biokey, the package for precious and flexible identification keys

A. Shipunov*

This package can be used for creating biological identification keys. Different layouts are available.

1 General usage

This is the textual key:

1. It is an animal ... 2.
   - It is a plant ... 3.
2. It is spiny ... Hedgehog
   - It is not very spiny ... Swift
   = It is not spiny at all ... Siskin
3(1). Lots of wood ... Spruce
   - No wood ... Daisy

The interpretation in suggested language is follows:

\begin{biokey}
\Z1. It is an animal \T 2.
\AN It is a plant \T 3.
\Z2. It is spiny \TT Hedgehog
\AN It is not very spiny \TT Swift
\AAN It is not spiny at all \TT Siskin
\ZZ3(1). Lots of wood \TT Spruce
\AN No wood \TT Daisy
\end{biokey}

*e-mail: dactylorhiza at gmail
\end{biokey}

1. It is an animal ........................................... 2.
   - It is a plant ........................................ 3.

2. It is spiny ............................................. Hedgehog
   - It is not very spiny ................................ Swift
   = It is not spiny at all ............................... Siskin

3 (1). Lots of wood ..................................... Spruce
   - No wood ........................................... Daisy

For aesthetics, I recommend that text before \texttt{T} should not end with dot
(with the exception of abbreviations). \texttt{T} and \texttt{TT} are just the same thing, but
second is better to designate names, and first is better for numbers. Sometimes,
these two commands cannot format the paragraph without overfulls, in these
(rare) cases I recommend the \texttt{TTTT} or “old-style” \texttt{TTT} which results are less
precious but require less handwork.
\texttt{Z} and \texttt{ZZ} are different only for the second is used for backreferences, or for
typical in serial zoological keys references for theses and antitheses. These two
commands along with \texttt{AN}, \texttt{AAN}, and (not used in the example above) \texttt{AAAN}
are used also for aesthetic hanging indentation.

Commands \texttt{N}, \texttt{NN} and \texttt{NNN} are for end-level objects (species, for example).
They did not produce leading dots, but justify following object right, next with
some space, or on next line, respectively.

Command \texttt{VT} is for hanging number references. There is also starred vari-
ant, \texttt{VT*}, where dot leader are also protruding outside right text margin.

By default, all \texttt{T}-like commands along with \texttt{N} and \texttt{NN} have the declaration
\texttt{samepage} inside. One can redefine that via \texttt{SameDecl} hook. The most obvious
redefinition is \texttt{relax}.

\texttt{SHRIFTZ} and \texttt{SHRIFTN} are two hooks which are defined by default as
\texttt{relax} (do nothing), so one can redefine them to change the representation
of these number and end-level objects, respectively. For example,
\texttt{\renewcommand{\SGRIFTZ}{\textbf}}
will result in boldface theses numbers.

Several commands designed for commentaries after theses (or antitheses).
\texttt{FK} put the text in footnote size, \texttt{KOM} imitate these, but without number, and
\texttt{VPRAVO} aligned its contents to the right. \texttt{STUP} is a hook for indentation of
first two kinds of comments. By default it is 2em, but one can easily redefine it.
2 "Automatic" keys

This sort of key can put numbers automatically. The example (needs two \LaTeX runs):

\begin{biokey}
\TE{ani} It is an animal \SS{spi}
\AN It is a plant \SS{pla}
\TE{spi} It is spiny \TT Hedgehog
\AN It is not very spiny \TT Swift
\AAN It is not spiny at all \TT Siskin
\SE{pla}{ani} Lots of wood \TT Spruce
\AN No wood \TT Daisy
\end{biokey}

1. It is an animal ........................................ 2.
   − It is a plant ........................................ 3.
2. It is spiny ............................................ Hedgehog
   − It is not very spiny ................................ Swift
   = It is not spiny at all ................................. Siskin
3 (1). Lots of wood ...................................... Spruce
   = No wood ............................................. Daisy

The biggest advantage of this type of key is that it is much easier to correct. It is possible to convert "ordinary" key to "automatic" key and further to HTML, with the help of biokey2html scripts (see documentation). See also how hyper-references working here.

3 Indented keys

And, finally, the different key layout—so-called indented keys:
A. It is an animal
   AA. It is more or less spiny
       AAA. It is very spiny ............ Hedgehog
       BBB. It is not very spiny ............ Swift
       BB. It is not spiny at all ............ Siskin
B. It is a plant
   CC. Lots of wood ................. Spruce
   DD. No wood ................. Daisy
It is more complicated than previous examples, so one may consider the `dichokey` package, but it is much less flexible.