

The `commandoptionals` package

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Abstract

The `commandoptionals` package extends standard LaTeX command definitions. It allows users to define commands with a flexible number of optional and mandatory arguments, checking that the total number does not exceed 9.

1 Introduction

Standard LaTeX `\newcommand` allows for at most one optional argument. The `xparse` package provides powerful tools for defining complex command interfaces. This package, built on top of `xparse`, provides a simplified interface `\newcommandoptionals` to define commands with multiple optional arguments and their default values.

2 Usage

2.1 Loading the Package

```
\usepackage{commandoptionals}
```

2.2 Defining Commands

The main command is `\newcommandoptionals`.

```
\newcommandoptionals{<cmd>}[<num_opt>][<num_mand>][<def_1>]...[<def_n>]{<body>}
```

- `<cmd>`: The command to be defined.
- `<num_opt>`: Number of optional arguments (default 0).
- `<num_mand>`: Number of mandatory arguments (default 0).
- `<def_i>`: Default value for the i -th optional argument. You must provide as many default values as optional arguments specified.
- `<body>`: The definition of the command. Arguments are accessed via `#1`, `#2`, etc. Optional arguments come first, followed by mandatory arguments.

Constraint: $\langle \text{num_opt} \rangle + \langle \text{num_mand} \rangle \leq 9$.

It is possible to have zero optional arguments ($\langle \text{num_opt} \rangle = 0$) or zero mandatory arguments ($\langle \text{num_mand} \rangle = 0$), provided the total sum is at least 0 (an empty command is possible, though perhaps not very useful).

3 Examples

3.1 Two Optional, One Mandatory

```
\newcommandoptionals{\mycmd}[2][1][DefaultA][DefaultB]{%
  Opt1: #1, Opt2: #2, Mand: #3%
}

\mycmd{Hello}           % -> Opt1: DefaultA, Opt2: DefaultB, Mand: Hello
\mycmd[UserA]{Hello}    % -> Opt1: UserA,    Opt2: DefaultB, Mand: Hello
\mycmd[UserA][UserB]{Hello} % -> Opt1: UserA, Opt2: UserB, Mand: Hello
```

4 Starred Command Variants

You can define starred command variants by appending `*` to the command name when defining it. Starred commands allow paragraph breaks (`\par`) in their arguments, which is equivalent to using the `\long` prefix in standard LaTeX.

```
\newcommandoptionals{\mycmd*}[1][0]{%
  Argument: #1%
}

\mycmd*{Some content with

paragraph breaks}
```

When defining a starred variant using `\newcommandoptionals\mycmd*...`, both the regular (`\mycmd`) and starred (`\mycmd*`) versions are created. The starred version accepts paragraph breaks in its arguments, while the regular version does not.