Weekly Report

Reporter: WunschUnreif   6/5 − 6/11

Emotion: 3 😣   **Progress**: 6 ✔   **Positivity**: 9 🏆

1 Usage

The following line of code loads all functionalities of this document class.

```
\documentclass{DeanReport}
```

The compilation requires X$_{\text{E}}$LATEX. If you also want to display code blocks using the package `minted`, the following command is recommended.

```
xelatex -shell-escape <your tex root file.tex>
```

For generating a bibliography, you need to run the recipe `xe->bib->xe->xe`.

2 Class Options

You can pass options to this class by `\documentclass[<kvpairs>]{DeanReport}`. Here lists all the options defined by DeanReport. Extra arguments will be passed to the base class `article` or `ctexart` depending on the language choice.

Option Name	Choices	Default	Initial	Explanation
`lang`	`en`, `zh`		`en`	Choose the primary language
`showlineno`	`on`, `off`	`on`	`off`	Switch the line numbers
`showbib`	`on`, `off`	`on`	`off`	Switch the bibliography
`bibstyle`			`abbrv`	Set the bibliography style

For example, we may want to set Chinese as the primary language, turn on line numbers and bibliography. Also, we want to set `alpha` as the bibliography style. To achieve this setting, we write the following code.

Listing 2.1 (An example of passing options)

```
\documentclass[
    lang        = zh,
    showlineno,
    showbib,
    bibstyle    = alpha
]{DeanReport}
```

Difference between 'default' and 'initial'   An option may have a default value together with an initial value. The initial value is used if you had never passed the option. On the other hand, the default value is used when you pass the option only with its key but don't specify a value. For example,

```
\documentclass[showbib]{DeanReport}
```

is equivalent to

```
\documentclass[showbib=on]{DeanReport}
```

since the default value of `showbib` is `on`.

If `showbib` isn't passed, e.g. `\documentclass{DeanReport}`, then the initial value `off` will be used by default.

3   Commands and Environments

3.1   Command `\deanset`

You can change any settings of this document class using `\deanset`. The settings, including class options, are organized as a hierarchical key-value database. You may consult the source code of this class to understand each setting. As an example, you can change the title and the default color of code blocks by the following code.

```
\deanset{
    codeblocksettings = {
        color = \accentcolorname,
        caption = Another Listing Title
    }
}
```

> **\deanset ignores groups**
>
> It is important to remember that the effect of `\deanset` is global. No matter where you use this command, its effect will preserve until you call this command again.

3.2   Command `\deaninfo`

You can set the basic information of your report using `\deaninfo`. It takes one argument which is a list of key-value pairs. The entries you can set are listed below.

Entry Name	Choices	Initial	Explanation
`title`		Weekly Report	The title of your report
`author`		Hongzhou Liu	Your name
`start`		[Start Date Here]	Start date of the week
`end`		[End Date Here]	End date of the week
`emotion`	$0, \ldots, 9$	7	Emotion index
`progress`	$0, \ldots, 9$	7	Progress index
`positivity`	$0, \ldots, 9$	7	Positivity index
`bib`		`references`	Bib file name

The information setting of this document is

```
\deaninfo{
    author      = WunschUnreif,
    start       = Jul. 5,
    end         = Jul. 11,
    emotion     = 3,
    progress    = 6,
    positivity  = 9,
}
```

3.3 Box Generating

We provide a fantastic box environment and inline boxes in this class. Detailed description can be found in section 5.

3.4 Environments `codeblock` and `codeblock*`

Code presentation is a ubiquitous need. We provide environment `codeblock` and its starred version `codeblock*` for you. The only difference is that the unstarred version maintains a counter for numbering code blocks while `codeblock*` doesn't provide numbering. They take an optional key-value parameter where you can specify the title and the color with key `title` and `color` respectively.

Note however these environments only provides a box. Inside them you need to use other environments to typeset the code itself. We highly recommend the `minted` package for displaying code.

As an example, the following code

```
\begin{codeblock}[title = Hello World in Python, color = pink]
\begin{minted}[autogobble]{python}
    print("Hello, World!")
\end{minted}
\end{codeblock}
```

yields the block

Listing 3.1 (Hello World in Python)

```
print("Hello, World!")
```

3.5 Theorem-like Environments

We provide environments `theorem`, `lemma`, `corollary`, `definition`, `example`, `remark` just like the standard `amsthm` environments, but implemented independently to support a colorful box. These environments share a common counter which is reset at each section. Each of these environments has a corresponding starred version which doesn't step the counters. As before, these environments take an optional argument which is their title. A demo of these environments are given in section 4.

4 Math

4.1 Formulas

An example:

$$\mathbf{B}(P) = \frac{\mu_0}{4\pi} \int \frac{\mathbf{I} \times \hat{r}'}{r'^2} \mathrm{d}l = \frac{\mu_0}{4\pi} I \int \frac{\mathrm{d}\boldsymbol{l} \times \hat{r}'}{r'^2}$$

Note that the `displaymath` environment (equivalently `\[...\]`) is preferred to the old `$$`.

4.2 Math Fonts

There are several math fonts you can use:

$$ABCDEFGHIJKLMNOPQRSTUVWXYZ \tag{1}$$
$$abcdefghijklmnopqrstuvwxyz \tag{2}$$
$$\mathbf{abcdefghijklmnopqrstuvwxyz} \tag{3}$$
$$\boldsymbol{abcdefghijklmnopqrstuvwxyz} \tag{4}$$
$$\mathsf{ABCDEFGHIJKLMNOPQRSTUVWXYZ} \tag{5}$$
$$\mathcal{ABCDEFGHIJKLMNOPQRSTUVWXYZ} \tag{6}$$
$$\mathscr{ABCDEFGHIJKLMNOPQRSTUVWXYZ} \tag{7}$$

4.3 Theorems

> **Theorem 4.1 (named theorem)**
>
> This is a theorem with name.

> **Theorem 4.2**
>
> No name theorem.

> **Lemma 4.3**
>
> This is a lemma.

> **Corollary 4.4**
>
> This is a corollary.

> **Definition 4.5**
>
> This is a definition.

> **Example 4.6**
>
> This is an example.

> **Remark 4.7**
>
> This is a remark.

> **Remark**
>
> Each theorem-like environment has a starred version which doesn't increase nor show the counter.

Proof. This document class is a trivial result. □

5 Boxes

> **A fantastic box**
>
> You can use the box with environment `deanbox`.

> A deanbox takes 2 optional arguments. The first one is the title of the box. Of course you can get a box without title.

> **Setting box colors**
>
> The second optional argument controls the color of the box. You should only pass the color series name such as `green` or use the theme color such as `\successcolorname`. By default, the box frame and the title bar use the base color and the box background uses the `-lighten-5` variation.

There is also an inline version of boxes using command `\inlbox`. Since inline boxes are preferable to display short codes, we also provide the command `\code` for such purposes, which is equivalent to a `\texttt` inside a `\inlbox`.

6 Enumerate Environments

An `enumerate`:

1. enum 1
2. enum 2
3. enum paragraph Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Large numbers:

9. enum 1
10. enum 2
11. enum paragraph Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

A nested `enumerate`:

1. First item.

2. Nested

    (1) Item 2.1

    (2) Item 2.2

    (3) Level 3:

        (i) Item 2.3.1

      (ii) Item 2.3.2

An `description`:

First first item.

Second second item.

An `itemize`:

- First item.
- Nested

  ◦ Item 2.1

  ◦ Item 2.2

  ◦ Level 3:

      ▪ Item 2.3.1

      ▪ Item 2.3.2

7 Lorem Ipsum

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8 Acknowledgements

We thank the document `clsguide.pdf`[1] for a good instruction on how to write LaTeX classes.

We thank the packages `kvoptions`, `kvdefinekeys` and `kvsetkeys` for providing an easy-to-use key-value method for option managements.

We also thank the package `tcolorbox` for providing a powerful package to draw beautiful boxes.

Finally, we thank the package `minted` together with the engine `Pygmentize` as they provided a modern typeset for codes.

References

[1] The LaTeX3 Project. LaTeX 2_ε for class and package writers, 2006.