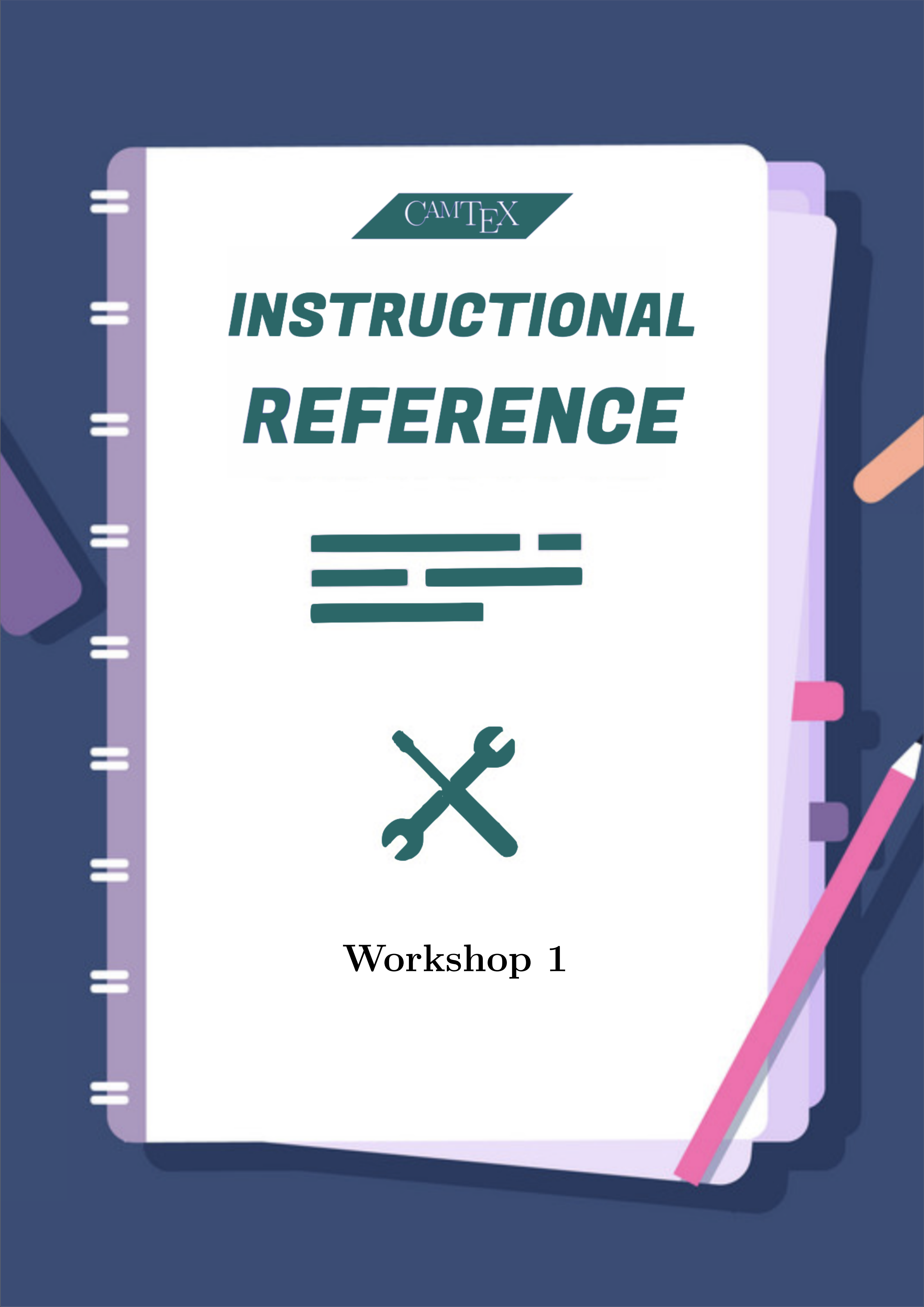

INSTRUCTIONAL REFERENCE

Workshop 1

CAMTEX Workshop 1 — Instructional Reference

1 A Basic Introduction

1.1 Geometry

In the preamble, you might want to import the geometry package with arguments:

```
\usepackage[a4paper, portrait, margin=1.25in]{geometry}
```

It's fairly self-explanatory how to modify this for other paper sizes, margins and orientations.

1.2 Sections

Sections, subsections and subsubsections are declared simply by typing

```
\section{insert title}
\subsection{insert other title}
etc.
```

Note that by default LaTeX doesn't indent the first paragraph of a section/subsection/etc.

1.3 Paragraphs

The `\paragraph` command does not do what you think it does.

Explanation The command places a bolded header at the start of the next paragraph, and also increases the vertical space before it. This may be useful for structuring within ((sub)sub)sections, or for clearly denoting things such as mathematical definitions.

1.4 Dealing with Annoying Characters

1.4.1 Escaping Characters

Certain special characters in LaTeX must be "escaped" to be rendered in text. For example, a curly brace `{` is used to indicate mandatory command arguments or encapsulate text blocks. Most characters are escaped by with a `\` in front (`\{`, `\&`...). Alternatively, `\verb$text here$` lets an entire block of text be parsed verbatim. (The bounding $s may be any character.)

Occasionally, spaces may have to be escaped, again by simply "`\ `". This happens when the compiler isn't sure if the space is "real", or simply separating a command from text. In other words, is "`\textbackslash a`" supposed to produce "`\a`" or "`\ a`"? The compiler thinks the former. To produce the latter, you need "`\textbackslash\ a`".

1.4.2 Quotation Marks

Another common example is quotation marks: “ and ” are created by `` `` `` (two backquotes) and `''` (two single apostrophes/quotes). If you try to use the double quote character, you get ”this”.

1.5 Paragraph Breaks and Line Breaks (No Relation to \paragraph)

Paragraph breaks are automatically triggered by double line breaks in the source, which is the usual case. Alternately, it can be triggered by the command `\par`, as seen—

—here. This is less often used, as a double line break is more convenient. On the other hand, \\ adds an **line** break, as demonstrated here:
It is important to note that **paragraph breaks and line breaks are different.** For one, a line break will not induce indentation as observed above. A line break and a paragraph break may be used together to provide a greater space between paragraphs, as demonstrated here:

More than two line breaks between paragraphs is the same as just two, and most non-paragraph things ignore whitespace in the source outright, giving great organizational freedom to the writer.

1.6 Page Breaks

See `Workshop 1a - Page break demonstration` for this demonstration.

To summarise the key point, there are two common page breaks which work subtly differently. Their implementation is shown below,

```
Content

\newpage

Content

\clearpage

Content
```

The difference was demonstrated during the session by use of another document. They key points to take away are as follows:

- In general, for creating a page break clearpage is the superior option because of how it deals with floats
- clearpage is more rigorous and prevents floats (see workshop 3) ’floating’ onto the next page.
- clearpage allows floats to fall onto a new blank page and starts content on a separate page

- clearpage also begins a new page regardless of the number of columns, in multiple column environments using newpage creates a column break

In most cases you will be fine to us the commands interchangeably, though personal experience leads me to advice use of clearpage wherever possible due to the interaction with floats

2 Making Table of Contents

To automatically generate a table of contents, use the `\tableofcontents` command where you want it to be shown (as below).

Contents

3 Enumerates and Itemizes

3.1 Enumerates

Use `\begin{enumerate}` and `\end{enumerate}` to enclose a numbered (enumerated) list, and `\item` *CONTENT HERE* between them to insert entries—Overleaf autocomplete will get you started. The `\begin` and `\end` syntax is known as an "environment", in this case the "enumerate environment". Note that both inline and display math environments (see workshop 2) can also be used within the enumerate and itemize environments.

1. This is the first item

2. There can be paragraphs in a list. Ut pharetra sit amet aliquam id diam maecenas ultricies. Diam volutpat commodo sed egestas egestas fringilla phasellus faucibus.

   Nisi est sit amet facilisis magna. Semper feugiat nibh sed pulvinar proin gravida hendrerit lectus. Volutpat commodo sed egestas egestas fringilla phasellus faucibus scelerisque eleifend. Sit amet venenatis urna cursus eget nunc scelerisque viverra.

   (a) Creating another enumerate environment within an existing one creates another level of indentation

   (b) The enumeration scheme will also change—in this case, becoming (a), (b)...

3.2 Itemizes

A non-enumerated list is defined similarly, with `\begin{itemize}`, `\end{itemize}` and `\item`—the "itemize environment". Bullet points may be customized by providing an optional argument (enclosed by [ ]) immediately after the `\item` command, containing the desired bullet point.

- This is the default

– Obtained with `\item[--]`. Note that in general `-` gives '-' (hyphen), `--` gives '–' (en-dash), and `---` gives '—' (em-dash).

∘ Obtained with `\item[\(\circ\)]`. The `\( and \)` delimiters denote inline math mode, which will be introduced in the next workshop.

→ Another common symbol used is an arrow, which similarly to the circle is input as `\item[\(\rightarrow\)]`

A text bullet Any arbitrary content can be used in the square brackets. This one is `\item[A text bullet]`.

is formatted badly Note that the alignment when using text strings might not fit nicely and latex will not line break the bullet text for you: `\item[A long text string that is formatted badly]`. Line breaks also do not work to fix this formatting in the usual way

3.3 More Tricks with Enumerate and Itemize

3.3.1 Modifying the Enumeration Scheme With the `enumitem` Package

The enumeration scheme is modified by an argument: `\begin{enumerate}[label=PATTERN]`, where `PATTERN` is the scheme desired. The basic patterns are:

- “`\arabic*`” for Arabic numerals (“1”, “2”...)
- “`\roman*`” for roman numerals (“i”, “ii”...)
- “`\alph*`” for alphabetic (“a”, “b”...)

The patterns can be decorated arbitrarily, such as

- “`(\arabic*)`” for ”(1)”, “(2)”, “(3)”...
- “`\roman*.`” for “1.”, “2.”, “3.”...

An example is shown below, using `(-\roman*-)`:

(-i-) Placeholder item one.

(-ii-) Placeholder item two.

3.3.2 Modifying Spacings With the `enumitem` Package

The `\itemsep` command can be used to modify the list’s item spacing:

```
\begin{enumerate}
    \itemsep 1em
    \item This is the first item
    \item There can be paragraphs in a list.
    ...
\end{enumerate}
```

This requires the enumitem package. You can also use optional arguments “noitemsep” and “nolistsep” to remove the inter-item spacing and the spaces above and below the list respectively:

```
\begin{itemize}[noitemsep, nolistsep]
    \item placeholder text
    \item more placeholder
    ...
\end{itemize}
```

Appendix: Title Pages

There is a variety of ways to build a title page for your LaTeX document. One way is the first-page header used for this instructional reference, and another more stylised and classical way is shown on the next page. Refer to the source of this document to find out more on how to make them.

(Side note: notice how this section isn't numbered. This is achieved by using `\section*{...}` instead of `\section{...}`. There are a lot of similar "star" variant commands, such as `\equation*` and `\align*` and so on, but more on that later.)

The diplayed title page source can be found at: `https://www.latextemplates.com/template/vertical-line-title-page`

The author is credited as: This title page was originally created by Peter Wilson but has been extensively modified for this website by Vel.

A Collection of LaTeX Templates

A predictable subtitle

Gordon Freeman

The Publisher