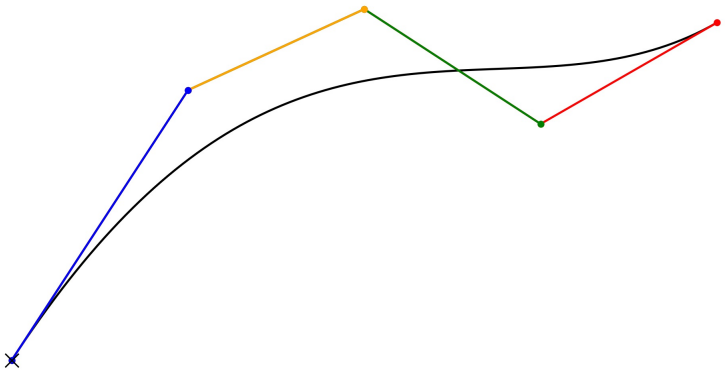
Template Guide

A Subtitle



Your Name

And a note

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OPTIONS CHEATSHEET

Class Option	Function
`title`	makes title page
`toc`	makes table of contents
`index`	makes index of definitions
`center`	centered margins
`authhead`	author replaces part name on odd page headers
`copyright`	creates copyright notice (with links) at bottom of table of contents
`labelbox`	all labels are placed in small, gray boxes
`linkpropthm`	propositions and theorems have unified indexing

I Document Setup

REQUIREMENTS

- There are two ways to make this package recognizable by your computer:
  1. Place `hayektex.cls` in the same folder as your `.tex` project. You will be able to load the class on this project only.
  2. For Windows users, create or locate the directory

     `Users/<You>/texmf/tex/latex/local`

     For Mac users, create or locate the directory

     `Users/<You>/Library/texmf/tex/latex/local`

     Place `hayektex.cls` in the `local` folder. `<You>` should be able to load the class from anywhere on your computer. Check out the Tex stack exchange for help.
- The document class is loaded using `\documentclass[options]{hayektex}`.
- You must declare a title using `\title{...}`, even if you do not print a title page.

PAGE SETUP

Margins

- By default, pages are asymmetric and letter-sized, with margin sizes alternating between $[T, L, B, R] = [1.25, 1, 1, 1.6]$ (even) or $[1.25, 1.6, 1, 1]$ (odd), in inches.
  - To change to symmetric margins, with 1.25 inches on each side, use the `center` class option.
  - Margins can be further customized using `geometry` package commands.

Title Page

- To create a title page, use the `title` class option. The title page can accommodate a few elements:
  - By setting `\subtitle{...}`, a subtitle will appear immediately below the title.
  - By setting `\author{...}`, an author will appear at the bottom of the title page.
  - By setting `\note{...}`, an italicized note will appear at the bottom of the title page and below the author, if defined.
  - By setting `\titlepic[<scale>]{<relative path>}`, a picture will appear in the center of the title page, between the title/subtitle and author/note.

Table of Contents

- To create a table of contents, use the `toc` class option. The table of contents will appear below the title page, if it exists, or as the first page otherwise.
- By default, the table of contents will display parts, sections, and subsections, with leaders on sections, and page numbers displayed for parts and sections.
- To create a copyright notice, use the `copyright` class option. A notice will appear at the bottom of the table of contents, in the format © <Current Year> <Author>.
  - By setting `\date{...}`, one can customize the <Current Year> displayed.
  - By setting `\email{...}`, ✉ will appear to the right of the notice, where the envelope is a link to your email.
  - By setting `\website{...}`, 🌐 will appear to the right of the notice (and the email, if it exists), where the globe is a link to a website.

For demonstration, this guide is set with `\date{2$\tilde{0}$26}`

Index of Definitions

- Using the `index` class option, a link-able index of definitions will appear at the end of the document. "Index of Definitions" will also appear in the table of contents.
- One can customize the index's style by inspecting the `<document name>.ist` file.

HEADERS

- By default, the current part name will appear in odd page headers.
  - Using the class option `authhead`, the author will appear on odd page headers.
- By default, the title of the document will be displayed on even page headers.
  - By setting `\stitle{...}`, a custom (e.g. shorter) title will appear on even page headers in the place of the title defined by `\title{...}`.

II Environments and Labels

DEFINITIONS

DEF 2.1 Definitions are created with the command `\define{...}`, e.g. *a def*. The following features are associated with definitions:

- A label will appear in the margin displaying the definition's ID, in the format <Current Part>.<Definition within Part>.
- A page link is created that targets the location of the definition label. It is accessed using `\deflink{<def name>}`. For example, `\deflink{a def}` generates Def 2.1.
  - By using `\define[<link name>]{<def name>}`, the associated page link is referenced using the link name provided. This is necessary if the definition involves a mathematical symbol.

    DEF 2.2 For example, if *ε-NASH* is created with `\define[eNASH]{$\varepsilon$-NASH}`, we can make a page link with `\deflink{eNASH}`, which generates Def 2.2.
- The definition ID and name will be added to the index page, if it exists.

PROPOSITIONS

Propositions are labeled by inserting `\prop[label offset]` at the start of the line. These labels follow the convention <Current Part>.<Proposition within Part>. For example:

PROP 2.1 `\\prop` $a^2 + b^2 = c^2$ `\\prop[.2cm]` A proposition on the same line, whose label is offset.

PROP 2.2 A page link is created that targets the location of the proposition label. It is accessed using `\proplink{<label ID>}`. For example, `\proplink{2.1}` will generate Prop 2.1.

ENVIRONMENTS

Theorems and Examples

Theorems and examples have dedicated environments, accessed with

```
\begin{theorem}[name]  \\<content> \end{theorem}
```

and

```
\begin{eg}  \item <content> \end{eg}
```

respectively. Notice that the example environment follows similar conventions to the enumerate and itemize environments. In particular, the use of `\item` is necessary. Notice also that `\\` is placed before starting the theorem. For example:

Theorem 2.1 Name

The theorem statement.

Eg. 2.1 Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur vel pretium leo. Fusce consequat posuere mauris. Fusce sem lectus, fermentum nec mauris a, commodo ornare nisi. Curabitur vitae tempus eros. Sed non blandit sem. Nullam at nulla ut ex pretium tincidunt in non libero. Duis non felis nec nisl lacinia hendrerit. Aliquam mattis mollis nisl sed pulvinar.

Eg. 2.2 Another example...

Eg. 2.3 A separate example box.

As with definitions and propositions, we can link to theorems and examples from anywhere in the document.

- `\thmlink{<label ID>}` will create a theorem link. For example, `\thmlink{2.1}` generates Thm 2.1.
- `\eglink{<item ID>}` will create an example link. For example, `\eglink{2.2}` generates Example 2.2.

Proofs

Proofs may be written inside the proof environment, accessed with

```
\begin{proof}[QED symbol][label] <proof> \end{proof}
```

The following are proof examples, given various combinations of environment options.

```
\begin{proof} Default  \end{proof}
```
□

PROOF.

```
\begin{proof}[] No QED  \end{proof}
```

PROOF.

```
\begin{proof}[$\clubsuit$] Custom QED  \end{proof}
```
♣

PROOF.

```
\begin{proof}[\qed][] No Label  \end{proof}
```
□

```
\begin{proof}[\qed][claim a] Custom Label  \end{proof}
```
□

CLAIM A

```
\begin{proof}[$\clubsuit$][claim a] Custom Label and QED  \end{proof}
```
♣

CLAIM A

MARGIN TEXT

- Margin text can be placed using `\mt{...}`. Note that margins are vertically aligned to the line in which `\mt{...}` is invoked. Thus, one must be careful not to overlap margin text-boxes.

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

- `\say{...}` is shorthand for small-caps labels, placed alongside proof, proposition, and definition labels in the opposite margin. Because of how margins are set up, these labels, if used, must be one line maximum.

A THING

LABELS

All labels (generated from definitions, propositions, theorems, or `\say{...}`) may be placed into a small, gray background box using the `labelbox` class option.

EXAMPLE

III Customization

EXTRA COMMANDS AND OPTIONS

- `\code{...}` will style text using monospace font and color seen throughout this guide.
- `\mtr{...}` will allow one to place margin text in the smaller margin.
- The `linkpropthm` class option will unify theorem and proposition indexing. For example, if Part 1 contains one proposition followed by one theorem, they will be labeled Prop 1.1 and Theorem 1.2, respectively. Default behavior would index these as Prop 1.1 and Theorem 1.1.
- `\\` is the default newline character. It is equivalent to `\par\vspace{1.5ex}\noindent`.
- `\thecurpart` contains the name of the current part, without indexing. If one wishes to manually set how the part is displayed in the headers, one changes this macro.
- `$\1$` and `$\0$` will generate $\mathbb{1}$ and $\mathbb{0}$, respectively.

COLORS

X is any any dvipsnames, x11names, or xcolor-supported color:

- The color of the theorem box is controlled using the command `\theoremcolor{X}`.
- Similarly, the color of page links, hyperlinks, and definition hypertargets is controlled using `\accentcolor{X}`.
- The color of the code text styling is controlled using `\codecolor{X}`.

HIDDEN COUNTERS

The following counters are ticking behind the scenes, and can be manipulated if needed.

Element	Counter Name	Default Value	Note
Part	`partNum`	0	
Definition	`defNum`	`partNum`.1	
Proposition	`propNum`	`partNum`.1	
Theorem	`thmNum`	`partNum`.1	
Example	`exampleitem`	`partNum`.1	increments each `\item`
Contents Depth	`tocdepth`	2	up to subsection

MISCELLANEOUS

- You can inspect the `.cls` file for full list of pre-installed packages.
- Some of this template, including its font and small-caps sectioning, is inspired by V.H. Belvadi's essay template.
- To help populate the index: *starting now*, *each word in this sentence is a new definition*. DEF 3.10

Recall that labels are vertically aligned with the line in which the definition is invoked, so they overlap here.

INDEX OF DEFINITIONS

ε-NASH 2.2

a 3.9
a def 2.1

definition 3.11

each 3.3

in 3.5
is 3.8

new 3.10
now 3.2

sentence 3.7
starting 3.1

this 3.6

word 3.4