latexindent.pl

Version 3.0

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`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 modifiy line breaks, and add comment symbols. All user options are customisable via the switches in the YAML interface.

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and contributors! (See Section 7.2 on page 42.) For all communication, please visit [6].

Listings

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 TEX stack exchange [1] I received some positive feedback and follow-up feature requests. A big thank you to Harish Kumar 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 7.2 on page 42 for their valued contributions.

1.2 License

`latexindent.pl` is free and open source, and it always will be. 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 12) but you should still be careful when using it. The script has been tested on many files, but there are some known limitations (see **??**). 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 ([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 C on page 44 and the comments throughout this document for details*

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 [10]

FIX

As you look at Listings 1 to 6, 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 each user can personalize their indentation scheme.

In each of the samples given in Listings 1 to 6 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 1: 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 2: 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 3: tikzset.tex

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

LISTING 4: tikzset.tex default output

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

LISTING 5: 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 6: 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 43 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 11.

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 42 for details.

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 customised, 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.

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

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

`-h, -help`

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

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

FIX

```
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 exists[1]. 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` is equivalent to using

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

See appendix C on page 44 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
```

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

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` 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 *relative* path names to the current directory, but *not* absolute paths – for absolute paths, see Section 4 on the next page. Explicit demonstrations of how to use the `-l` switch are given throughout this documentation.

`-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`/`.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.

`-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`

```
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.

`-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 34

`latexindent.pl` can also be called on a file without the file extension, for example `latexindent.pl myfile` and in which case, you can specify the order in which extensions are searched for; see Listing 11 on page 11 for full details.

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`. `arara` ships with a rule, `indent.yaml`, but in case you do not have this rule, you can find it at [2].

You can use the rule in any of the ways described in Listing 7 (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 7: `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 }
% arara: indent: { modifylinebreaks: yes }
\documentclass{article}
...
```

FIX

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.

4 User, local settings, `indentconfig.yaml` and `.indentconfig.yaml`

Editing `defaultSettings.yaml` is not ideal as it may be overwritten when updating your distribution– a better way to customize the settings to your liking is to set up your own settings file, `mysettings.yaml` (or any name you like, provided it ends with `.yaml`). The only thing you have to do is tell `latexindent.pl` where to find it.

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
modifylinebreaks	-m

`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 equally represents `.indentconfig.yaml` as well. If you have both files in existence, `indentconfig.yaml` takes priority.

For Mac and Linux users, their home directory is `/username` while Windows (Vista onwards) is `C:\Users\username` [2] Listing 8 shows a sample `indentconfig.yaml` file.

LISTING 8: `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 that you write them in. 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 9 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.

[2] If 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 9: `mysettings.yaml` (example)

```
# Default value of indentation
defaultIndent: "\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 `whatevernameyoulike.yaml` file.

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

4.1 `localSettings.yaml`

The `-l` switch tells `latexindent.pl` either to look for `localSettings.yaml` in the *same directory* as `myfile.tex`; alternatively, it may look for any other specified YAML file. Any settings file(s) specified in this way will be read *after* `defaultSettings.yaml` and, assuming they exist, user settings from `indentconfig.yaml`.

The *local* settings file may be called `localSettings.yaml`, and it can contain any switches that you'd like to change; a sample is shown in Listing 10.

LISTING 10: `localSettings.yaml` (example)

```
#  verbatim environments- environments specified
#  in this hash table will not be changed at all!
verbatimEnvironments:
cmhenvironment: 0
```

You can make sure that your local settings are loaded by checking `indent.log` for details; if `localSettings.yaml` can not be read then you will get a warning, otherwise you'll get confirmation that `latexindent.pl` has read `localSettings.yaml`.

FIX

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

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

4.2 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 4.1). You may specify relative paths to other YAML files using the `-l` switch, separating files using commas.

FIX

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

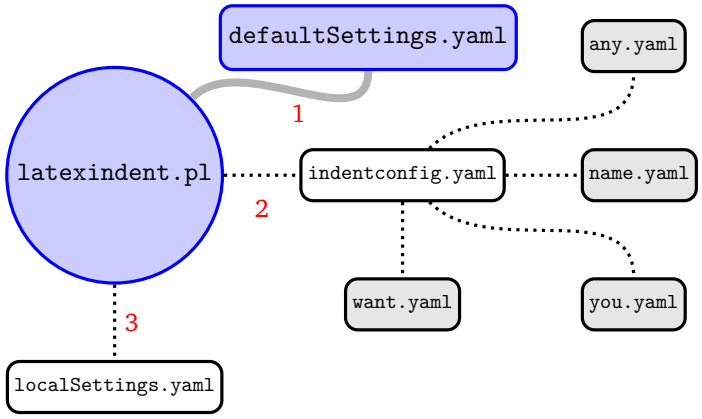


FIGURE 1: Schematic of the load order described in Section 4.2; solid lines represent mandatory files, dotted lines represent optional files. `indentconfig.yaml` can contain as many files as you like. The files will be loaded in order; if you specify settings for the same field in more than one file, the most recent takes priority.

A visual representation of this is given in Figure 1.

5 defaultSettings.yaml

`latexindent.pl` loads its settings from `defaultSettings.yaml` (rhymes with camel). 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 11 means that the script will first look for `myfile.tex`, then `myfile.sty`, `myfile.cls`, and finally `myfile.bib` in order[4].

LISTING 11: `fileExtensionPreference`

```
22 fileExtensionPreference:
23     .tex: 1
24     .sty: 2
25     .cls: 3
26     .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`

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

would be created when calling `latexindent.pl myfile.tex`.

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 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 customised by changing `logFilePreferences`; see Listing 12. If you load your own user settings (see Section 4 on page 8) 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. 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`.

LISTING 12: `logFilePreferences`

```
63 logFilePreferences:
64     showEveryYamlRead: 1
65     showAmalgamatedSettings: 0
66     endLogFileWith: '--------------'
67     showGitHubInfoFooter: 1
```

`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 13.

LISTING 13: `verbatimEnvironments`

```
71 verbatimEnvironments:
72     verbatim: 1
73     lstlisting: 1
```

LISTING 14:

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 34).

`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 15.

LISTING 15: `noIndentBlock`

```
84 noIndentBlock:
85     noindent: 1
86     cmhtest: 1
```

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 16 for example.

LISTING 16: `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 17; each of the fields can take the values `0` or `1`. See Listings 174 to 176 on page 39 for before and after results. Thanks to [11] for providing this feature.

LISTING 17: `removeTrailingWhitespace`

```
89 removeTrailingWhitespace:
90     beforeProcessing: 0
91     afterProcessing: 1
```

`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 18. The behaviour of `latexindent.pl` on these environments is determined by their location (preamble or not), and the value `indentPreamble`, discussed next.

LISTING 18: `fileContentsEnvironments`

```
95 fileContentsEnvironments:
96     filecontents: 1
97     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 19, 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.

LISTING 19: lookForPreamble

```
lookForPreamble:
    .tex: 1
    .sty: 0
    .cls: 0
    .bib: 0
```

`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 20.

LISTING 20: 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 20 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 21). In fact, the fields in `lookForAlignDelims` can actually take two different forms: the *basic* version is shown in Listing 21 and the *advanced* version in Listing 24; we will discuss each in turn.

LISTING 21: lookForAlignDelims (basic)

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

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 **??**), but in many cases it will produce results such as those in Listings 22 and 23.

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,

if you just want to ignore *specific* instances of the environment, you could wrap them in something from `noIndentBlock` (see Listing 15).

LISTING 22: `tabular1.tex`

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

LISTING 23: `tabular1.tex` default output

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

If you wish to remove the alignment of the `\\` within a delimiter-aligned block, then the advanced form of `lookForAlignDelims` shown in Listing 24 is for you.

LISTING 24: `tabular.yaml`

```
lookForAlignDelims:
   tabular:
      delims: 1
      alignDoubleBackSlash: 0
      spacesBeforeDoubleBackSlash: 0
   tabularx:
      delims: 1
   longtable: 1
```

Note that you can use a mixture of the basic and advanced form: in Listing 24 `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 up to 3 fields:

- `delims`: switch equivalent to simply specifying, for example, `tabular:  1` in the basic version shown in Listing 21 (default: 1);
- `alignDoubleBackSlash`: switch to determine if `\\` should be aligned (default: 1);
- `spacesBeforeDoubleBackSlash`: optionally, specifies the number of spaces to be inserted before (non-aligned) `\\`. In order to use this field, `alignDoubleBackSlash` needs to be set to 0 (default: 0).

Assuming that you have the settings in Listing 24 saved in `tabular.yaml`, and the code from Listing 22 in `tabular1.tex` and you run

```
cmh:~$ latexindent.pl -l tabular.yaml tabular1.tex
```

then you should receive the before-and-after results shown in Listings 25 and 26; note that the ampersands have been aligned, but the `\\` have not (compare the alignment of `\\` in Listings 23 and 26).

LISTING 25: `tabular1.tex`

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

LISTING 26: `tabular1.tex` using Listing 24

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

Saving Listing 24 into `tabular1.yaml` as in Listing 28, and running the command

```
cmh:~$ latexindent.pl -l tabular1.yaml tabular1.tex
```

gives Listing 27; note the spacing before the `\\`.

Listing 27: tabular1.tex using Listing 28

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

Listing 28: tabular1.yaml

```
lookForAlignDelims:
   tabular:
      delims: 1
      alignDoubleBackSlash: 0
      spacesBeforeDoubleBackSlash: 3
   tabularx:
      delims: 1
   longtable: 1
```

As of Version 3.0, the alignment routine works on mandatory and optional arguments within commands, and also within 'special' code blocks (see); 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

FIX

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

then the before-and-after results shown in Listings 29 and 30 are achievable by default.

Listing 29: matrix1.tex

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

Listing 30: matrix1.tex default output

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

FIX

FIX

`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 32 and 33

Listing 31: indentAfterItems

```
indentAfterItems:
    itemize: 1
    enumerate: 1
    list: 1
```

Listing 32: 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 33: 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 8 for details of how to configure user settings, and Listing 9 on page 10 in particular .)

Listing 34: itemNames

```
itemNames:
    item: 1
    myitem: 1
```

`specialBeginEnd`: ⟨*fields*⟩

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 35 shows the default settings of `specialBeginEnd`.

LISTING 35: `specialBeginEnd`

```
specialBeginEnd:
    displayMath:
        begin: '\\\['
        end: '\\\]'
        lookForThis: 1
    inlineMath:
        begin: '(?<!\$)(?<!\\)\$(?!\$)'
        end: '(?<!\\)\$(?!\$)'
        lookForThis: 1
    displayMathTeX:
        begin: '\$\$'
        end: '\$\$'
        lookForThis: 1
```

The field `displayMath` represents `\[...\]`, `inlineMath` represents `$...$` and `displayMathTex` represents `$$...$$`. You can, of course, rename these in your own YAML files (see Section 4.1 on page 10); indeed, you might like to set up your own specil begin and end statements.

A demonstration of the before-and-after results are shown in Listings 36 and 37.

LISTING 36: `special1.tex` before

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

LISTING 37: `special1.tex` after

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

For each field, the `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`.

`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.[5]

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

LISTING 38: `indentAfterHeadings`

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

[5] There is a slight difference in interface for this field when comparing Version 2.2 to Version 3.0; see appendix C on page 44 for details.

`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` ; 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`).

FIX

For example, assuming that you have read Section 4.1 on page 10, say that you have the code in Listing 39 saved into `headings1.yaml`, and that you have the text from Listing 40 saved into `headings1.tex`.

LISTING 39: `headings1.yaml`

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

LISTING 40: `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 41.

LISTING 41: `headings1.tex` using Listing 39

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

LISTING 42: `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 39 so that the `paragraph` `level` is `1`; after running

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

you should now receive the code given in Listing 42; notice that the `paragraph` and `subsection` are at the same indentation level.

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.

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

Code block	characters allowed in name	example

environments	`a-zA-Z@\*0-9_\\`	`\begin{myenv}`
		`body of myenv`
		`\end{myenv}`

optionalArguments	*inherits* name from parent (e.g environment name)	`[`
		`opt arg text`
		`]`

mandatoryArguments	*inherits* name from parent (e.g environment name)	`{`
		`mand arg text`
		`}`

commands	`+a-zA-Z@\*0-9_\:`	`\mycommand`⟨*arguments*⟩
keyEqualsValuesBraces	`a-zA-Z@\*0-9_\/.\h\{\}:\#-`	`my key/.style=`⟨*arguments*⟩
namedGroupingBracesBrackets	`a-zA-Z@\*><`	`in`⟨*arguments*⟩
UnNamedGroupingBracesBrackets	*No name!*	`{` or `[` or `,` or `&` or `)` or `(` or `$` followed by ⟨*arguments*⟩

ifElseFi	`@a-zA-Z` but must begin with either `\if` of `\@if`	`\ifnum...`
		`...`
		`\else`
		`...`
		`\fi`

items	User specified, see Listings 31 and 34 on page 16	`\begin{enumerate}`
		`  \item ...`
		`\end{enumerate}`

specialBeginEnd	User specified, see Listing 35 on page 17	`\[`
		`  ...`
		`\]`

afterHeading	User specified, see Listing 38 on page 17	`\chapter{title}`
		`  ...`
		`\section{title}`

filecontents	User specified, see Listing 18 on page 13 . . .

```
\begin{filecontents}
...
\end{filecontents}
```

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 on page 18; for each type of code block in Table 2 on page 19 (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*⟩;
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 19; for reference, there follows a list of the code blocks covered.

5.2.1 Environments and their arguments

There are a few different YAML switches governing the indentation of environments; let's start with the simple sample code shown in Listing 51.

LISTING 51: 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 52 and 53.

LISTING 52: myenv-noAdd1.yaml

```
noAdditionalIndent:
    myenv: 1
```

LISTING 53: 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 54; note in particular that the environment myenv has not received any *additional* indentation, but that the outer environment *has* still received indentation.

LISTING 54: myenv.tex output (using either Listing 52 or Listing 53)

```
\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 55 and 56, 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 57.

LISTING 55: myenv-noAdd3.yaml

```
noAdditionalIndent:
    myenv: 0
```

LISTING 56: myenv-noAdd4.yaml

```
noAdditionalIndent:
    myenv:
        body: 0
```

LISTING 57: myenv.tex output (using either Listing 55 or Listing 56)

```
\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 58.

LISTING 58: 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 59; 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 52), then *all* parts of the environment (body, optional and mandatory arguments) are assumed to want no additional indent.

LISTING 59: myenv-args.tex using Listing 52

```
\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 60 and 61.

LISTING 60: myenv-noAdd5.yaml

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

LISTING 61: 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 62 and 63. Note that in Listing 62 the text for the *optional* argument has not received any additional indentation, and that in Listing 63 the *mandatory* argument has not received any additional indentation; in both cases, the *body* has not received any additional indentation.

LISTING 62: myenv-args.tex using Listing 60

```
\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 63: myenv-args.tex using Listing 61

```
\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 64 and 65.

LISTING 64: myenv-rules1.yaml

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

LISTING 65: 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 66; note in particular that the environment `myenv` has not received any *additional* indentation, but that the `outer` environment *has* still received indentation.

LISTING 66: myenv.tex output (using either Listing 64 or Listing 65)

```
\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 58 that contains optional and mandatory arguments. Upon using Listing 64 as in

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

we obtain the output in Listing 67; note that the body, optional argument and mandatory argument have *all* received the same customised indentation.

LISTING 67: myenv-args.tex using Listing 64

```
\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 68 and 69

LISTING 68: myenv-rules3.yaml

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

LISTING 69: 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 70 and 71.

LISTING 70: myenv-args.tex using Listing 68

```
\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 71: myenv-args.tex using Listing 69

```
\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}
```

Note that in Listing 70, 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 71, 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 List- 247 248

LISTING 72: env-noAdditionalGlobal.yaml

```
noAdditionalIndentGlobal:
    environments: 0
```

ing 72). Let's say that you change the value of `environments` to 1 in Listing 72, and that you run

```
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 73 and 74; in Listing 73 notice that *both* environments receive no additional indentation but that the arguments of `myenv` still *do* receive indentation. In Listing 74 notice that the *outer* environment does not receive additional indentation, but because of the settings from `myenv-rules1.yaml` (in Listing 64 on page 23), the `myenv` environment still *does* receive indentation.

LISTING 73: `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}
```

LISTING 74: `myenv-args.tex` using Listings 64 and 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}
```

In fact, `noAdditionalIndentGlobal` also contains keys that control the indentation of optional and mandatory arguments; on referencing Listings 75 and 76

LISTING 75: `opt-args-no-add-glob.yaml`

```
noAdditionalIndentGlobal:
    optionalArguments: 1
```

LISTING 76: `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 77 and 78. Notice that in Listing 77 the *optional* argument has not received any additional indentation, and in Listing 78 the *mandatory* argument has not received any additional indentation.

LISTING 77: `myenv-args.tex` using Listing 75

```
\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 78: `myenv-args.tex` using Listing 76

```
\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 79; if you change the `environments` field to anything involving horizontal space, say `" "`, and then run the following commands

LISTING 79: env-indentRulesGlobal.yaml

```
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 80 and 81. Note that in Listing 80, both the environment blocks have received a single-space indentation, whereas in Listing 81 the `outer` environment has received single-space indentation (specified by `indentRulesGlobal`), but `myenv` has received `"    "`, as specified by the particular `indentRules` for `myenv` Listing 64 on page 23.

LISTING 80: myenv-args.tex using Listing 79

```
\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 81: myenv-args.tex using Listings 64 and 79

```
\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 82 and 83

LISTING 82: opt-args-indent-rules-glob.yaml

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

LISTING 83: 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 84 and 85. Note that the *optional* argument in Listing 84 has received two tabs worth of indentation, while the *mandatory* argument has done so in Listing 85.

LISTING 84: myenv-args.tex using Listing 82

```
\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 85: myenv-args.tex using Listing 83

```
\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 31 and 34 on page 16, some commands may contain `item` commands; for the purposes of this discussion, we will use the code from Listing 32 on page 16.

Assuming that you've populated `itemNames` with the name of your `item`, you can put the item name into `noAdditionalIndent` as in Listing 86, 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 87

LISTING 86: item-noAdd1.yaml

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

LISTING 87: 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 88 and 89; note that in Listing 88 that the text after each `item` has not received any additional identation, and in Listing 89, the text after each `item` has received a single space of indentation, specified by Listing 87.

LISTING 88: items1.tex using Listing 86

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

LISTING 89: items1.tex using Listing 87

```
\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 90 and 91. Note that there is a need to 'reset/remove' the `item` field from `indentRules` in both cases (see the hierarchy description given on page 20) as the `item` command is a member of `indentRules` by default.

LISTING 90: items-noAdditionalGlobal.yaml

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

LISTING 91: 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 88 and 89 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 92; when `latexindent.pl` operates on this file, the default output is shown in Listing 93.

LISTING 92: mycommand.tex

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

LISTING 93: 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 52 and 53 on page 21) we may specify `noAdditionalIndent` either in 'scalar' form, or in 'field' form, as shown in Listings 94 and 95

LISTING 94: mycommand-noAdd1.yaml

```
noAdditionalIndent:
    mycommand: 1
```

LISTING 95: 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 96 and 97

LISTING 96: mycommand.tex using Listing 94

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

LISTING 97: mycommand.tex using Listing 95

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

Note that in Listing 96 that the 'body', optional argument *and* mandatory argument have *all* received no additional indentation, while in Listing 97, 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 60 and 61 on page 22; explicit examples are given in Listings 98 and 99.

LISTING 98: mycommand-noAdd3.yaml

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

LISTING 99: 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 100 and 101.

LISTING 100: mycommand.tex using Listing 98

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

LISTING 101: mycommand.tex using Listing 99

```
\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 100 and 101 has received no additional indent, even though `body` is explicitly set to `0` in both Listings 98 and 99. This is because, by default, `noAdditionalIndentGlobal` for `commands` is set to `1` by default; this can be easily fixed as in Listings 102 and 103.

LISTING 102: mycommand-noAdd5.yaml

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

LISTING 103: 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 104 and 105.

LISTING 104: mycommand.tex using Listing 102

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

LISTING 105: mycommand.tex using Listing 103

```
\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 68 and 69 on page 24 and Listings 79, 82 and 83 on page 26.

5.2.4 ifelsefi code blocks

Let's use the simple example shown in Listing 106; when latexindent.pl operates on this file, the output as in Listing 107; note that the body of each of the \if statements have been indented, and that the \else statement has been accounted for correctly.

LISTING 106: ifelsefi1.tex

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

LISTING 107: ifelsefi1.tex default output

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

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 108 and 109.

LISTING 108: ifnum-noAdd.yaml

```
noAdditionalIndent:
    ifnum: 1
```

LISTING 109: ifnum-indent-rules.yaml

```
indentRules:
    ifnum: "  "
```

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 110 and 111; note that in Listing 110, the ifnum code block has *not* received any additional indentation, while in Listing 111, the ifnum code block has received one tab and two spaces of indentation.

LISTING 110: ifelsefi1.tex using Listing 108

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

LISTING 111: ifelsefi1.tex using Listing 109

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

We may specify noAdditionalIndentGlobal and indentRulesGlobal as in Listings 112 and 113.

LISTING 112: ifelsefi-noAdd-glob.yaml

```
noAdditionalIndentGlobal:
    ifElseFi: 1
```

LISTING 113: ifelsefi-indent-rules-global.yaml

```
indentRulesGlobal:
    ifElseFi: " "
```

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 114 and 115; notice that in Listing 114 neither of the `ifelsefi` code blocks have received indentation, while in Listing 115 both code blocks have received a single space of indentation.

LISTING 114: ifelsefi1.tex using Listing 112

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

LISTING 115: ifelsefi1.tex using Listing 113

```
\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 36 on page 17 which has default output shown in Listing 37 on page 17.

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 116 and 117.

LISTING 116: displayMath-noAdd.yaml

```
noAdditionalIndent:
    displayMath: 1
```

LISTING 117: 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 118 and 119; note that in Listing 118, the `displayMath` code block has *not* received any additional indentation, while in Listing 119, the `displayMath` code block has received three tabs worth of indentation.

LISTING 118: special1.tex using Listing 116

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

LISTING 119: special1.tex using Listing 117

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

We may specify `noAdditionalIndentGlobal` and `indentRulesGlobal` as in Listings 120 and 121.

LISTING 120: special-noAdd-glob.yaml

```
noAdditionalIndentGlobal:
    specialBeginEnd: 1
```

LISTING 121: 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 122 and 123; notice that in Listing 122 neither of the `special` code blocks have received indentation, while in Listing 123 both code blocks have received a single space of indentation.

LISTING 122: special1.tex using Listing 120

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

LISTING 123: special1.tex using Listing 121

```
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 124 for demonstration throughout this Section. As discussed on page 18, by default `latexindent.pl` will not add indentation after headings.

LISTING 124: headings2.tex

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

On using the YAML file in Listing 126 by running the command

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

we obtain the output in Listing 125. Note that the argument of `paragraph` has received (default) indentation, and that the body after the heading statement has received (default) indentation.

LISTING 125: headings2.tex using Listing 126

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

LISTING 126: headings3.yaml

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

If we specify `noAdditionalIndent` as in Listing 128 and run the command

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

then we receive the output in Listing 127. 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 127: `headings2.tex` using Listing 128

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

LISTING 128: `headings4.yaml`

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

Similarly, if we specify `indentRules` as in Listing 130 and run analogous commands to those above, we receive the output in Listing 129; note that the *body*, *mandatory argument* and content *after the heading* of `paragraph` have *all* received three tabs worth of indentation.

LISTING 129: `headings2.tex` using Listing 130

```
\paragraph{paragraph
    ┤   ┤   ┤   ┤   ┤   ┤   ┤   ┤   ┤title}
    ┤   ┤   ┤paragraph␣text
    ┤   ┤   ┤paragraph␣text
```

LISTING 130: `headings5.yaml`

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

We may, instead, specify `noAdditionalIndent` in 'field' form, as in Listing 132 which gives the output in Listing 131.

LISTING 131: `headings2.tex` using Listing 132

```
\paragraph{paragraph
    ┤title}
paragraph␣text
paragraph␣text
```

LISTING 132: `headings6.yaml`

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

Analogously, we may specify `indentRules` as in Listing 134 which gives the output in Listing 133; 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 133: `headings2.tex` using Listing 134

```
\paragraph{paragraph
    ┤   ┤   ┤␣title}
    ┤   ┤   ┤paragraph␣text
    ┤   ┤   ┤paragraph␣text
```

LISTING 134: `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 136 and 136 respectively, with respective output in Listings 135 and 137. Note that in Listing 136 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 137, the *argument*

has received both a (default) tab plus two spaces of indentation (from the global rule specified in Listing 138), and the remaining body after `paragraph` has received just two spaces of indentation.

LISTING 135: `headings2.tex` using Listing 136

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

LISTING 136: `headings8.yaml`

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

LISTING 137: `headings2.tex` using Listing 138

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

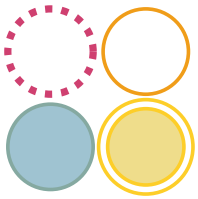
LISTING 138: `headings9.yaml`

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

6 The `-m` (`modifylinebreaks`) switch

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

`modifylinebreaks`: ⟨*fields*⟩



One of the most exciting features of Version 3.0 is 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 139.

LISTING 139: `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 140 shows a sample file with blank lines; upon running

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

the output is shown in Listing 141; note that the multiple blank lines have been condensed into one blank line, and note also that we have used the `-m` switch!

LISTING 140: `mlb1.tex`

```
before␣blank␣line


after␣blank␣line


after␣blank␣line
```

LISTING 141: `mlb1.tex` out output

```
before␣blank␣line

after␣blank␣line

after␣blank␣line
```

6.1 Poly-switches

Every other field in the `modifyLineBreaks` field uses poly-switches, and can take one of four integer values[6]:

−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>*.

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.

6.2 modifyLineBreaks for environments

We start by viewing a snippet of `defaultSettings.yaml` in Listing 142; note that it contains *global* settings (immediately after the `environments` field) and that *per-name* settings are also allowed – in the case of Listing 142, settings for `equation*` have been specified. Note that all poly-switches are *off* by default.

LISTING 142: `environments`

```
348     environments:
349         BeginStartsOnOwnLine: 0
350         BodyStartsOnOwnLine: 0
351         EndStartsOnOwnLine: 0
352         EndFinishesWithLineBreak: 0
353         equation*:
354             BeginStartsOnOwnLine: 0
355             BodyStartsOnOwnLine: 0
356             EndStartsOnOwnLine: 0
357             EndFinishesWithLineBreak: 0
```

6.2.1 Adding line breaks (poly-switches set to 1 or 2)

Let's begin with the simple example given in Listing 143; note that we have annotated key parts of the file using ♠, ♡, ♢ and ♣, these will be related to fields specified in Listing 142.

[6] visual learners might like to associate one of the four circles in the logo with one of the four given values

LISTING 143: env-mlb1.tex

```
before words♠ \begin{myenv}♡body of myenv♢\end{myenv}♣ after words
```

Let's explore BeginStartsOnOwnLine and BodyStartsOnOwnLine in Listings 144 and 145, and in particular, let's allow each of them in turn to take a value of 1.

LISTING 144: env-mlb1.yaml

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

LISTING 145: env-mlb2.yaml

```
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 146 and 147 respectively.

LISTING 146: env-mlb.tex using Listing 144

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

LISTING 147: env-mlb.tex using Listing 145

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

There are a couple of points to note:

- in Listing 146 a line break has been added at the point denoted by ♠ in Listing 143; no other line breaks have been changed;
- in Listing 147 a line break has been added at the point denoted by ♡ in Listing 143; furthermore, note that the *body* of myenv has received the appropriate (default) indentation.

Let's now change each of the 1 values in Listings 144 and 145 so that they are 2 and save them into env-mlb3.yaml and env-mlb4.yaml respectively (see Listings 148 and 149).

LISTING 148: env-mlb3.yaml

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

LISTING 149: env-mlb4.yaml

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

Upon running commands analogous to the above, we obtain Listings 150 and 151.

LISTING 150: env-mlb.tex using Listing 148

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

LISTING 151: env-mlb.tex using Listing 149

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

Note that line breaks have been added as in Listings 146 and 147, 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.

Let's explore EndStartsOnOwnLine and EndFinishesWithLineBreak in Listings 152 and 153, and in particular, let's allow each of them in turn to take a value of 1.

LISTING 152: env-mlb5.yaml

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

LISTING 153: env-mlb6.yaml

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

After running the following commands,

```
cmh:~$ latexindent.pl -m env-mlb.tex -l env-mlb5.yaml
cmh:~$ latexindent.pl -m env-mlb.tex -l env-mlb6.yaml
```

the output is as in Listings 154 and 155.

LISTING 154: env-mlb.tex using Listing 152

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

LISTING 155: env-mlb.tex using Listing 153

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

There are a couple of points to note:

- in Listing 154 a line break has been added at the point denoted by ♢ in Listing 143 on page 36; no other line breaks have been changed and the \end{myenv} statement has *not* received indentation (as intended);
- in Listing 155 a line break has been added at the point denoted by ♣ in Listing 143 on page 36.

Let's now change each of the 1 values in Listings 152 and 153 so that they are 2 and save them into env-mlb7.yaml and env-mlb8.yaml respectively (see Listings 156 and 157).

LISTING 156: env-mlb7.yaml

```
modifyLineBreaks:
    environments:
        EndStartsOnOwnLine: 2
```

LISTING 157: env-mlb8.yaml

```
modifyLineBreaks:
    environments:
        EndFinishesWithLineBreak: 2
```

Upon running commands analogous to the above, we obtain Listings 158 and 159.

LISTING 158: env-mlb.tex using Listing 156

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

LISTING 159: env-mlb.tex using Listing 157

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

Note that line breaks have been added as in Listings 154 and 155, 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.

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 160 using any of the YAML files presented so far in this section, it will be left unchanged.

LISTING 160: env-mlb2.tex

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

LISTING 161: env-mlb3.tex

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

In contrast, the output from processing the file in Listing 161 will vary depending on the poly-switches used; in Listing 162 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 163 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 161 and by setting the other poly-switches considered so far to 2 in turn.

LISTING 162: env-mlb3.tex using Listing 145 on page 36

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

LISTING 163: env-mlb3.tex using Listing 149 on page 36

```
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 142 on page 35, an example is shown for the `equation*` environment.

6.2.2 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 164, noting in particular the positions of the line break highlighters, ♠, ♡, ♢ and ♣, together with the associated YAML files in Listings 165 to 168.

LISTING 164: env-mlb4.tex

```
before words♠
\begin{myenv}♡
body of myenv♢
\end{myenv}♣
after words
```

LISTING 165: env-mlb9.yaml

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

LISTING 166: env-mlb10.yaml

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

LISTING 167: env-mlb11.yaml

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

LISTING 168: env-mlb12.yaml

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

After running the commands

```
cmh:~$ latexindent.pl -m env-mlb4.tex -l env-mlb9.yaml
cmh:~$ latexindent.pl -m env-mlb4.tex -l env-mlb10.yaml
cmh:~$ latexindent.pl -m env-mlb4.tex -l env-mlb11.yaml
cmh:~$ latexindent.pl -m env-mlb4.tex -l env-mlb12.yaml
```

we obtain the respective output in Listings 169 to 172.

LISTING 169: env-mlb4.tex using Listing 165

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

LISTING 170: env-mlb4.tex using Listing 166

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

LISTING 171: env-mlb4.tex using Listing 167

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

LISTING 172: env-mlb4.tex using Listing 168

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

Notice that in

- Listing 169 the line break denoted by ♠ in Listing 164 has been removed;
- Listing 170 the line break denoted by ♡ in Listing 164 has been removed;
- Listing 171 the line break denoted by ♢ in Listing 164 has been removed;
- Listing 172 the line break denoted by ♣ in Listing 164 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 165 to 168 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-mlb9.yaml,env-mlb10.yaml,env-mlb11.yaml,env-mlb12.yaml
```

which gives the output in Listing 143 on page 36.

About trailing horizontal space Recall that on page 13 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 173, which highlights trailing spaces.

LISTING 173: env-mlb5.tex

```
before␣words␣␣␣♠
\begin{myenv}␣␣␣␣␣␣␣␣␣␣␣♡
body␣of␣myenv␣␣␣␣␣␣♢
\end{myenv}␣␣␣␣␣♣
after␣words
```

LISTING 174: removeTWS-before.yaml

```
removeTrailingWhitespace:
    beforeProcessing: 1
```

The output from the following commands

```
cmh:~$ latexindent.pl -m env-mlb5.tex -l env-mlb9.yaml,env-mlb10.yaml,env-mlb11.yaml,env-mlb12.yaml
cmh:~$ latexindent.pl -m env-mlb5.tex -l
    env-mlb9.yaml,env-mlb10.yaml,env-mlb11.yaml,env-mlb12.yaml,removeTWS-before.yaml
```

is shown, respectively, in Listings 175 and 176; note that the trailing horizontal white space has been preserved (by default) in Listing 175, while in Listing 176, it has been removed using the switch specified in Listing 174.

LISTING 175: env-mlb5.tex using Listings 169 to 172

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

LISTING 176: env-mlb5.tex using Listings 169 to 172 *and* Listing 174

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

Blank lines Now let's consider the file in Listing 177, which contains blank lines.

LISTING 177: env-mlb6.tex

```
before words♠

\begin{myenv}♡

body of myenv♢

\end{myenv}♣

after words
```

LISTING 178: UnpreserveBlankLines.yaml

```
modifyLineBreaks:
    preserveBlankLines: 0
```

Upon running the following commands

```
cmh:~$ latexindent.pl -m env-mlb6.tex -l env-mlb9.yaml,env-mlb10.yaml,env-mlb11.yaml,env-mlb12.yaml
cmh:~$ latexindent.pl -m env-mlb6.tex -l
    env-mlb9.yaml,env-mlb10.yaml,env-mlb11.yaml,env-mlb12.yaml,UnpreserveBlankLines.yaml
```

we receive the respective outputs in Listings 179 and 180. In Listing 179 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 180, we have allowed the poly-switches to remove blank lines because, in Listing 178, we have set `preserveBlankLines` to 0.

LISTING 179: env-mlb6.tex using Listings 169 to 172

```
before␣words

\begin{myenv}

    ♯body␣of␣myenv

\end{myenv}

after␣words
```

LISTING 180: env-mlb6.tex using Listings 169 to 172 *and* Listing 178

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

6.3 Poly-switches for other code blocks

Rather than repeat the examples shown for the environment code blocks (in Section 6.2 on page 35), 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*.

TABLE 3: Poly-switch mappings for all code-block types

Code block	Sample	Poly-switch mapping

environment	`before words♠`
	`\begin{myenv}♡`
	`body of myenv♢`
	`\end{myenv}♣`
	`after words`
		♠ BeginStartsOnOwnLine
		♡ BodyStartsOnOwnLine
		♢ EndStartsOnOwnLine
		♣ EndFinishesWithLineBreak

ifelsefi	before words♠ \if...♡ body of if statement★ \else□ body of else statement♢ \fi♣ after words	♠ IfStartsOnOwnLine ♡ BodyStartsOnOwnLine ★ ElseStartsOnOwnLine □ ElseFinishesWithLineBreak ♢ FiStartsOnOwnLine ♣ FiFinishesWithLineBreak
optionalArguments	...♠ [♡ body of opt arg♢]♣ ...	♠ LSqBStartsOnOwnLine[7] ♡ OptArgBodyStartsOnOwnLine ♢ RSqBStartsOnOwnLine ♣ RSqBFinishesWithLineBreak
mandatoryArguments	...♠ {♡ body of mand arg♢ }♣ ...	♠ LCuBStartsOnOwnLine[8] ♡ MandArgBodyStartsOnOwnLine ♢ RCuBStartsOnOwnLine ♣ RCuBFinishesWithLineBreak
commands	before words♠ \mycommand♡ ⟨*arguments*⟩	♠ CommandStartsOnOwnLine ♡ CommandNameFinishesWithLineBreak
namedGroupingBraces Brackets	before words♠ myname♡ ⟨*braces/brackets*⟩	♠ NameStartsOnOwnLine ♡ NameFinishesWithLineBreak
keyEqualsValuesBraces	before words♠ key•=♡ ⟨*braces/brackets*⟩	♠ KeyStartsOnOwnLine • EqualsStartsOnOwnLine ♡ EqualsFinishesWithLineBreak
items	before words♠ \item♡ ...	♠ ItemStartsOnOwnLine ♡ ItemFinishesWithLineBreak

[7] LSqB stands for Left Square Bracket
[8] LCuB stands for Left Curly Brace

specialBeginEnd	before words♠ \[♡ body of special♢ \]♣ after words	♠ SpecialBeginStartsOnOwnLine ♡ SpecialBodyStartsOnOwnLine ♢ SpecialEndStartsOnOwnLine ♣ SpecialEndFinishesWithLineBreak

7 References

7.1 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).

[8] *Perlbrew*. URL: http://perlbrew.pl/ (visited on 01/23/2017).

[9] *Strawberry Perl*. URL: http://strawberryperl.com/ (visited on 01/23/2017).

[10] *Video demonstration of latexindet.pl on youtube*. URL: http://www.youtube.com/watch?v=s_AMmNVg5WM (visited on 01/23/2017).

7.2 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).

[11] 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 190 (`perl helloworld.pl`) then you will be able to run `latexindent.pl`, otherwise you may need to install the missing modules.

LISTING 190: `helloworld.pl`

```
#!/usr/bin/perl

use strict;
use warnings;
use FindBin;
use YAML::Tiny;
use File::Copy;
use File::Basename;
use Getopt::Long;
use File::HomeDir;

print "hello world";
exit;
```

My default installation on Ubuntu 12.04 did *not* come with all of these modules as standard, but Strawberry Perl for Windows [9] did.

Installing the modules given in Listing 190 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 [8]; 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-5.20.1
cmh:~$ perlbrew switch perl-5.20.1
cmh:~$ sudo apt-get install curl
cmh:~$ curl -L http://cpanmin.us | perl - App::cpanminus
cmh:~$ cpanm YAML::Tiny
cmh:~$ cpanm File::HomeDir
```

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 [9]. 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

[9] Thanks to [7] for this feature!

```
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` 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 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 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 191 are *obsolete* from Version 3.0 onwards.

LISTING 191: 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 192 and 193

LISTING 192: `indentAfterThisHeading` in Version 2.2

```
indentAfterHeadings:
    part:
       indent: 0
       level: 1
```

LISTING 193: `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 194; as of Version 3.0, you would write YAML as in Listing 195 or, if you're using `-m` switch, Listing 196.

LISTING 194: `noAdditionalIndent` in Version 2.2

```
noAdditionalIndent:
    \[: 0
    \]: 0
```

LISTING 195: `noAdditionalIndent` for `displayMath` in Version 3.0

```
specialBeginEnd:
    displayMath:
        begin: '\\\['
        end: '\\\]'
        lookForThis: 0
```

LISTING 196: `noAdditionalIndent` for `displayMath` in Version 3.0

```
noAdditionalIndent:
    displayMath: 1
```