

# 1 Introduction

This package is an extension of the `keyval` package by David Carlisle [3] and offers more flexible and robust macros for defining and setting keys. Using keys in macro definition has the advantage that the 9 arguments maximum can easily be avoided and that it reduces confusion in the syntax of your macro when compared to using a lot of (optional) arguments. Compare for instance the following possible syntaxes of the macro `\mybox` which might for instance use its arguments to draw some box containing text.

```
\mybox[5pt][20pt]{some text}[red][white][blue]
\mybox[text=red,background=white,frame=blue,left=5pt,right=20pt]{some text}
```

Notice that, to be able to specify the frame color in the first example, the other colors need to be specified as well. This is not necessary in the second example and these colors can get preset values. The same thing holds for the margins.

The idea is that one first defines a set of keys using the tools presented in section 3 in the document preamble or in a package or class. These keys can perform a function with the user input. The way to submit user input to these key macros, is by using one of the user interfaces described in sections 4, 5 and 6. The main user interface is provided by the `\setkeys` command. Using these interfaces, one can simplify macro syntax and for instance define the `\mybox` macro above as follows.

```
\define@key{mybox}{left}{\setlength\myleft{#1}}
\define@key{mybox}{background}{\def\background{#1}}
% and some other keys
\def\mybox{\@ifnextchar[\@mybox{\@mybox[]}}
\def\@mybox[#1]#2{%
  \setkeys{mybox}{#1}%
  % some operations to typeset #2
}
```

Notice that the combination of the two definitions `\mybox` and `\@mybox` can be replaced by `\newcommand\mybox[2] [] { . . . }` when using  $\LaTeX$ .

Both keys defined using the `keyval` and `xkeyval` can be set by this package. The `xkeyval` macros allow for scanning multiple sets (called ‘families’) of keys. This can, for instance, be used to create local families for macros and environments which may not access keys meant for other macros and environments, while at the same time, allowing the use of a single command to (pre)set all of the keys from the different families globally.

The package is compatible to plain  $\TeX$  and redefines several `keyval` macros to provide an easy way to switch between using `keyval` and `xkeyval`. This might be useful for package writers that cannot yet rely on the availability of `xkeyval` in a certain distribution. After loading `xkeyval`, loading `keyval` is prevented to make sure that the extended macros of `xkeyval` will not be redefined. Some internal `keyval` macros are supplied in `keyval.tex` to guarantee compatibility to packages that use those macros. Section 11 provides more information about this issue.

The organization of this documentation is as follows. Section 2 discusses how to load `xkeyval` and what the package does when it is loaded. Section 3 will discuss the macros available to define and manage keys. Section 4 will continue with describing the macros that can set the keys. Section 5 explains special syntax which will allow saving and copying key values. In section 6, the preset system will be introduced. Section 10 will explain how `xkeyval` protects itself for catcode changes of the comma and the equality sign by other packages. The `xkeyval` package also provides commands