

# 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
```