Modular LaTeX Documents: **modular**

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1 What problem does this solve?

Suppose you write an article about octopuses. This article might have a sections “Life cycle” and “Habitat”. Now suppose you want to write an article on sea animals and you want to have a section on octopuses. Obviously, we would like to import the octopus article we already wrote as a section of the sea animals article, but this is nontrivial because we need to somehow convert the habitat and lifecycle sections into subsections only when importing the octopus sub-document into the sea animal article! This package provides the `subimportlevel` macro to make that possible.

For a very detailed discussion on the issue of modularity and how this package solves it, see https://danielsank.github.io/tex_modularity.

2 Prerequisite: `coseoul`

This package builds on the `coseoul` package and works in concert with the macros defined in `coseoul`. We recommend reading the `coseoul` documentation to at least get an idea of how it works before reading further here, but we also give a brief review.

Commands like `section` are absolute, i.e. the level depth is determined entirely by the command itself. The `coseoul` package introduces `levelstay`, `leveldown`, `levelup`, and `levelmultiup` commands. These do exactly what they sound like, e.g. `levelstay` makes a new heading at the same level you’re at when you call the command. Here’s a simple example:

```
\documentclass{article}
\begin{document}
\usepackage{coseoul}
\levelstay{This is a section}
\leveldown{This is a subsection}
\leveldown{This is a subsubsection}
\levelmultiup{2}{This is another section}
```

```
\end{document}
```

See the `coseoul` documentation for details, but that's all there really is to `coseoul`.

3 `coseoul` limitations

All listings here are taken directly from files included with this package so that you can access those files and build them yourself to see the examples in action. All paths are relative to `documentation/example`.

Suppose we write an octopus article with two sections:[1]

octopus/article.tex

```
\documentclass{article}
\usepackage{coseoul}
\usepackage{import}
\title{Octopuses}
\begin{document}
\maketitle
This is an article about octopuses.
\subimport*{./}{content.tex}
\end{document}
```

octopus/content.tex

```
\subimport*{./}{habitat.tex}
\subimport*{./}{lifecycle.tex}
```

octopus/habitat.tex

```
\levelstay{Habitat}
Octopuses live in the ocean.
```

octopus/lifecycle.tex

```
\levelstay{Life cycle}
Octopuses start out as plankton, but can grow to
hundreds of pounds.
```

This works great. Now let's try to use the octopus article as a sub-part of an article on sea animals:

article_fail.tex

```
\documentclass{article}
\usepackage{coseoul}
```

---

[1] build `octopus/article.tex` to see the article yourself.

```
\usepackage{import}
\title{Sea Animals}
\begin{document}
\maketitle
This is an article about sea animals.
The first section is about octopusus.
\levelstay{Octopuses}
\subimport*{./octopus/}{content.tex}
\end{document}
```

As you can see by building `article_fail.tex` yourself, the habitat and lifecycle parts come in as sections instead of subsections.

4 `modular` to the rescue

The `modular` package provides the `subimportlevel` macro to solve our problem:

article.tex

```
\documentclass{article}
% modular must be installed for
% this example to build. If it's
% not in your LaTeX distribution,
% install the .sty file manually.
\usepackage{modular}
\title{Sea Animals}
\begin{document}
\maketitle
This is an article about sea animals.
The first section is about octopusus.
\levelstay{Octopuses}
\subimportlevel{./octopus/}{content.tex}{1}
\end{document}
```

When you build `article.tex` you'll see that the habitat and lifecycle bits are subsections under the octopus section, just as we wanted!

The `subimportlevel` macro takes three arguments:

- The relative path of the directory containing the file to import.
- The file to import
- The number of levels to go down when importing. Usually, this will be 0 or 1.