `removeParagraphLineBreaks` field, detailed in Listing 233. Thank you to [11] for shaping and assisting with the testing of this feature.

```
removeParagraphLineBreaks: {fields}
```

This feature is considered complimentary to the `oneSentencePerLine` feature described in Section 6.1 on page 54.

LISTING 233: removeParagraphLineBreaks

```
419 removeParagraphLineBreaks:
420   all: 0
421   alignAtAmpersandTakesPriority: 1
422   environments:
423     quotation: 0
424     ifElseFi: 0
425     optionalArguments: 0
426     mandatoryArguments: 0
427     items: 0
428     specialBeginEnd: 0
429     afterHeading: 0
430     filecontents: 0
431     masterDocument: 0
```

This routine can be turned on *globally* for *every* code block type known to `latexindent.pl` (see Table 2 on page 31) by using the `all` switch; by default, this switch is *off*. Assuming that the `all` switch is off, then the routine can be controlled on a per-code-block-type basis, and within that, on a per-name basis. We will consider examples of each of these in turn, but before we do, let's specify what `latexindent.pl` considers as a paragraph:



- it must begin on its own line with either an alphabetic or numeric character, and not with any of the code-block types detailed in Table 2 on page 31;
- it can include line breaks, but finishes when it meets either a blank line, a `\par` command, or any of the user-specified settings in the `paragraphsStopAt` field, detailed in Listing 250 on page 66.

Let's start with the `.tex` file in Listing 234, together with the YAML settings in Listing 235.

LISTING 234: `shortlines.tex`

```
\begin{myenv}
The_lines
in_this
environment
are_very
short
and_contain
many_linebreaks.
```

```
Another
paragraph.
\end{myenv}
```

LISTING 235: `remove-para1.yaml`

```
modifyLineBreaks:
  removeParagraphLineBreaks:
    all: 1
```

Upon running the command

```
cmh:~$ latexindent.pl -m shortlines.tex -o shortlines1.tex -l remove-para1.yaml
```

then we obtain the output given in Listing 236.

LISTING 236: `shortlines1.tex`

```
\begin{myenv}
  The_lines_in_this_environment_are_very_short_and_contain_many_linebreaks.

  Another_paragraph.
\end{myenv}
```

Keen readers may notice that some trailing white space must be present in the file in Listing 234 which has crept in to the output in Listing 236. This can be fixed using the YAML file in Listing 297 on page 72 and running, for example,

```
cmh:~$ latexindent.pl -m shortlines.tex -o shortlines1-tws.tex -l
  remove-para1.yaml,removeTWS-before.yaml
```

in which case the output is as in Listing 237; notice that the double spaces present in Listing 236 have been addressed.

LISTING 237: `shortlines1-tws.tex`

```
\begin{myenv}
  The_lines_in_this_environment_are_very_short_and_contain_many_linebreaks.

  Another_paragraph.
\end{myenv}
```

Keeping with the settings in Listing 235, we note that the `all` switch applies to *all* code block types. So, for example, let's consider the files in Listings 238 and 239



LISTING 238: shortlines-mand.tex

```
\mycommand{
The lines
in this
command
are very
short
and contain
many linebreaks.

Another
paragraph.
}
```

LISTING 239: shortlines-opt.tex

```
\mycommand[
The lines
in this
command
are very
short
and contain
many linebreaks.

Another
paragraph.
]
```

Upon running the commands

```
cmh:~$ latexindent.pl -m shortlines-mand.tex -o shortlines-mand1.tex -l remove-para1.yaml
cmh:~$ latexindent.pl -m shortlines-opt.tex -o shortlines-opt1.tex -l remove-para1.yaml
```

then we obtain the respective output given in Listings 240 and 241.

LISTING 240: shortlines-mand1.tex

```
\mycommand{
The lines in this  command are very  short and contain many linebreaks.

Another  paragraph.
}
```

LISTING 241: shortlines-opt1.tex

```
\mycommand[
The lines in this  command are very  short and contain many linebreaks.

Another  paragraph.
]
```

Assuming that we turn *off* the all switch (by setting it to 0), then we can control the behaviour of `removeParagraphLineBreaks` either on a per-code-block-type basis, or on a per-name basis.

For example, let's use the code in Listing 242, and consider the settings in Listings 243 and 244; note that in Listing 243 we specify that *every* environment should receive treatment from the routine, while in Listing 244 we specify that *only* the one environment should receive the treatment.



LISTING 242: shortlines-envs.tex

```

\begin{one}
The lines
in this
environment
are very
short
and contain
many linebreaks.

Another
paragraph.
\end{one}

\begin{two}
The lines
in this
environment
are very
short
and contain
many linebreaks.

Another
paragraph.
\end{two}

```

Upon running the commands

```

cmh:~$ latexindent.pl -m shortlines-envs.tex -o shortlines-envs2.tex -l remove-para2.yaml
cmh:~$ latexindent.pl -m shortlines-envs.tex -o shortlines-envs3.tex -l remove-para3.yaml

```

then we obtain the respective output given in Listings 245 and 246.

LISTING 245: shortlines-envs2.tex

```

\begin{one}
    The lines in this  environment are very  short and contain many linebreaks.

    Another  paragraph.
\end{one}

\begin{two}
    The lines in this  environment are very  short and contain many linebreaks.

    Another  paragraph.
\end{two}

```

LISTING 243: remove-para2.yaml

-m

```

modifyLineBreaks:
  removeParagraphLineBreaks:
    environments: 1

```

LISTING 244: remove-para3.yaml

-m

```

modifyLineBreaks:
  removeParagraphLineBreaks:
    environments:
      one: 1

```



LISTING 246: shortlines-envs3.tex

```

\begin{one}
  The lines in this  environment are very  short and contain many linebreaks.

  Another  paragraph.
\end{one}

\begin{two}
  The lines
  in this
  environment
  are very
  short
  and contain
  many linebreaks.

  Another
  paragraph.
\end{two}

```

The remaining code-block types can be customized in analogous ways, although note that commands, `keyEqualsValuesBracesBrackets`, `namedGroupingBracesBrackets`, `UnNamedGroupingBracesBrackets` are controlled by the `optionalArguments` and the `mandatoryArguments`.

The only special case is the `masterDocument` field; this is designed for ‘chapter’-type files that may contain paragraphs that are not within any other code-blocks. For example, consider the file in Listing 247, with the YAML settings in Listing 248.

LISTING 247: shortlines-md.tex

```

The lines
in this
document
are very
short
and contain
many linebreaks.

Another
paragraph.

\begin{myenv}
The lines
in this
document
are very
short
and contain
many linebreaks.
\end{myenv}

```

LISTING 248: remove-para4.yaml

-m

```

modifyLineBreaks:
  removeParagraphLineBreaks:
    masterDocument: 1

```

Upon running the following command

```
cmh:~$ latexindent.pl -m shortlines-md.tex -o shortlines-md4.tex -l remove-para4.yaml
```

then we obtain the output in Listing 249.



LISTING 249: shortlines-md4.tex

The lines in this document are very short and contain many linebreaks.

Another paragraph.

```
\begin{myenv}
  The lines
  in this
  document
  are very
  short
  and contain
  many linebreaks.
\end{myenv}
```

`paragraphsStopAt: {fields}`

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The paragraph line break routine considers blank lines and the `\par` command to be the end of a paragraph; you can fine tune the behaviour of the routine further by using the `paragraphsStopAt` fields, shown in Listing 250.

LISTING 250: paragraphsStopAt

```
432 paragraphsStopAt:
433   environments: 1
434   commands: 0
435   ifElseFi: 0
436   items: 0
437   specialBeginEnd: 0
438   heading: 0
439   filecontents: 0
440   comments: 0
```

The fields specified in `paragraphsStopAt` tell `latexindent.pl` to stop the current paragraph when it reaches a line that *begins* with any of the code-block types specified as 1 in Listing 250. By default, you'll see that the paragraph line break routine will stop when it reaches an environment at the beginning of a line. It is *not* possible to specify these fields on a per-name basis.

Let's use the `.tex` file in Listing 251; we will, in turn, consider the settings in Listings 252 and 253.

LISTING 251: sl-stop.tex

```
These lines
are very
short
\emph{and} contain
many linebreaks.
\begin{myenv}
Body of myenv
\end{myenv}
```

```
Another
paragraph.
% a comment
% a comment
```

LISTING 252: stop-command.yaml

```
modifyLineBreaks:
  removeParagraphLineBreaks:
    paragraphsStopAt:
      commands: 1
```

LISTING 253: stop-comment.yaml

```
modifyLineBreaks:
  removeParagraphLineBreaks:
    paragraphsStopAt:
      comments: 1
```

Upon using the settings from Listing 248 on page 65 and running the commands



```
cmh:~$ latexindent.pl -m sl-stop.tex -o sl-stop4.tex -l remove-para4.yaml
cmh:~$ latexindent.pl -m sl-stop.tex -o sl-stop4-command.tex -l=remove-para4.yaml,stop-command.yaml
cmh:~$ latexindent.pl -m sl-stop.tex -o sl-stop4-comment.tex -l=remove-para4.yaml,stop-comment.yaml
```

we obtain the respective outputs in Listings 254 to 256; notice in particular that:

- in Listing 254 the paragraph line break routine has included commands and comments;
- in Listing 255 the paragraph line break routine has *stopped* at the `\emph` command, because in Listing 252 we have specified commands to be 1, and `\emph` is at the beginning of a line;
- in Listing 256 the paragraph line break routine has *stopped* at the comments, because in Listing 253 we have specified comments to be 1, and the comment is at the beginning of a line.

In all outputs in Listings 254 to 256 we notice that the paragraph line break routine has stopped at `\begin{myenv}` because, by default, environments is set to 1 in Listing 250 on page 66.

LISTING 254: sl-stop4.tex

```
These lines are very short \emph{and} contain many linebreaks.
\begin{myenv}
  Body of myenv
\end{myenv}

Another paragraph. % a comment% a comment
```

LISTING 255: sl-stop4-command.tex

```
These lines are very short
\emph{and} contain
many linebreaks.
\begin{myenv}
  Body of myenv
\end{myenv}

Another paragraph. % a comment% a comment
```

LISTING 256: sl-stop4-comment.tex

```
These lines are very short \emph{and} contain many linebreaks.
\begin{myenv}
  Body of myenv
\end{myenv}

Another paragraph.
% a comment
% a comment
```

6.3 Poly-switches

Every other field in the `modifyLineBreaks` field uses poly-switches, and can take one of five integer values:

- 1 *remove mode*: line breaks before or after the *<part of thing>* can be removed (assuming that `preserveBlankLines` is set to 0);
- 0 *off mode*: line breaks will not be modified for the *<part of thing>* under consideration;
- 1 *add mode*: a line break will be added before or after the *<part of thing>* under consideration, assuming that there is not already a line break before or after the *<part of thing>*;
- 2 *comment then add mode*: a comment symbol will be added, followed by a line break before or after the *<part of thing>* under consideration, assuming that there is not already a comment and line break before or after the *<part of thing>*;

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- 3 *add then blank line mode*: a line break will be added before or after the *<part of thing>* under consideration, assuming that there is not already a line break before or after the *<part of thing>*, followed by a blank line.

In the above, *<part of thing>* refers to either the *begin statement*, *body* or *end statement* of the code blocks detailed in Table 2 on page 31. All poly-switches are *off* by default; `latexindent.pl` searches first of all for per-name settings, and then followed by global per-thing settings.

6.4 modifyLineBreaks for environments

We start by viewing a snippet of `defaultSettings.yaml` in Listing 257; note that it contains *global* settings (immediately after the `environments` field) and that *per-name* settings are also allowed – in the case of Listing 257, settings for `equation*` have been specified. Note that all poly-switches are *off* by default.

LISTING 257: environments -m

```

441 environments:
442     BeginStartsOnOwnLine: 0
443     BodyStartsOnOwnLine: 0
444     EndStartsOnOwnLine: 0
445     EndFinishesWithLineBreak: 0
446 equation*:
447     BeginStartsOnOwnLine: 0
448     BodyStartsOnOwnLine: 0
449     EndStartsOnOwnLine: 0
450     EndFinishesWithLineBreak: 0

```

Let's begin with the simple example given in Listing 258; note that we have annotated key parts of the file using ♠, ♥, ♦ and ♣, these will be related to fields specified in Listing 257.

LISTING 258: env-mlb1.tex

before words ♠ `\begin{myenv}` ♥ body of myenv ♦ `\end{myenv}` ♣ after words

6.4.1 Adding line breaks using `BeginStartsOnOwnLine` and `BodyStartsOnOwnLine`

Let's explore `BeginStartsOnOwnLine` and `BodyStartsOnOwnLine` in Listings 259 and 260, and in particular, let's allow each of them in turn to take a value of 1.

LISTING 259: env-mlb1.yaml -m

```

modifyLineBreaks:
  environments:
    BeginStartsOnOwnLine: 1

```

LISTING 260: env-mlb2.yaml -m

```

modifyLineBreaks:
  environments:
    BodyStartsOnOwnLine: 1

```

After running the following commands,

```

cmh:~$ latexindent.pl -m env-mlb.tex -l env-mlb1.yaml
cmh:~$ latexindent.pl -m env-mlb.tex -l env-mlb2.yaml

```

the output is as in Listings 261 and 262 respectively.

LISTING 261: env-mlb.tex using Listing 259

before words
`\begin{myenv}` body of myenv `\end{myenv}` after words

LISTING 262: env-mlb.tex using Listing 260

before words `\begin{myenv}`
 body of myenv `\end{myenv}` after words

There are a couple of points to note:

- in Listing 261 a line break has been added at the point denoted by ♠ in Listing 258; no other line breaks have been changed;
- in Listing 262 a line break has been added at the point denoted by ♥ in Listing 258; furthermore, note that the *body* of `myenv` has received the appropriate (default) indentation.



Let's now change each of the 1 values in Listings 259 and 260 so that they are 2 and save them into env-mlb3.yaml and env-mlb4.yaml respectively (see Listings 263 and 264).

LISTING 263: env-mlb3.yaml -m

```
modifyLineBreaks:
  environments:
    BeginStartsOnOwnLine: 2
```

LISTING 264: env-mlb4.yaml -m

```
modifyLineBreaks:
  environments:
    BodyStartsOnOwnLine: 2
```

Upon running commands analogous to the above, we obtain Listings 265 and 266.

LISTING 265: env-mlb.tex using Listing 263

```
before words%
\begin{myenv}body of myenv\end{myenv} after words
```

LISTING 266: env-mlb.tex using Listing 264

```
before words \begin{myenv}%
body of myenv\end{myenv} after words
```

Note that line breaks have been added as in Listings 261 and 262, but this time a comment symbol has been added before adding the line break; in both cases, trailing horizontal space has been stripped before doing so.

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Let's now change each of the 1 values in Listings 259 and 260 so that they are 3 and save them into env-mlb5.yaml and env-mlb6.yaml respectively (see Listings 267 and 268).

LISTING 267: env-mlb5.yaml -m

```
modifyLineBreaks:
  environments:
    BeginStartsOnOwnLine: 3
```

LISTING 268: env-mlb6.yaml -m

```
modifyLineBreaks:
  environments:
    BodyStartsOnOwnLine: 3
```

Upon running commands analogous to the above, we obtain Listings 269 and 270.

LISTING 269: env-mlb.tex using Listing 267

```
before words
\begin{myenv}body of myenv\end{myenv} after words
```

LISTING 270: env-mlb.tex using Listing 268

```
before words \begin{myenv}
body of myenv\end{myenv} after words
```

Note that line breaks have been added as in Listings 261 and 262, but this time a *blank line* has been added after adding the line break.

6.4.2 Adding line breaks using EndStartsOnOwnLine and EndFinishesWithLineBreak

Let's explore EndStartsOnOwnLine and EndFinishesWithLineBreak in Listings 271 and 272, and in particular, let's allow each of them in turn to take a value of 1.

LISTING 271: env-mlb7.yaml -m

```
modifyLineBreaks:
  environments:
    EndStartsOnOwnLine: 1
```

LISTING 272: env-mlb8.yaml -m

```
modifyLineBreaks:
  environments:
    EndFinishesWithLineBreak: 1
```

After running the following commands,

```
cmh:~$ latexindent.pl -m env-mlb.tex -l env-mlb7.yaml
cmh:~$ latexindent.pl -m env-mlb.tex -l env-mlb8.yaml
```

the output is as in Listings 273 and 274.

LISTING 273: env-mlb.tex using Listing 271

```
before words \begin{myenv}body of myenv
\end{myenv} after words
```

LISTING 274: env-mlb.tex using Listing 272

```
before words \begin{myenv}body of myenv\end{myenv}
after words
```

There are a couple of points to note:



- in Listing 273 a line break has been added at the point denoted by \diamond in Listing 258 on page 68; no other line breaks have been changed and the `\end{myenv}` statement has *not* received indentation (as intended);
- in Listing 274 a line break has been added at the point denoted by \clubsuit in Listing 258 on page 68.

Let's now change each of the 1 values in Listings 271 and 272 so that they are 2 and save them into `env-mlb9.yaml` and `env-mlb10.yaml` respectively (see Listings 275 and 276).

```
LISTING 275: env-mlb9.yaml -m
modifyLineBreaks:
  environments:
    EndStartsOnOwnLine: 2
```

```
LISTING 276: env-mlb10.yaml -m
modifyLineBreaks:
  environments:
    EndFinishesWithLineBreak: 2
```

Upon running commands analogous to the above, we obtain Listings 277 and 278.

LISTING 277: env-mlb.tex using Listing 275	LISTING 278: env-mlb.tex using Listing 276
before words <code>\begin{myenv}</code> body of myenv% <code>\end{myenv}</code> after words	before words <code>\begin{myenv}</code> body of myenv <code>\end{myenv}</code> % after words

Note that line breaks have been added as in Listings 273 and 274, but this time a comment symbol has been added before adding the line break; in both cases, trailing horizontal space has been stripped before doing so.

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Let's now change each of the 1 values in Listings 271 and 272 so that they are 3 and save them into `env-mlb11.yaml` and `env-mlb12.yaml` respectively (see Listings 279 and 280).

```
LISTING 279: env-mlb11.yaml -m
modifyLineBreaks:
  environments:
    EndStartsOnOwnLine: 3
```

```
LISTING 280: env-mlb12.yaml -m
modifyLineBreaks:
  environments:
    EndFinishesWithLineBreak: 3
```

Upon running commands analogous to the above, we obtain Listings 281 and 282.

LISTING 281: env-mlb.tex using Listing 279	LISTING 282: env-mlb.tex using Listing 280
before words <code>\begin{myenv}</code> body of myenv <code>\end{myenv}</code> after words	before words <code>\begin{myenv}</code> body of myenv <code>\end{myenv}</code> after words

Note that line breaks have been added as in Listings 273 and 274, and that a *blank line* has been added after the line break.

6.4.3 poly-switches only add line breaks when necessary

If you ask `latexindent.pl` to add a line break (possibly with a comment) using a poly-switch value of 1 (or 2), it will only do so if necessary. For example, if you process the file in Listing 283 using any of the YAML files presented so far in this section, it will be left unchanged.

```
LISTING 283: env-mlb2.tex
before words
\begin{myenv}
  body of myenv
\end{myenv}
after words
```

```
LISTING 284: env-mlb3.tex
before words
\begin{myenv} %
  body of myenv%
\end{myenv}%
after words
```

In contrast, the output from processing the file in Listing 284 will vary depending on the poly-switches used; in Listing 285 you'll see that the comment symbol after the `\begin{myenv}` has been moved to the next line, as `BodyStartsOnOwnLine` is set to 1. In Listing 286 you'll see that the comment has been accounted for correctly because `BodyStartsOnOwnLine` has been set to 2, and the comment symbol has *not* been moved to its own line. You're encouraged to experiment with Listing 284 and by setting the other poly-switches considered so far to 2 in turn.



LISTING 285: env-mlb3.tex using
Listing 260 on page 68

```
before words
\begin{myenv}
  %
  body of myenv%
\end{myenv}%
after words
```

LISTING 286: env-mlb3.tex using
Listing 264 on page 69

```
before words
\begin{myenv} %
  body of myenv%
\end{myenv}%
after words
```

The details of the discussion in this section have concerned *global* poly-switches in the environments field; each switch can also be specified on a *per-name* basis, which would take priority over the global values; with reference to Listing 257 on page 68, an example is shown for the equation* environment.

6.4.4 Removing line breaks (poly-switches set to -1)

Setting poly-switches to -1 tells latexindent.pl to remove line breaks of the *<part of the thing>*, if necessary. We will consider the example code given in Listing 287, noting in particular the positions of the line break highlighters, ♠, ♥, ♦ and ♣, together with the associated YAML files in Listings 288 to 291.

LISTING 287: env-mlb4.tex

```
before words♠
\begin{myenv}♥
body of myenv♦
\end{myenv}♣
after words
```

LISTING 288: env-mlb13.yaml

```
modifyLineBreaks:
  environments:
    BeginStartsOnOwnLine: -1
```

LISTING 289: env-mlb14.yaml

```
modifyLineBreaks:
  environments:
    BodyStartsOnOwnLine: -1
```

LISTING 290: env-mlb15.yaml

```
modifyLineBreaks:
  environments:
    EndStartsOnOwnLine: -1
```

LISTING 291: env-mlb16.yaml

```
modifyLineBreaks:
  environments:
    EndFinishesWithLineBreak: -1
```

After running the commands

```
cmh:~$ latexindent.pl -m env-mlb4.tex -l env-mlb13.yaml
cmh:~$ latexindent.pl -m env-mlb4.tex -l env-mlb14.yaml
cmh:~$ latexindent.pl -m env-mlb4.tex -l env-mlb15.yaml
cmh:~$ latexindent.pl -m env-mlb4.tex -l env-mlb16.yaml
```

we obtain the respective output in Listings 292 to 295.

LISTING 292: env-mlb4.tex using
Listing 288

```
before words\begin{myenv}
  body of myenv
\end{myenv}
after words
```

LISTING 293: env-mlb4.tex using
Listing 289

```
before words
\begin{myenv}body of myenv
\end{myenv}
after words
```



LISTING 294: env-mlb4.tex using Listing 290

```
before words
\begin{myenv}
  body of myenv\end{myenv}
after words
```

LISTING 295: env-mlb4.tex using Listing 291

```
before words
\begin{myenv}
  body of myenv
\end{myenv}after words
```

Notice that in:

- Listing 292 the line break denoted by ♠ in Listing 287 has been removed;
- Listing 293 the line break denoted by ♥ in Listing 287 has been removed;
- Listing 294 the line break denoted by ♦ in Listing 287 has been removed;
- Listing 295 the line break denoted by ♣ in Listing 287 has been removed.

We examined each of these cases separately for clarity of explanation, but you can combine all of the YAML settings in Listings 288 to 291 into one file; alternatively, you could tell `latexindent.pl` to load them all by using the following command, for example

```
cmh:~$ latexindent.pl -m env-mlb4.tex -l env-mlb13.yaml,env-mlb14.yaml,env-mlb15.yaml,env-mlb16.yaml
```

which gives the output in Listing 258 on page 68.

6.4.5 About trailing horizontal space

Recall that on page 20 we discussed the YAML field `removeTrailingWhitespace`, and that it has two (binary) switches to determine if horizontal space should be removed `beforeProcessing` and `afterProcessing`. The `beforeProcessing` is particularly relevant when considering the `-m` switch; let's consider the file shown in Listing 296, which highlights trailing spaces.

LISTING 296: env-mlb5.tex

```
before_words    ♠
\begin{myenv}   ♥
body_of_myenv  ♦
\end{myenv}    ♣
after_words
```

LISTING 297:

`removeTWS-before.yaml`

```
removeTrailingWhitespace:
  beforeProcessing: 1
```

The output from the following commands

```
cmh:~$ latexindent.pl -m env-mlb5.tex -l env-mlb13.yaml,env-mlb14.yaml,env-mlb15.yaml,env-mlb16.yaml
cmh:~$ latexindent.pl -m env-mlb5.tex -l
env-mlb13.yaml,env-mlb14.yaml,env-mlb15.yaml,env-mlb16.yaml,removeTWS-before.yaml
```

is shown, respectively, in Listings 298 and 299; note that the trailing horizontal white space has been preserved (by default) in Listing 298, while in Listing 299, it has been removed using the switch specified in Listing 297.

LISTING 298: env-mlb5.tex using Listings 292 to 295

```
before_words    \begin{myenv}body_of_myenv\end{myenv}after_words
```

LISTING 299: env-mlb5.tex using Listings 292 to 295 and Listing 297

```
before_words\begin{myenv}body_of_myenv\end{myenv}after_words
```

6.4.6 poly-switch line break removal and blank lines

Now let's consider the file in Listing 300, which contains blank lines.



LISTING 300: env-mlb6.tex

before words♥

\begin{myenv}♥

body of myenv◇

\end{myenv}♣

after words

 Upon running the following commands

```
cmh:~$ latexindent.pl -m env-mlb6.tex -l env-mlb13.yaml,env-mlb14.yaml,env-mlb15.yaml,env-mlb16.yaml
cmh:~$ latexindent.pl -m env-mlb6.tex -l
env-mlb13.yaml,env-mlb14.yaml,env-mlb15.yaml,env-mlb16.yaml,UnpreserveBlankLines.yaml
```

we receive the respective outputs in Listings 302 and 303. In Listing 302 we see that the multiple blank lines have each been condensed into one blank line, but that blank lines have *not* been removed by the poly-switches – this is because, by default, `preserveBlankLines` is set to 1. By contrast, in Listing 303, we have allowed the poly-switches to remove blank lines because, in Listing 301, we have set `preserveBlankLines` to 0.

LISTING 302: env-mlb6.tex
using Listings 292 to 295

before words

\begin{myenv}

body of myenv

\end{myenv}

after words

LISTING 303: env-mlb6.tex using Listings 292 to 295 and Listing 301

 before words\begin{myenv}body of myenv\end{myenv}after words

We can explore this further using the blank-line poly-switch value of 3; let's use the file given in Listing 304.

LISTING 304: env-mlb7.tex

\begin{one} one text \end{one} \begin{two} two text \end{two}

 Upon running the following commands

```
cmh:~$ latexindent.pl -m env-mlb7.tex -l env-mlb12.yaml,env-mlb13.yaml
cmh:~$ latexindent.pl -m env-mlb7.tex -l
env-mlb13.yaml,env-mlb14.yaml,UnpreserveBlankLines.yaml
```

we receive the outputs given in Listings 305 and 306.

LISTING 305: env-mlb7-preserve.tex

\begin{one} one text \end{one}

\begin{two} two text \end{two}



LISTING 306: env-mlb7-no-preserve.tex

```
\begin{one} one text \end{one} \begin{two} two text \end{two}
```

Notice that in:

- Listing 305 that `\end{one}` has added a blank line, because of the value of `EndFinishesWithLineBreak` in Listing 280 on page 70, and even though the line break ahead of `\begin{two}` should have been removed (because of `BeginStartsOnOwnLine` in Listing 288 on page 71), the blank line has been preserved by default;
- Listing 306, by contrast, has had the additional line-break removed, because of the settings in Listing 301.

6.5 Poly-switches for other code blocks

Rather than repeat the examples shown for the environment code blocks (in Section 6.4 on page 68), we choose to detail the poly-switches for all other code blocks in Table 3; note that each and every one of these poly-switches is *off by default*, i.e., set to 0. Note also that, by design, line breaks involving `verbatim`, `filecontents` and ‘comment-marked’ code blocks (Listing 48 on page 26) can *not* be modified using `latexindent.pl`.

TABLE 3: Poly-switch mappings for all code-block types

Code block	Sample	Poly-switch mapping
environment	before words♠ <code>\begin{myenv}</code> ♥ body of myenv◇ <code>\end{myenv}</code> ♣ after words	♠ <code>BeginStartsOnOwnLine</code> ♥ <code>BodyStartsOnOwnLine</code> ◇ <code>EndStartsOnOwnLine</code> ♣ <code>EndFinishesWithLineBreak</code>
ifelsefi	before words♠ <code>\if...</code> ♥ body of if statement★ <code>\else</code> □ body of else statement◇ <code>\fi</code> ♣ after words	♠ <code>IfStartsOnOwnLine</code> ♥ <code>BodyStartsOnOwnLine</code> ★ <code>ElseStartsOnOwnLine</code> □ <code>ElseFinishesWithLineBreak</code> ◇ <code>FiStartsOnOwnLine</code> ♣ <code>FiFinishesWithLineBreak</code>
optionalArguments	...♠ <code>[</code> ♥ body of opt arg◇ <code>]</code> ♣ ...	♠ <code>LSqBStartsOnOwnLine</code> ⁹ ♥ <code>OptArgBodyStartsOnOwnLine</code> ◇ <code>RSqBStartsOnOwnLine</code> ♣ <code>RSqBFinishesWithLineBreak</code>
mandatoryArguments	...♠ <code>{</code> ♥ body of mand arg◇ <code>}</code> ♣ ...	♠ <code>LCuBStartsOnOwnLine</code> ¹⁰ ♥ <code>MandArgBodyStartsOnOwnLine</code> ◇ <code>RCuBStartsOnOwnLine</code> ♣ <code>RCuBFinishesWithLineBreak</code>

⁹LSqB stands for Left Square Bracket

¹⁰LCuB stands for Left Curly Brace



commands	before words ♠ <code>\mycommand♥</code> <code>{arguments}</code>	♠ CommandStartsOnOwnLine ♥ CommandNameFinishesWithLineBreak
namedGroupingBraces Brackets	before words ♠ <code>myname♥</code> <code>{braces/brackets}</code>	♠ NameStartsOnOwnLine ♥ NameFinishesWithLineBreak
keyEqualsValuesBraces Brackets	before words ♠ <code>key•=♥</code> <code>{braces/brackets}</code>	♠ KeyStartsOnOwnLine • EqualsStartsOnOwnLine ♥ EqualsFinishesWithLineBreak
items	before words ♠ <code>\item♥</code> ...	♠ ItemStartsOnOwnLine ♥ ItemFinishesWithLineBreak
specialBeginEnd	before words ♠ <code>\[♥</code> body of special ♦ <code>\]♣</code> after words	♠ SpecialBeginStartsOnOwnLine ♥ SpecialBodyStartsOnOwnLine ♦ SpecialEndStartsOnOwnLine ♣ SpecialEndFinishesWithLineBreak

6.6 Partnering BodyStartsOnOwnLine with argument-based poly-switches

Some poly-switches need to be partnered together; in particular, when line breaks involving the *first* argument of a code block need to be accounted for using both `BodyStartsOnOwnLine` (or its equivalent, see Table 3 on page 74) and `LCuBStartsOnOwnLine` for mandatory arguments, and `LSqBStartsOnOwnLine` for optional arguments.

Let's begin with the code in Listing 316 and the YAML settings in Listing 318; with reference to Table 3 on page 74, the key `CommandNameFinishesWithLineBreak` is an alias for `BodyStartsOnOwnLine`.

LISTING 316: `mycommand1.tex`

```
\mycommand
{
  mand arg text
  mand arg text}
{
  mand arg text
  mand arg text}
```

Upon running the command

```
cmh:~$ latexindent.pl -m -l=mycom-mlb1.yaml mycommand1.tex
```



we obtain Listing 317; note that the *second* mandatory argument beginning brace { has had its leading line break removed, but that the *first* brace has not.

LISTING 317: mycommand1.tex
using Listing 318

```
\mycommand
{
    mand arg text
    mand arg text}{
    mand arg text
    mand arg text}
```

LISTING 318: mycom-mlb1.yaml

```
modifyLineBreaks:
  commands:
    CommandNameFinishesWithLineBreak: 0
  mandatoryArguments:
    LCuBStartsOnOwnLine: -1
```

Now let's change the YAML file so that it is as in Listing 320; upon running the analogous command to that given above, we obtain Listing 319; both beginning braces { have had their leading line breaks removed.

LISTING 319: mycommand1.tex
using Listing 320

```
\mycommand{
    mand arg text
    mand arg text}{
    mand arg text
    mand arg text}
```

LISTING 320: mycom-mlb2.yaml

```
modifyLineBreaks:
  commands:
    CommandNameFinishesWithLineBreak: -1
  mandatoryArguments:
    LCuBStartsOnOwnLine: -1
```

Now let's change the YAML file so that it is as in Listing 322; upon running the analogous command to that given above, we obtain Listing 321.

LISTING 321: mycommand1.tex
using Listing 322

```
\mycommand
{
    mand arg text
    mand arg text}
{
    mand arg text
    mand arg text}
```

LISTING 322: mycom-mlb3.yaml

```
modifyLineBreaks:
  commands:
    CommandNameFinishesWithLineBreak: -1
  mandatoryArguments:
    LCuBStartsOnOwnLine: 1
```

6.7 Conflicting poly-switches: sequential code blocks

It is very easy to have conflicting poly-switches; if we use the example from Listing 316 on page 75, and consider the YAML settings given in Listing 324. The output from running

```
cmh:~$ latexindent.pl -m -l=mycom-mlb4.yaml mycommand1.tex
```

is given in Listing 323.

LISTING 323: mycommand1.tex
using Listing 324

```
\mycommand
{
    mand arg text
    mand arg text}{
    mand arg text
    mand arg text}
```

LISTING 324: mycom-mlb4.yaml

```
modifyLineBreaks:
  mandatoryArguments:
    LCuBStartsOnOwnLine: -1
    RCuBFinishesWithLineBreak: 1
```

Studying Listing 324, we see that the two poly-switches are at opposition with one another:

- on the one hand, LCuBStartsOnOwnLine should *not* start on its own line (as poly-switch is set to -1);



- on the other hand, `RCuBFinishesWithLineBreak` *should* finish with a line break.

So, which should win the conflict? As demonstrated in Listing 323, it is clear that `LCuBStartsOnOwnLine` won this conflict, and the reason is that *the second argument was processed after the first* – in general, the most recently-processed code block and associated poly-switch takes priority.

We can explore this further by considering the YAML settings in Listing 326; upon running the command

```
cmh:~$ latexindent.pl -m -l=mycom-mlb5.yaml mycommand1.tex
```

we obtain the output given in Listing 325.

LISTING 325: `mycommand1.tex`
using Listing 326

```
\mycommand
{
  mand arg text
  mand arg text}
{
  mand arg text
  mand arg text}
```

LISTING 326: `mycom-mlb5.yaml`

-m

```
modifyLineBreaks:
  mandatoryArguments:
    LCuBStartsOnOwnLine: 1
    RCuBFinishesWithLineBreak: -1
```

As previously, the most-recently-processed code block takes priority – as before, the second (i.e, *last*) argument. Exploring this further, we consider the YAML settings in Listing 328, which give associated output in Listing 327.

LISTING 327: `mycommand1.tex`
using Listing 328

```
\mycommand
{
  mand arg text
  mand arg text}%
{
  mand arg text
  mand arg text}
```

LISTING 328: `mycom-mlb6.yaml`

-m

```
modifyLineBreaks:
  mandatoryArguments:
    LCuBStartsOnOwnLine: 2
    RCuBFinishesWithLineBreak: -1
```

Note that a `%` has been added to the trailing first `}`; this is because:

- while processing the *first* argument, the trailing line break has been removed (`RCuBFinishesWithLineBreak` set to `-1`);
- while processing the *second* argument, `latexindent.pl` finds that it does *not* begin on its own line, and so because `LCuBStartsOnOwnLine` is set to `2`, it adds a comment, followed by a line break.

6.8 Conflicting poly-switches: nested code blocks

Now let's consider an example when nested code blocks have conflicting poly-switches; we'll use the code in Listing 329, noting that it contains nested environments.

LISTING 329: `nested-env.tex`

```
\begin{one}
one text
\begin{two}
two text
\end{two}
\end{one}
```

Let's use the YAML settings given in Listing 331, which upon running the command



```
cmh:~$ latexindent.pl -m -l=nested-env-mlb1.yaml nested-env.tex
```

gives the output in Listing 330.

LISTING 330: nested-env.tex using Listing 331

```
\begin{one}
  one text
  \begin{two}
    two text\end{two}\end{one}
```

LISTING 331: nested-env-mlb1.yaml

-m

```
modifyLineBreaks:
  environments:
    EndStartsOnOwnLine: -1
    EndFinishesWithLineBreak: 1
```

In Listing 330, let's first of all note that both environments have received the appropriate (default) indentation; secondly, note that the poly-switch `EndStartsOnOwnLine` appears to have won the conflict, as `\end{one}` has had its leading line break removed.

To understand it, let's talk about the three basic phases of `latexindent.pl`:

1. Phase 1: packing, in which code blocks are replaced with unique ids, working from *the inside to the outside*, and then sequentially – for example, in Listing 329, the two environment is found *before* the one environment; if the `-m` switch is active, then during this phase:
 - line breaks at the beginning of the body can be added (if `BodyStartsOnOwnLine` is 1 or 2) or removed (if `BodyStartsOnOwnLine` is `-1`);
 - line breaks at the end of the body can be added (if `EndStartsOnOwnLine` is 1 or 2) or removed (if `EndStartsOnOwnLine` is `-1`);
 - line breaks after the end statement can be added (if `EndFinishesWithLineBreak` is 1 or 2).
2. Phase 2: indentation, in which white space is added to the begin, body, and end statements;
3. Phase 3: unpacking, in which unique ids are replaced by their *indented* code blocks; if the `-m` switch is active, then during this phase,
 - line breaks before `begin` statements can be added or removed (depending upon `BeginStartsOnOwnLine`);
 - line breaks after `end` statements can be removed but *NOT* added (see `EndFinishesWithLineBreak`).

With reference to Listing 330, this means that during Phase 1:

- the two environment is found first, and the line break ahead of the `\end{two}` statement is removed because `EndStartsOnOwnLine` is set to `-1`. Importantly, because, *at this stage*, `\end{two}` *does* finish with a line break, `EndFinishesWithLineBreak` causes no action.
- next, the one environment is found; the line break ahead of `\end{one}` is removed because `EndStartsOnOwnLine` is set to `-1`.

The indentation is done in Phase 2; in Phase 3 *there is no option to add a line break after the end statements*. We can justify this by remembering that during Phase 3, the one environment will be found and processed first, followed by the two environment. If the two environment were to add a line break after the `\end{two}` statement, then `latexindent.pl` would have no way of knowing how much indentation to add to the subsequent text (in this case, `\end{one}`).

We can explore this further using the poly-switches in Listing 333; upon running the command

```
cmh:~$ latexindent.pl -m -l=nested-env-mlb2.yaml nested-env.tex
```

we obtain the output given in Listing 332.

LISTING 332: `nested-env.tex` using Listing 333

```
\begin{one}
  one text
  \begin{two}
    two text
  \end{two}\end{one}
```

LISTING 333: `nested-env-mlb2.yaml`

-m

```
modifyLineBreaks:
  environments:
    EndStartsOnOwnLine: 1
    EndFinishesWithLineBreak: -1
```

During Phase 1:

- the two environment is found first, and the line break ahead of the `\end{two}` statement is not changed because `EndStartsOnOwnLine` is set to 1. Importantly, because, *at this stage*, `\end{two}` *does* finish with a line break, `EndFinishesWithLineBreak` causes no action.
- next, the one environment is found; the line break ahead of `\end{one}` is already present, and no action is needed.

The indentation is done in Phase 2, and then in Phase 3, the one environment is found and processed first, followed by the two environment. *At this stage*, the two environment finds `EndFinishesWithLineBreak` is `-1`, so it removes the trailing line break; remember, at this point, `latexindent.pl` has completely finished with the one environment.

7 Conclusions and known limitations

There are a number of known limitations of the script, and almost certainly quite a few that are *unknown*!

The main limitation is to do with the alignment routine discussed on page 21; for example, consider the file given in Listing 334.

LISTING 334: `matrix2.tex`

```
\matrix (A){
c01 & c02 & c03 & c0q \\
c_{11} & c12 & \ldots & c1q \\
};
```

The default output is given in Listing 335, and it is clear that the alignment routine has not worked as hoped, but it is *expected*.

LISTING 335: `matrix2.tex` default output

```
\matrix (A){
c01 & c02 & c03 & c0q \\
c_{11} & c12 & \ldots & c1q \\
};
```

The reason for the problem is that when `latexindent.pl` stores its code blocks (see Table 2 on page 31) it uses replacement tokens. The alignment routine is using the *length of the replacement token* in its measuring – I hope to be able to address this in the future.

There are other limitations to do with the multicolumn alignment routine (see Listing 39 on page 24); in particular, when working with codeblocks in which multicolumn commands overlap, the algorithm can fail.

Another limitation is to do with efficiency, particularly when the `-m` switch is active, as this adds many checks and processes. The current implementation relies upon finding and storing *every* code block (see the discussion on page 78); it is hoped that, in a future version, only *nested* code blocks will need to be stored in the ‘packing’ phase, and that this will improve the efficiency of the script.

You can run `latexindent` on `.sty`, `.cls` and any file types that you specify in `fileExtensionPreference` (see Listing 15 on page 18); if you find a case in which the script struggles, please feel free to report it at [6], and in the meantime, consider using a `noIndentBlock` (see page 20).



I hope that this script is useful to some; if you find an example where the script does not behave as you think it should, the best way to contact me is to report an issue on [6]; otherwise, feel free to find me on the <http://tex.stackexchange.com/users/6621/cmhughes>.

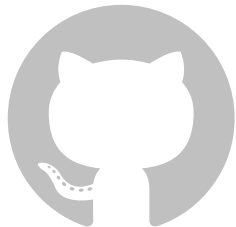
8 References

8.1 External links

- [1] *A Perl script for indenting tex files*. URL: <http://tex.blogoverflow.com/2012/08/a-perl-script-for-indenting-tex-files/> (visited on 01/23/2017).
- [3] *CPAN: Comprehensive Perl Archive Network*. URL: <http://www.cpan.org/> (visited on 01/23/2017).
- [6] *Home of latexindent.pl*. URL: <https://github.com/cmhughes/latexindent.pl> (visited on 01/23/2017).
- [9] *Log4perl Perl module*. URL: <http://search.cpan.org/~mschilli/Log-Log4perl-1.49/lib/Log/Log4perl.pm> (visited on 09/24/2017).
- [12] *Perlbrew*. URL: <http://perlbrew.pl/> (visited on 01/23/2017).
- [13] *Strawberry Perl*. URL: <http://strawberryperl.com/> (visited on 01/23/2017).
- [14] *Text::Tabs Perl module*. URL: <http://search.cpan.org/~muir/Text-Tabs+Wrap-2013.0523/lib.old/Text/Tabs.pm> (visited on 07/06/2017).
- [15] *Text::Wrap Perl module*. URL: <http://perldoc.perl.org/Text/Wrap.html> (visited on 05/01/2017).
- [16] *Video demonstration of latexindent.pl on youtube*. URL: <https://www.youtube.com/watch?v=wo38aaH2F4E&spfreload=10> (visited on 02/21/2017).

8.2 Contributors

- [2] Paulo Cereda. *arara rule, indent.yaml*. May 23, 2013. URL: <https://github.com/cereda/arara/blob/master/rules/indent.yaml> (visited on 01/23/2017).
- [4] Jacobo Diaz. *Changed shebang to make the script more portable*. July 23, 2014. URL: <https://github.com/cmhughes/latexindent.pl/pull/17> (visited on 01/23/2017).
- [5] Jacobo Diaz. *Hiddenconfig*. July 21, 2014. URL: <https://github.com/cmhughes/latexindent.pl/pull/18> (visited on 01/23/2017).
- [7] Jason Juang. *add in PATH installation*. Nov. 24, 2015. URL: <https://github.com/cmhughes/latexindent.pl/pull/38> (visited on 01/23/2017).
- [8] Harish Kumar. *Early version testing*. Nov. 10, 2013. URL: <https://github.com/harishkumarholla> (visited on 06/30/2017).
- [10] mlep. *One sentence per line*. Aug. 16, 2017. URL: <https://github.com/cmhughes/latexindent.pl/issues/81> (visited on 01/08/2018).
- [11] John Owens. *Paragraph line break routine removal*. May 27, 2017. URL: <https://github.com/cmhughes/latexindent.pl/issues/33> (visited on 05/27/2017).
- [17] Michel Voßkuhle. *Remove trailing white space*. Nov. 10, 2013. URL: <https://github.com/cmhughes/latexindent.pl/pull/12> (visited on 01/23/2017).



A Required Perl modules

If you intend to use `latexindent.pl` and *not* one of the supplied standalone executable files, then you will need a few standard Perl modules – if you can run the minimum code in Listing 336 (`perl helloworld.pl`) then you will be able to run `latexindent.pl`, otherwise you may need to install the missing modules – see appendices A.1 and A.2.




LISTING 336: helloworld.pl

```
#!/usr/bin/perl

use strict;
use warnings;
use utf8;
use PerlIO::encoding;
use Unicode::GCString;
use open 'std', ':encoding(UTF-8)';
use Text::Wrap;
use Text::Tabs;
use FindBin;
use YAML::Tiny;
use File::Copy;
use File::Basename;
use File::HomeDir;
use Getopt::Long;
use Data::Dumper;
use List::Util qw(max);
use Log::Log4perl qw(get_logger :levels);

print "hello_world";
exit;
```

N: 2018-01-13 

A.1 Module installer script

latexindent.pl ships with a helper script that will install any missing perl modules on your system; if you run

```
cmh:~$ perl latexindent-module-installer.pl
```

or

```
C:\Users\cmh>perl latexindent-module-installer.pl
```

then, once you have answered Y, the appropriate modules will be installed onto your distribution.

A.2 Manually installed modules

Manually installing the modules given in Listing 336 will vary depending on your operating system and Perl distribution. For example, Ubuntu users might visit the software center, or else run

```
cmh:~$ sudo perl -MCPAN -e 'install "File::HomeDir"'
```

Linux users may be interested in exploring Perlbrew [12]; possible installation and setup options follow for Ubuntu (other distributions will need slightly different commands).



```
cmh:~$ sudo apt-get install perlbrew
cmh:~$ perlbrew install perl-5.22.1
cmh:~$ perlbrew switch perl-5.22.1
cmh:~$ sudo apt-get install curl
cmh:~$ curl -L http://cpanmin.us | perl - App::cpanminus
cmh:~$ cpanm YAML::Tiny
cmh:~$ cpanm File::HomeDir
cmh:~$ cpanm Unicode::GCString
cmh:~$ cpanm Log::Log4perl
cmh:~$ cpanm Log::Dispatch
```

Strawberry Perl users on Windows might use CPAN client. All of the modules are readily available on CPAN [3].

`indent.log` will contain details of the location of the Perl modules on your system. `latexindent.exe` is a standalone executable for Windows (and therefore does not require a Perl distribution) and caches copies of the Perl modules onto your system; if you wish to see where they are cached, use the trace option, e.g

```
C:\Users\cmh>latexindent.exe -t myfile.tex
```

B Updating the path variable

`latexindent.pl` has a few scripts (available at [6]) that can update the path variables. Thank you to [7] for this feature. If you're on a Linux or Mac machine, then you'll want `CMakeLists.txt` from [6].

B.1 Add to path for Linux

To add `latexindent.pl` to the path for Linux, follow these steps:

1. download `latexindent.pl` and its associated modules, `defaultSettings.yaml`, to your chosen directory from [6] ;
2. within your directory, create a directory called `path-helper-files` and download `CMakeLists.txt` and `cmake_uninstall.cmake.in` from [6]/`path-helper-files` to this directory;
3. run

```
cmh:~$ ls /usr/local/bin
```

to see what is *currently* in there;

4. run the following commands

```
cmh:~$ sudo apt-get install cmake
cmh:~$ sudo apt-get update && sudo apt-get install build-essential
cmh:~$ mkdir build && cd build
cmh:~$ cmake ../path-helper-files
cmh:~$ sudo make install
```

5. run

```
cmh:~$ ls /usr/local/bin
```



again to check that `latexindent.pl`, its modules and `defaultSettings.yaml` have been added.

To remove the files, run

```
cmh:~$ sudo make uninstall}.
```

B.2 Add to path for Windows

To add `latexindent.exe` to the path for Windows, follow these steps:

1. download `latexindent.exe`, `defaultSettings.yaml`, `add-to-path.bat` from [6] to your chosen directory;
2. open a command prompt and run the following command to see what is *currently* in your `%path%` variable;

```
C:\Users\cmh>echo %path%
```

3. right click on `add-to-path.bat` and *Run as administrator*;
4. log out, and log back in;
5. open a command prompt and run

```
C:\Users\cmh>echo %path%
```

to check that the appropriate directory has been added to your `%path%`.


To remove the directory from your `%path%`, run `remove-from-path.bat` as administrator.

C logFilePreferences

Listing 16 on page 19 describes the options for customising the information given to the log file, and we provide a few demonstrations here. Let's say that we start with the code given in Listing 337, and the settings specified in Listing 338.

LISTING 337: `simple.tex` 

```
\begin{myenv}
  body of myenv
\end{myenv}
```

LISTING 338: `logfile-prefs1.yaml` 

```
logFilePreferences:
  showDecorationStartCodeBlockTrace: "+++++"
  showDecorationFinishCodeBlockTrace: "-----"
```

If we run the following command (noting that `-t` is active)

```
cmh:~$ latexindent.pl -t -l=logfile-prefs1.yaml simple.tex
```

then on inspection of `indent.log` we will find the snippet given in Listing 339.



LISTING 339: indent.log

```

+++++
TRACE: environment found: myenv
      No ancestors found for myenv
      Storing settings for myenvenvironments
      indentRulesGlobal specified (0) for environments, ...
      Using defaultIndent for myenv
      Putting linebreak after replacementText for myenv
      looking for COMMANDS and key = {value}
TRACE: Searching for commands with optional and/or mandatory arguments AND key =
      {value}
      looking for SPECIAL begin/end
TRACE: Searching myenv for special begin/end (see specialBeginEnd)
TRACE: Searching myenv for optional and mandatory arguments
      ... no arguments found
-----

```

Notice that the information given about myenv is ‘framed’ using +++++ and ----- respectively.

D Differences from Version 2.2 to 3.0

There are a few (small) changes to the interface when comparing Version 2.2 to Version 3.0. Explicitly, in previous versions you might have run, for example,

```
cmh:~$ latexindent.pl -o myfile.tex outputfile.tex
```

whereas in Version 3.0 you would run any of the following, for example,

```

cmh:~$ latexindent.pl -o=outputfile.tex myfile.tex
cmh:~$ latexindent.pl -o outputfile.tex myfile.tex
cmh:~$ latexindent.pl myfile.tex -o outputfile.tex
cmh:~$ latexindent.pl myfile.tex -o=outputfile.tex
cmh:~$ latexindent.pl myfile.tex -outputfile=outputfile.tex
cmh:~$ latexindent.pl myfile.tex -outputfile outputfile.tex

```

noting that the *output* file is given *next to* the `-o` switch.

The fields given in Listing 340 are *obsolete* from Version 3.0 onwards.

LISTING 340: Obsolete YAML fields from Version 3.0

```

alwaysLookforSplitBrackets
alwaysLookforSplitBrackets
checkunmatched
checkunmatchedELSE
checkunmatchedbracket
constructIfElseFi

```

There is a slight difference when specifying indentation after headings; specifically, we now write `indentAfterThisHeading` instead of `indent`. See Listings 341 and 342



LISTING 341:
indentAfterThisHeading in Version
2.2

```
indentAfterHeadings:
  part:
    indent: 0
    level: 1
```

LISTING 342:
indentAfterThisHeading in Version
3.0

```
indentAfterHeadings:
  part:
    indentAfterThisHeading: 0
    level: 1
```

To specify `noAdditionalIndent` for `display-math` environments in Version 2.2, you would write YAML as in Listing 343; as of Version 3.0, you would write YAML as in Listing 344 or, if you're using `-m` switch, Listing 345.

LISTING 343: `noAdditionalIndent` in
Version 2.2

```
noAdditionalIndent:
  \[: 0
  \]: 0
```

LISTING 344: `noAdditionalIndent` for
`displayMath` in Version 3.0

```
specialBeginEnd:
  displayMath:
    begin: '\\\['
    end: '\\\]'
    lookForThis: 0
```

LISTING 345: `noAdditionalIndent` for
`displayMath` in Version 3.0

```
noAdditionalIndent:
  displayMath: 1
```

End

