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The aeb-minitoc package Inserting TOCs within a section

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1. Introduction

I was asked by a friend to write a small package to insert a “mini-toc” into the document body, and this is the result of that favor.

2. Required packages and options


This package has been tested for the `book`, `report`, and `article` classes. It uses the \LaTeX core commands for building a table of contents—with or without `hyperref`. One requirement is that if `hyperref` is used, it must be loaded *before* this package, so it can be detected.

There are only two options for this package:

`nomintocs` If this options is in effect, no mini-tocs are created. Useful during document development. The `aeb-minitoc` package reads the `\jobname.toc` file each time it encounters the `\insertminitoc`; using this option reduces compile time. The Boolean switch `\ifMiniToCListings` is set to `false`.¹

`!nominitocs` The negation of the previous option, when `!nominitocs` is in effect, mini-tocs are created. This is a convenience option to make it simple to switch between mini-tocs and no mini-tocs.

When no option is passed, mini-tocs are created.

Warning!  This package modifies the entries in the `\jobname.toc` file. For this package to work as designed, it must be loaded after any other package that modifies the TOC file.²

3. Commands and methods

The few commands this package defines, as well as the discussion of various methods necessary to design your own mini-toc, are presented in this section.

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|---|--|
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3.1. Setting the top and bottom levels

The section title refers to establishing what section entries are to appear in your mini-toc. This can be done automatically or manually. What is meant by the top and bottom levels?

¹Refer to the sample file `minitoc-art.tex` to see how this switch might be used.

²Such packages include `hyperref` and `siunitx`.

- The *top level* is a section name (chapter, part, section, subsection, paragraph, subparagraph) that you want to list the subsections of. For example, this document employs article class, the top most level has been automatically set to section. Thus, within each section (`\section`), a mini-toc can be inserted to list the titles entries for all subsections, subsubsections, paragraphs, and subparagraphs. Section 3 is a `\section`, and I've inserted a mini-toc just after the introductory paragraph.
- The *bottom level* is a section name that is the lowest section (in the hierarchy) that is to be included in the mini-toc. In the table above, the bottom level for an article class is subsubsection.

- **Automatically setting the levels**

The table below displays the automatic default levels.

| class | top-level | bottom-level |
|--------------|------------------|---------------------|
| book | chapter | subsection |
| report | chapter | subsection |
| article | section | subsubsection |

- **Manually setting the levels**

The top and bottom levels may be set with the commands `\TOPLevel{<top-level>}` and `\BTMLLevel{<btm-level>}`, respectively. For example, declaring

```
\TOPLevel{section}
\BTMLLevel{paragraph}
% or alternatively
\TOCLevels{section}{paragraph}
```

in an article class document will include any `\paragraph` title entries as well, provided the `tocdepth` counter is at least 4.

`\TOCLevels{<top-level>}{<btm-level>}` combines the above two commands; the first argument is passed to `\TOPLevel` and the second to `\BTMLLevel`. If an argument in any of the commands mentioned here are empty, that level goes unchanged from the current level setting (for the bottom or top level).

3.2. The `\insertminitoc` command

The main command of this package is,

```
\insertminitoc[<label-name>]
```

When expanded without its optional argument, it defaults to a reference to the most recent section. When the optional argument is used, `<label-name>` is the name of a label set by the special `\mtoclabel` command, described in the paragraph [Referencing the top-level section](#) on page 5.

The `\insertminitoc[⟨label-name⟩` expands to a mini-toc that displays the subsections (subsections here also includes subsections, paragraphs, and subsubparagraphs) of that top-level section down to (and including) the subsection declared as the bottom level in the `\BTMLlevel` (or `\TOClevel`s) command. The top-level section is not listed in the mini-toc.

Placement of the command

- (The ideal or usual placement) Place `\insertminitoc` inside the top-level section and above any other section heading. In this case, no optional parameter is needed. For example, assuming the top-level is ‘section’,

```
\section{My cool topics}
...
\insertminitoc\relax %\relax stops LATEX from looking for optional argument
...
\subsection{The very next heading}
...
```

- (Moving the command elsewhere) There may be a need to place a mini-toc in a less than ideal location. In this case, use the `\mtoclabel{⟨label-name⟩}` command to mark the section and pass the `⟨label-name⟩` as the optional argument. To illustrate, again assume ‘section’ is the top-level for a mini-toc.

```
...
\insertminitoc[myCT]
...
\section{My cool topics}\mtoclabel{myCT}
...
(Other content, including various section headings)
...
\insertminitoc[myCT]
...
```

In the above code, a mini-toc is placed twice, once before the top-level section and once well below it. These techniques are illustrated many times throughout this manual.

Referencing the top-level section. As mentioned in the previous paragraph, you can mark section commands (chapter, part, section, subsection, subsubsection, paragraph, and subparagraph) using a special label command (`\mtoclabel{⟨label-name⟩}`) defined by `aeb-minitoc`. For example,

```
\section{My cool topics}\mtoclabel{myCT}
```

The `\mtoclabel` command also emits the `\label` command,³ thus, you can both reference the above section in the usual manner (`Section~\ref{myCT}`) and reference the section in the optional argument of `\insertminitoc` (`\insertminitoc[myCT]`).

Warning! Do not pass a label name to the optional argument of `\insertminitoc` that has not been declared using `\mtoclabel`.

³`\label` is emitted with the same `⟨label-name⟩`

• **The `minitocfmt` environment**

This environment is used to declare the formatting for the mini-toc entries created by `\insertminitoc`.

```
\begin{minitocfmt}{\langle cmdName \rangle}
\@A{\langle various \rangle} % optional
\declaretocfmt{\langle sec-name \rangle}{\langle various \rangle}
\declaretocfmt{\langle sec-name \rangle*}{\langle various \rangle}
... % additional \declaretocfmt statements
\end{minitocfmt}
```

(OK to use @ in environment)

The purpose of this environment is to define formatting for a mini-toc. The formatting commands are saved in the body of the macro `\langle cmdName \rangle`; expand this macro prior to `\insertminitoc` to get the formatting declared within the environment.

The content of the environment takes two types of commands:

`\@A{\langle various \rangle}` is a command that is not used very often, but is available when needed. The argument `\langle various \rangle` is various commands to support the min-toc being generated. For example, Assuming `hyperref` is loaded and you want to change the color of the page links. What you can do is `\@A{\def\@linkcolor{blue}}`; this defines the link color that `hyperref` will use to color the link. It is done in a group, so it does not affect content outside the environment.

- pg num box width* `\@PW{\langle length \rangle}` Within the argument of `\@A`, you can insert `\@PW{\langle length \rangle}` to set the width of the box that contains the page number (`\@pnumwidth`). The value set by `ℒTEX` is 1.55em.
- dots separation* `\@DS{\langle num \rangle}` The `\langle num \rangle` determines the separation between dots for a TOC entry that uses a dotted rule line. This command is only recognized within the argument of `\@A`. The default is 4.5.
- right margin of title* `\@R{\langle length \rangle}` is a convenience command, it takes its argument and defines the `ℒTEX` command `\@tocrmarg`, which sets the right margin for the sec-title. The length set by `ℒTEX` is 2.55em. The `\langle length \rangle` of `\@R` should be *larger than* the `\langle length \rangle` set by `\@PW`.

`\declaretocfmt{\langle sec-name \rangle}{\langle various \rangle}` This command formats all `\langle sec-name \rangle` (section, subsection, etc.) entries.

A 'typical' table of contents entry has the form:

`\langle sec-num \rangle \langle title-heading \rangle \langle pg-num \rangle`

Should you include sections in your document that have no section number (either by setting `\setcounter{secnumdepth}` to a smaller number or by manually placing a *-section into the table of contents), the `\langle sec-num \rangle` does not appear. For these types of entries, use a *-declaration `\declaretocfmt{\langle sec-name \rangle*}{\langle various \rangle}`.⁴

⁴Refer to sample file `minitoc-art-star.tex` for an example of this.

Within the *⟨various⟩* argument, there are a number of commands that are recognized:

| | |
|------------------------------|---|
| <i>sec num box width</i> | <code>\@W{⟨length⟩}</code> is the width of the box that encloses <i>⟨sec-num⟩</i> . Normally, all lengths are measured in em units (<code>\@W{⟨num⟩em}</code>). The default length is 2.5em |
| <i>use dots</i> | <code>\@D{⟨length⟩}</code> is the amount to indent prior to <i>⟨sec-num⟩</i> . Again, em units preferred (<code>\@D{⟨num⟩em}</code>). When the <code>\@D</code> command is present in the argument, a dotted line is to be used for the entry (this is the norm). If <code>\@D</code> not present, there is an opportunity within the <i>⟨various⟩</i> argument to create a custom entry. See the example A custom entry for <code>\subsubsection</code> on page 11 for more information. |
| <i>no dots</i> | <code>\@B{⟨length⟩}</code> Same as <code>\@D</code> , but no dotted leaders are created. |
| <i>fmt sec num</i> | <code>\@N{⟨fmt⟩}</code> is the formatting for <i>⟨sec-num⟩</i> . You can pass a command with one argument that will operate on the section number; for example, <code>\@N{\textbf}</code> , <code>\@N{\color{blue}}</code> , or <code>\@N{\color{blue}\textbf}</code> . Note that changing the style to bold might require a corresponding change in <code>\@W</code> . |
| <i>fmt title</i> | <code>\@F{⟨fmt⟩}</code> is the formatting for the title heading of the current section; for example, <code>\@F{\bfseries}</code> turns all heading, for this <i>⟨sec-name⟩</i> , bold. |
| <i>fmt pg num</i> | <code>\@P{⟨fmt⟩}</code> is the formatting for the page number (<i>⟨pg-num⟩</i>). You can pass a command with one argument that will operate on the page number. When <code>hyperref</code> is loaded with the <code>colorlinks</code> option, we cannot change the color of the page number (see the discussion of <code>\@A</code> above), but <code>\@P{\textit}</code> changes the numbers to italics. If <code>hyperref</code> is not loaded, <code>\@P{\color{red}\textit}</code> changes page numbers to a red italic. |
| <i>right margin of title</i> | <code>\@R{⟨length⟩}</code> is a convenience command, it takes its argument and defined the \LaTeX command <code>\@tocmarg</code> , which sets the right margin for the sec-title. The length set by \LaTeX is 2.55em. Setting <code>\@R</code> within the <i>⟨various⟩</i> argument of <code>\declaretocfmt</code> affects the current section level as well as all lower section levels. If you want to make this 'local' change, you need to put <code>\@R</code> back to its default of 2.55em locally for other declarations. |
| <i>TOC number</i> | <code>\@E</code> Within the <code>minitoc</code> environment, the command <code>\@E</code> expands to the current TOC entry number of the TOC entry being read in. Read the discussion in Section 5 , page 16, for more information. The paragraph Using <code>\@E</code> for greater formatting control on page 12 discusses one possible use of this command. |
| <i>link anchor</i> | <code>\@L</code> This macro expands to the <code>hyperref</code> anchor of the page entry reference, it is empty if <code>hyperref</code> is not loaded. |
| <i>pg number</i> | <code>\@Pg</code> This macro expands to the page number this entry references. |
| <i>\mtocobble described</i> | A useful macro, as we shall see in the subsequent examples, is <code>\mtocobble</code> , defined by <code>aeb-minitoc</code> . The macro absorbs (gobbles) the next token. For those unfamiliar with such a macro, here is a simple example: My name is D. P. Stor <code>\mtocobble{e}</code> y, this code expands to "D. P. Story". Not so impressive, but the argument of <code>\mtocobble</code> is oftentimes another macro or an expression grouped by braces (<code>{}</code>). For example, |

`\def\dps{ there}Don says ‘Hi\mtocgobble\dps!’`, which expands to “Don says ‘Hi!’” See the paragraph [Using the \@L and \@Pg commands](#) on page 13 for an example of use. The macro is also used in some of the example files.

• [Some examples that illuminate](#)

Having introduced the basic command structure for `aeb-minitoc`, let’s now do some examples. For your convenience, we present a mini-toc of the examples of this section.

| | | |
|----|---|----|
| ¶ | Some basic examples | 8 |
| ¶¶ | First Example. | 8 |
| ¶¶ | The TOC listing on page 8. | 8 |
| ¶¶ | Color the page numbers | 9 |
| ¶¶ | Make section numbers bold | 9 |
| ¶¶ | Make section headings some bold, some blue | 9 |
| ¶ | Some more advanced examples | 10 |
| ¶¶ | Formatting sections with no section number | 10 |
| ¶¶ | Formatting individual title headings | 10 |
| ¶¶ | A custom entry for <code>\subsubsection</code> | 11 |
| ¶¶ | Using <code>\@E</code> for greater formatting control | 12 |
| ¶¶ | No leaders using <code>\@B</code> | 12 |
| ¶¶ | Using the <code>\@L</code> and <code>\@Pg</code> commands | 13 |
| ¶ | Using <code>minitocfmt</code> with the full TOC (<code>\tableofcontents</code>) . . | 14 |

¶ **Some basic examples.** We present some examples that illustrate the special commands described above, these are `\@W`, `\@D`, `\@N`, and `\@F`.

¶¶ **First Example.** We begin with the mini-toc on page 3.

| | | |
|-----|---|---|
| | | <code>\begin{minitocfmt}{\minitocFmt}</code> |
| | | <code>\declaretocfmt{subsectn</code> |
| | | <code>{\@W{2.5em}\@D{0em}}</code> |
| 3.1 | Setting the top and bottom levels | <code>\declaretocfmt{subsubsection}</code> |
| • | Automatically setting the levels | <code>{\@W{1em}\@D{2.5em}}</code> |
| • | Manually setting the levels | <code>\end{minitocfmt}</code> |
| 3.2 | The <code>\insertminitoc</code> command | ... |
| • | The <code>minitocfmt</code> environment | <code>\begin{center}\minitocFmt</code> |
| • | Some examples that illuminate | <code>\begin{minipage}[c]{0.8\linewidth}</code> |
| • | Alternate presentations of the mini-toc . . | <code>\insertminitoc[CandM]</code> |
| | | <code>\end{minipage}</code> |
| | | <code>\end{center}</code> |

Important Rule: The value of `\@D` for one level is (usually) the sum of the values of `\@W` and `\@D` from the one level higher up; thus, for `subsubsection`, I put `\@D{2.5em}`, `2.5em` is the sum of `2.5em` and `0em`, in the `subsection` declarations.

¶¶ **The TOC listing on page 8.** Within the `\subsubsection`, titled ‘[Some examples that illuminate](#)’, place another `\insertminitoc` after we define a new `minitocfmt` environment and reset the TOC levels.

| | | | |
|----|--|----|--|
| ¶ | Some basic examples | 8 | |
| ¶¶ | First Example. | 8 | <code>\TOCLevels{subsubsection}{subparagraph}</code> |
| ¶¶ | The TOC listing on page 8. | 8 | <code>\begin{minitocfmt}{\minitocFmt}</code> |
| ¶¶ | Color the page numbers | 9 | <code>\declaretocfmt{paragraph}</code> |
| ¶¶ | Make section numbers bold | 9 | <code>{\@W{1em}\@D{0em}\@R{1.55em plus 2em}}</code> |
| ¶¶ | Make section headings some bold, some blue | 9 | <code>\declaretocfmt{subparagraph}</code> |
| ¶ | Some more advanced examples | 10 | <code>{\@W{1.5em}\@D{1em}}</code> |
| ¶¶ | Formatting sections with no section number | 10 | <code>\end{minitocfmt}</code> |
| ¶¶ | Formatting individual title headings | 10 | ... |
| ¶¶ | A custom entry for <code>\subsubsection</code> | 11 | <code>\begin{center}\minitocFmt</code> |
| ¶¶ | Using <code>\@E</code> for greater formatting control | 12 | <code>\begin{minipage}[c]{0.8\linewidth}</code> |
| ¶¶ | No leaders using <code>\@B</code> | 12 | <code>\insertminitoc[SExpls]</code> |
| ¶¶ | Using the <code>\@L</code> and <code>\@Pg</code> commands | 13 | <code>\end{minipage}</code> |
| ¶ | Using <code>minitocfmt</code> with the full TOC (<code>\tableofcontents</code>) | 14 | <code>\end{center}</code> |

At this point onward, we will not display the part of the verbatim code containing `\insertminitoc` as they are all similar to the two examples above.

¶¶ **Color the page numbers.** We use the command `\@A` to color the pages. Because `hyperref` is used in this document, we pass a redefinition of the link color through `\@A`.

| | | | |
|-----|---|----|--|
| 3.1 | Setting the top and bottom levels | 3 | <code>\begin{minitocfmt}{\minitocFmt}</code> |
| | • Automatically setting the levels | 4 | <code>\@A{\def\@linkcolor{red}}</code> |
| | • Manually setting the levels | 4 | <code>\declaretocfmt{subsection}</code> |
| 3.2 | The <code>\insertminitoc</code> command | 4 | <code>{\@W{2.5em}\@D{0em}}</code> |
| | • The <code>minitocfmt</code> environment | 6 | <code>\declaretocfmt{subsubsection}</code> |
| | • Some examples that illuminate | 8 | <code>{\@W{1em}\@D{2.5em}}</code> |
| | • Alternate presentations of the mini-toc | 14 | <code>\end{minitocfmt}</code> |

Notice the second line in the right column, highlighted in bold.

¶¶ **Make section numbers bold.** The `\@N` command is used.

| | | | |
|-----|---|----|---|
| 3.1 | Setting the top and bottom levels | 3 | <code>\begin{minitocfmt}{\minitocFmt}</code> |
| | • Automatically setting the levels | 4 | <code>\declaretocfmt{subsection}</code> |
| | • Manually setting the levels | 4 | <code>{\@W{2.5em}\@D{0em}\@N{\textbf}}</code> |
| 3.2 | The <code>\insertminitoc</code> command | 4 | <code>\declaretocfmt{subsubsection}</code> |
| | • The <code>minitocfmt</code> environment | 6 | <code>{\@W{1em}\@D{2.5em}}</code> |
| | • Some examples that illuminate | 8 | <code>\end{minitocfmt}</code> |
| | • Alternate presentations of the mini-toc | 14 | |

¶¶ **Make section headings some bold, some blue.** The `\@F` command is used.

| | | | |
|-----|---|----|--|
| 3.1 | Setting the top and bottom levels | 3 | <code>\begin{minitocfmt}{\minitocFmt}</code> |
| | • Automatically setting the levels | 4 | <code>\declaretocfmt{subsection}</code> |
| | • Manually setting the levels | 4 | <code>{\@W{2.5em}\@D{0em}\@F{\bfseries}}</code> |
| 3.2 | The <code>\insertminitoc</code> command | 4 | <code>\declaretocfmt{subsubsection}</code> |
| | • The <code>minitocfmt</code> environment | 6 | <code>{\@W{1em}\@D{2.5em}\@F{\color{blue}}}</code> |
| | • Some examples that illuminate | 8 | <code>\end{minitocfmt}</code> |
| | • Alternate presentations of the mini-toc | 14 | |

¶¶ **Some more advanced examples.** Now for some trickier examples. These are increasing in complexity.

¶¶ **Formatting sections with no section number.** Again, by ‘section’, all sections are referred to (chapter, part, section, subsection, subsubsection, paragraph, and subparagraph). In section 7, I’ve created a subsection using `\subsection*`. Such a section heading has no section number and is written to the TOC file, by default. First, we need to get it into the TOC file (`\jobname.toc`); this is done as follows:

```
\section{My retirement}\mtoclabel{myRetirement}

\subsection*{Time to get back to it, \dps}
\addcontentsline{toc}{subsection}{Time to get back to it,
 \texorpdfstring{\protect\dps}{dps}}
```

We mark it with `\mtoclabel`. Now we create a `minitocfmt` environment:

```
\begin{minitocfmt}\minitocFmtstar}
\declaretocfmt{subsection*}{\@W{0em}\@D{0em}} % declare a star-section fmt
\end{minitocfmt}
\insMinitocTab[myRetirement] % \insMinitocTab discussed beginning on page 14
{\TOCLevels{section}{subsection}\minitocFmtstar}
```

| | |
|---|----|
| Time to get back to it, DS | 17 |
|---|----|

Any section that does not have a number (more technically, a `\numberline` command its entry in the TOC file), `aeb-minitoc` considers a star-section. Formatting for star-section is done by declaring `\declaretocfmt{<sec-name>*}`, as above.

¶¶ **Formatting individual title headings.** Suppose we wanted to put the section title for section 3.1 in bold font *only*. After some experimentation, I determined the best course for doing this is through the optional argument of the section commands.⁵

The section command for that section is,

```
\subsection[\protect\minorfulltoc{\protect\textbf}
{Setting the top and bottom levels}]{Setting the top and bottom levels}
```

| | | |
|-----|---|---|
| 3.1 | Setting the top and bottom levels <ul style="list-style-type: none"> • Automatically setting the levels • Manually setting the levels | 3 \begin{minitocfmt}\minitocFmt} 4 \@A{\FmtTOCEntry} 4 \declaretocfmt{subsection} |
| 3.2 | The <code>\insertminitoc</code> command <ul style="list-style-type: none"> • The <code>minitocfmt</code> environment • Some examples that illuminate • Alternate presentations of the mini-toc | 4 {\@W{2.5em}\@D{0em}} 6 \declaretocfmt{subsubsection} 8 {\@W{1em}\@D{2.5em}} 14 \end{minitocfmt} |

`\minorfulltoc{<fmt>}{<toc-sec-heading>}`, when inserted into the optional argument, will form the toc-entry. When read in by `\insertminitoc`,

⁵The same effects can be done, perhaps, more simply, by using the techniques of [Using \@E for greater formatting control](#), page 12; however, this technique can make custom changes that `\@E` cannot; refer to the [Question](#) on the next page.

```
\minorfulltoc{<fmt>}{<toc-sec-heading>}
```

expands to `{<fmt>}{<toc-sec-heading>}` when the command `\FmtTOCEntry` is in effect (see next paragraph); when read outside the expansion of `\insertminitoc` (that is, when `\tableofcontents` is read), it expands to `<toc-sec-heading>`, the usual expression.

`\FmtTOCEntry`

The special formatting declared with the `\minorfulltoc` is activated by a special command `\FmtTOCEntry`, passed through the `\@A` command. Refer to the verbatim listing of the last example; shown in bold is `\@A{\FmtTOCEntry}` and causes this alternate formatting to take effect; this is a command not mentioned earlier.⁶ Actually, `\FmtTOCEntry` (and `\NoFmtTOCEntry`) can be used outside the `minitocfmt` environment to turn on or off the special formatting.

Question: How would you modify,

```
\subsection[\protect\minorfulltoc{\protect\textbf}
  {Setting the top and bottom levels}]{Setting the top and bottom levels}
```

so that ‘Setting the *top* and *bottom* levels’ appears in a mini-toc, *without* this same formatted entry appearing in the main table of contents?

See the sample `minitoc-art.tex` for examples of the use of `\minorfulltoc`.

¶¶ **A custom entry for `\subsubsection`.** For the `subsubsection` level, this document uses a bullet (•) instead of a section number. For this example, we present an alternate TOC, consistent with the style the `web` package has used for years.

- 3.1 Setting the top and bottom levels 3
 - Automatically setting the levels, 4
 - Manually setting the levels, 4
- 3.2 The `\insertminitoc` command 4
 - The `minitocfmt` environment, 6
 - Some examples that illuminate, 8
 - Alternate presentations of the mini-toc, 14

The verbatim listing is given below.

```
\begin{minitocfmt}{\minitocFmt}\@A{\@PW{1em}}
\declaretocfmt{subsection}{\@W{2em}\@D{0em}}
\declaretocfmt{subsubsection}{\@W{1em}\@R{1.55em plus 2em}%
  \leftskip2em\rightskip\@tocrmarg {#1},\nobreak{ #2}\allowbreak}
\end{minitocfmt}
```

When neither `\@D` nor `\@B` appears in the `<various>` argument of `\declaretocfmt`, the formatting for the entry must be created using low-level methods. That is what is done in the declaration of `subsubsection`:

```
\declaretocfmt{subsubsection}{\@W{1em}\@R{1.55em plus 2em}%
  \leftskip2em\rightskip\@tocrmarg {#1},\nobreak{ #2}\enspace\allowbreak}
```

⁶In addition to `\FmtTOCEntry` there is also `\NoFmtTOCEntry`.

Important Point: When `\@D` and `\@B` *do not appear*, #1 is the sec-num (in a box) followed by the sec-title; #2 is the page number.

Comments on listing. We reduce this width of the box containing `<page-num>` by passing `\@PW{1em}` through the argument of `\@A`. We set the box width for the section number (a symbol in this case) with `\@W{1em}`. `\@R` takes its argument and defines `\@tocrmarg`, which sets the right margin of the section-title; here, we place a little rubber glue so the title can warp around in a narrow column much better. We set the left and right margins with `\leftskip2em` and `\rightskip\@tocrmarg`; 2em is used for `\leftskip`, since that is the sum of the `\@W` and `\@D` values for the level immediately above it. Next comes `{#1}`, which is the sec-num (a ‘`\bullet`’ in a box of width 1em) followed by the sec-title. We then insert a comma followed by the page number `{ #2}`, followed in turn by a small space and `\allowbreak`.

¶¶ **Using `\@E` for greater formatting control.** The `\@E` command can be used for finer control over the format of a mini-toc, in fact, it allows some logic to be applied. Suppose we want to highlight Section 3.2 and all of its subsections.

| | | |
|-----|---|----|
| 3.1 | Setting the top and bottom levels | 3 |
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The verbatim listing for the `minitocfmt` environment used is listed below.

```
\begin{minitocfmt}{\minitocFmtF}
\declaretocfmt{subsection}
  {\@W{2.5em}\@D{0em}
  \ifthenelse
    {\@E=\mtocref{insertminitoc}} % if this entry is the one we want
    {\@F{\bfseries}}             % apply bold font
    {}}
\declaretocfmt{subsubsection}
  {\@W{1em}\@D{2.5em}
  \ifthenelse % if after insertminitoc and before MPW
    {\@E > \mtocref{insertminitoc}\and\@E < \mtocref{MPW}}
    {\@F{\color{blue}}}} % apply blue color
    {}}
\end{minitocfmt}
```

The sample file `minitoc-art.tex` has similar shenanigans.

¶¶ **No leaders using `\@B`.** We create a mini-toc in the manner of the main TOC, where no dotted leaders are generated for the top-most section heading.

| | |
|---|----------|
| 3.1 Setting the top and bottom levels | 3 |
| • Automatically setting the levels | 4 |
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The verbatim listing is of the `minitocfmt` environment used is,

```
\begin{minitocfmt}{\minitocFmtB}
\declaretocfmt{subsection}
  {\vspace{6pt}\@W{2.5em}\@B{0em}           % no dotted leaders
  \@F{\bfseries}\@N{\bfseries}\@P{\bfseries}} % all elements in bold
\declaretocfmt{subsubsection}
  {\@W{1em}\@D{2.5em}}
\end{minitocfmt}
```

A `\vspace` is used to insert some vertical space above a subsection, `\@F` is used to make the section heading entry bold, `\@N` makes the section number in bold, and `\@P` puts the page number in bold.

¶¶ **Using the `\@L` and `\@Pg` commands.** These two commands can be used to, for example, modify the representation of the page number. Suppose for an entry in the mini-toc on the same page as the mini-toc, we wanted to typeset ‘this page’ rather than the page number.

| | |
|---|-----------|
| ¶ Some basic examples | 8 |
| ¶¶ First Example. | 8 |
| ¶¶ The TOC listing on page 8. | 8 |
| ¶¶ Color the page numbers | 9 |
| ¶¶ Make section numbers bold | 9 |
| ¶¶ Make section headings some bold, some blue | 9 |
| ¶ Some more advanced examples | 10 |
| ¶¶ Formatting sections with no section number | 10 |
| ¶¶ Formatting individual title headings | 10 |
| ¶¶ A custom entry for <code>\subsubsection</code> | 11 |
| ¶¶ Using <code>\@E</code> for greater formatting control | 12 |
| ¶¶ No leaders using <code>\@B</code> | 12 |
| ¶¶ Using the <code>\@L</code> and <code>\@Pg</code> commands | this page |
| ¶ Using <code>minitocfmt</code> with the full TOC (<code>\tableofcontents</code>) | 14 |

The listing for this `minitocfmt` environment is, The verbatim listing is,

```
\begin{minitocfmt}{\minitocFmt}
\@A{\@PW{2.5em}\@R{3.8em}} % adj. width of page number box and right margin of title
\declaretocfmt{paragraph}{\@W{1em}\@D{0em}
  \ifthenelse{\arabic{page}=\@Pg} % if this page = \@Pg create a new link
  {\@P{\small\hyperlink{\@L}{this page}\mtocgobble}}}} % else do nothing
```

```

\declaretocfmt{subparagraph}{\@W{1.5em}\@D{1em}
\ifthenelse{\arabic{page}=\@Pg}
{\@P{\small\hyperlink{\@L}{this page}\mtocgobble}}{}}
\end{minitocfmt}

```

Here, we use a `aeb-minitoc` command: `\mtocgobble` is a public version of the core \LaTeX command `\@gobble`; it simply absorbs (gobbles) its argument. What `\mtocgobble` is doing in the above code is gobbling up, what turns out to be, `hyperref`'s `hyperlink` code to the page number. We replace it with our custom code. The anchor is `\@L`. Seems to work.

¶ **Using `minitocfmt` with the full TOC (`\tableofcontents`).** You will note that the table of contents for this document goes down to the `subsubsection` level, but not paragraph or below. Yet, for the mini-toc on page 8 contains paragraph and subparagraph entries. How is this possible? In the preamble of this document, we have,

```
\setcounter{tocdepth}{5} \setcounter{secnumdepth}{5}
```

Setting `tocdepth` to 5 causes \LaTeX to write table of contents lists to the `subsubparagraph` level. `\setcounter{secnumdepth}{5}` says that we are to have numbers (or identifiers) for sections through the `subsubparagraph` level. When we expand the command `\tableofcontents` it under the following conditions:

```

\setcounter{secnumdepth}{3}\setcounter{tocdepth}{3}
\tableofcontents

```

You can use `\minitocfmt` to design how the main TOC entries are displayed.

```

\bgroup                % make these changes local
\value{secnumdepth}=3 % \setcounter is global, this is local
\value{tocdepth}=3
\minitocMain
\tableofcontents
\egroup

```

where `\minitocMain` is defined through a `minitocfmt` environment.

- **Alternate presentations of the mini-toc**

In all the examples of this manual, a pretty generic presentation of the mini-tocs was used. In this section, some other presentation styles, or just use the class style.

¶ **Predefined presentations.** This document defines and uses several predefined styles, two of which are given below.

```

\newcommand{\insMinitocfbox}[2][]{%
\begin{center}#2
\fbbox{%
\begin{minipage}[c]{0.8\linewidth}
\insertminitoc[#1]
\end{minipage}}
\end{center}
}

\newcommand{\insMinitoctab}[2][]{%
\begin{center}#2
\begin{tabular}{c}\toprule
\begin{minipage}[c]{0.8\linewidth}
\insertminitoc[#1]
\end{minipage}\\\bottomrule
\end{tabular}
\end{center}
}

```

Each command takes two arguments, one of which is optional. The optional argument is passed to the optional argument of `\insertmintoc`, the required argument enters within a group, making its effects local. The required argument is used to pass a (formatting) command defined by one of the `minitocfmt` environments.

The definition on the left encloses the mini-toc in an `\fbox` while the one on the right uses a tabular approach. These two are illustrated in the next two paragraphs.

¶¶ Enclose the mini-toc in an `\fbox`

| | | |
|-----|---|----|
| 3.1 | Setting the top and bottom levels | 3 |
| | • Automatically setting the levels | 4 |
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| 3.2 | The <code>\insertminitoc</code> command | 4 |
| | • The <code>minitocfmt</code> environment | 6 |
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The verbatim listing is,

```
\insMinitocfbox[CandM]
{\TOCLevels{section}{subsubsection}\minitocFmt}
```

The `\TOCLevels` information is not really needed until just prior to the expansion of the command `\insertminitoc`. A good strategy, therefore, is to pass it in the argument of `\insMinitocfbox`.

¶¶ Enclose the mini-toc in a ruled tabular environment

| | | |
|-----|---|----|
| 3.1 | Setting the top and bottom levels | 3 |
| | • Automatically setting the levels | 4 |
| | • Manually setting the levels | 4 |
| 3.2 | The <code>\insertminitoc</code> command | 4 |
| | • The <code>minitocfmt</code> environment | 6 |
| | • Some examples that illuminate | 8 |
| | • Alternate presentations of the mini-toc | 14 |

The verbatim listing is,

```
\insMinitoctab[CandM]
{\TOCLevels{section}{subsubsection}\minitocFmt}
```

The display uses `\toprule` and `\bottomrule`, defined in the `booktabs` package.

4. Counters of importance

There are two counters that affect the creation of a table of contents:

tocdepth The `tocdepth` counter determines the depth of the table of contents. To include paragraphs or subparagraphs, declare `\setcounter{tocdepth}{4}` for paragraph or `\setcounter{tocdepth}{5}` for subparagraphs in the preamble. For more information, read my discussion **Using `minitocfmt` with the full TOC (`\tableofcontents`)** on page 14.

`secnumdepth` determines the depth of the sections that will be numbered. If a section is not numbered and in a mini-toc, it is considered a star-section must be formatted by a `\declaretocfmt{<sec-name>*}{<various>}` statement. Read the discussion in the paragraph **Formatting sections with no section number** on page 10.

5. Methodology

Each time an `\insertminitoc` command is expanded, the `\jobname.toc` file is read in. Any TOC entry prior to the current `<top-level>` are discarded,⁷ all TOC entries are displayed that are within the specified range `\TOCLevels{<top-level>}{<btm-level>}`,⁸ and all entries beginning at the *next* `<top-level>` section are discarded.⁹

If you look at the TOC file for your document (when it uses `aeb-minitoc`), the entries in that file have this form (for a `hyperref` document):

```
\mtocCL {\contentsline {section}
  {\numberline {1}Introduction}{3}{section.1}}{<entry-cnt>}
```

`aeb-minitoc` encloses each entry as the argument of `\mtocCL` (a macro taking two arguments). When expanding the command `\tableofcontents`, `\mtocCL` does nothing.¹⁰ When expanding the command `\insertminitoc`, `\mtocCL` removes any entry that does not contain `\contentsline` and does not display any entry that is not within the `<top-level>` to `<btm-level>` range; it also repositions the `<entry-cnt>` argument for later use. Because of the importance of `\mtocCL`, any package that changes the `\jobname.toc` file should be *loaded prior to aeb-minitoc*.

Warning!

When you use `\mtoclabel{<label-name>}`, that command acquires the most recently defined `<entry-cnt>`, and save that value as a macro. (The value can be retrieved by `\mtocref{<label-name>}`; the use of this macro is normally not needed.) When `<label-name>` is passed to the optional argument of the `\insertminitoc` command, internally `\mtocref{<label-name>}` is expanded, and this value is used to (uniquely) identify the desired top-level section. As an example, we have used `CandM` a number of times, this is the `<label-name>` created by `\mtoclabel` for Section 3; the expansion of `\mtocref{CandM}` is '3'.¹¹ In this way, each item in the table of contents has a unique designator.

6. Sample files

The demonstration files are found in the `examples` folder.

All examples given in this manual can be found in `manual-exmp1s-bullets.tex` and `manual-exmp1s-default.tex`.

⁷The `<top-level>` entry itself is not displayed.

⁸The `<btm-level>` entry is displayed.

⁹Actually, all entries beginning at the next entry in the TOC that has a section level equal to or higher than the `<top-level>` are discarded.

¹⁰It leaves the first argument (the TOC entry) and gobbles the second argument.

¹¹This '3' does not refer to Section 3, but means this is the third TOC entry in the file `\jobname.toc`.

7. My retirement

Time to get back to it, ~~DS~~