The **smartref** package*

Giuseppe Bilotta†

2002/02/28

The purpose of this package is to extend the capability of the the `\ref` command; precisely, whenever a label is set, this package records, along with the label, the values of some other counters (which, can be selected by the user); then, the value of these counters can be recalled, with a command similar to `\pageref`; moreover, this package adds a command (`\s\langle name\rangle ref`) for each counter added, that displays something only if the value of the `\langle name\rangle` counter is changed from when the label is set. For example, let’s say that we are using the `amsbook` class, and we are numbering theorems within sections; when we want to refer to a theorem in another section, same chapter, we just say ‘as in theorem `\ref{zorn}`’; but if we want to refer to a theorem in another chapter, we have to set a label for that chapter and then say ‘as in theorem `\ref{zorn}`, in chapter `\ref{chapterofzorn}`’; if we, later on, move the referenced theorem (or the referencing line) in some other chapter, we might need to update the references; with this package, there’s no need for that: you say, at the beginning of the document:

\addtoreflist{chapter}

and then, every `\label` is recorded alongside with the chapter in which it occurred. When we refer to the theorem, we might now say

```
theorem \ref{zorn}, chapter \chapterref{zorn}
```

if we are sure it will always be in another chapter, or

```
theorem \ref{zorn}\schapterref{zorn}
```

---

*This manual corresponds to `smartref.sty` v1.9, dated 2002/02/28.

bourbaki@bigfoot.com
where the second command prints nothing if the chapter is the same as the current, or
prints ‘, chap. \chapterref{zorn}’ if the chapter has changed. Since this command
sequence is supposed to be used with quite a frequency, it is not-so-short-handed by
\srefchapterref {\sref{name}ref, in general}.

Here’s a complete list of the commands made available by this package.

\addtoreflist{(name)}

This is the first command called: it says that the (name) counter is to be recorded
alongside with all the (following) labels; please use it before defining any label, because
the result is unknown if the SmartReference list changes during use (nothing special
should happen, anyhow; it should work correctly).

The previous command defines a few commands, whose name depends on the counter
chosen. The commands are:

\sget{name}val{{\variable}}{(foo)}

This command gets the value of counter (name) recorded with label (foo), and puts this
value in the chosen {\variable}.

\langle{name}ref{(foo)}

This command prints the value of the counter (name) recorded with label (foo).

\if{name}changed

‘If’ construct for the next two commands:

\is{name}changed{(foo)}

Checks whether the (name) counter is changed from value recorded with (foo), and sets
\langle{name}changed accordingly

\s{name}ref{(foo)}

This command prints nothing if the value of (name) is not different, but prints

, \short{name}name \langle{name}ref{(foo)}

if the value did change; the \short{name}name should be defined by the user. It queries
by using the previous command.

\sref{name}ref{(foo)}

Equivalent of ‘\ref{(foo)}\s{name}ref{(foo)}’.  

2
The only options accepted, as for now, are \texttt{chapter} and \texttt{part}; \texttt{chapter} does the following:

- adds the \texttt{chapter} counter to the smart list
- defines \texttt{\shortchaptername} to be ‘Cap.’ if \texttt{babel} is loaded with option \texttt{italian}, ‘Chap.’ otherwise
- defines \texttt{\smartref} to be \texttt{\srefchapterref}

\texttt{part} does the following:

- adds the \texttt{part} counter to the smart list
- defines \texttt{\shortpartname} to be ‘Parte’ if \texttt{babel} is loaded with option \texttt{italian}, ‘Part’ otherwise
- defines \texttt{\smartref} to be \texttt{\srefpartref} if previously undefined, or adds \texttt{\spartref} to previous definition of \texttt{\smartref} (saved in \texttt{\nopart@smartref}) otherwise (this is mainly to be used after the option \texttt{chapter}).

As of version 1.6, the package comes with a small style file: \texttt{byname.sty};

it can be used alone, or within \texttt{smartref}, when the option \texttt{byname} is used; it adds the command

\texttt{\byname{(label)}}

that can be used when referencing to a section (subsection, etc) by name instead of number. As of version 1.8, the same style file also provides the command \texttt{\byshortname} that does the same as \texttt{\byname}, except that it uses the “short” name (the one provided in square brackets).

Note that the references create by \texttt{smartref} and \texttt{byname} are \textit{not} hyperlink, when \texttt{hyperref} is active. Maybe in the future …

(You can still have “named” links with \texttt{hyperref} using the \texttt{nameref} style file provided with \texttt{hyperref} itself).

∗ ∗ ∗

Please send me any bugs, comments, suggestions, hacks, etc etc etc …

Giuseppe Bilotta

Email: \texttt{bourbaki@bigfoot.com}

Heartily thanks to James Kilfiger (\texttt{mapdn@csv.warwick.ac.uk}) whose consulence has been essential (let me say vital) to the birth of this small package in its first revision (v0.1); it was him who gave me the idea to hack the \texttt{\label} command, and then encouraged me to put the newborn code in a package (and telling me how to do it!); it was also him
that pointed out a potential bug in documents where chapters don’t start on a page on their own (seems that the bug is not present, anyway ...).

∗ ∗ ∗

TODOs:

- Babel: instead of \chaptername (for example), this package uses \shortchaptername, and this is not yet changed by Babel; you can set it up to your short form of chapter. Please send me the short names, so that I can implement them.

- Maybe put an option (long) to make \short\{name\} an alias for \{name\}

- Options: If the option is not recognized, check if it’s a counter, and add it; otherwise, do nothing

- Smartrefs: check for counters that get reset by other counters (section in chapter, etc); maybe link to the \@addtoreset internal command ...

- ByName: refine, and add commands to do both references with a single command

∗ ∗ ∗

History:

v0.1 First release (only did chapter and part).

v1.0 First customizable release.

v1.1 Made it work with HyperRef.

v1.5 Added nameref.sty: reference by name.

v1.6 Changed name to byname.sty, because of name conflict with style file from the HyperRef bundle.

v1.8 Fixed bugs in smartref, changed behaviour for unknown options, fixed bug in byname that actually prevented it from functioning properly.

v1.9 Fixed limitation with AMS-TEX: would not handle \labels within equation because AMS-TEX redefines the \label command for equations. Made \smartref robust.