The dnaseq package∗

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1 Introduction

This package allows easy setting of simple dna-sequences in userdefined grouping, with numbering of bases (at the begin of each line.

If you need to typeset alignments, have a look at the texshade-Package.

The main code has been posted by Andreas Matthias <amat@kabsi.at> on de.comp.text.tex and is based by itself on old code from Anselm Lingnau.

2 Usage

2.1 DNA

\DNA \DNA is the main macro of this package. It is used as following:

\DNA! actctgctagtcgatgcat!

where the delimiting character ! can be any normal character.

Within the argument you can use \{<color>} to change the color of your bases. The color names are normal color.sty names. Look at the full example for more info.

2.2 Configuration

\DNAblock The macro \DNAblock stores the desired blocking intervall of your sequence. Just do a \renewcommand{\DNAblock}{<some number>} to change the default of 10.

\DNAreserve The macro defines how much space to reserve for the numbering of bases. To change, do a \renewcommand{\DNAreserve}{<template>} The default template is 0000 allowing for for digit numbering.

∗This file has version number v0.01, last revised 2002/05/20.
3 Example

\begin{minipage}{100pt}
\textcolor{red}{DNA! ACGT'}\textcolor{green}{ACGT'}\textcolor{white}{TGCA'}\textcolor{green}{xs df'}\textcolor{white}{FJKD SLAF}
\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
\end{minipage}

\begin{minipage}{200pt}
\textcolor{red}{DNA! ACGT'}\textcolor{green}{ACGT'}\textcolor{white}{TGCA'}\textcolor{green}{xs df'}\textcolor{white}{FJKD SLAF}
\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
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\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
\end{minipage}

\begin{minipage}{\textwidth}
\textcolor{red}{DNA! ACGT'}\textcolor{green}{ACGT'}\textcolor{white}{TGCA'}\textcolor{green}{xs df'}\textcolor{white}{FJKD SLAF}
\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
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\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
\end{minipage}

\renewcommand{\DNAblock}{5}
\begin{minipage}{\textwidth}
\textcolor{red}{DNA! ACGT'}\textcolor{green}{ACGT'}\textcolor{white}{TGCA'}\textcolor{green}{xs df'}\textcolor{white}{FJKD SLAF}
\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
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\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
\textcolor{red}{DSAIOFDSA AC GT'}\textcolor{white}{ACGT'}\textcolor{green}{TGCA'}\textcolor{green}{xsdf'}\textcolor{white}{FJKDSLAF}
\end{minipage}
4 The code

<dnaseq>
1 \def\DNAblock{10}
2 \def\DNAreserve{0000}\% für 4-stellige Zahlen
3 \%
4 \% registers /counters
5 \%
6 \newlength\bl0cklen
7 \newlength\l0neIn
8 \newlength\t0mpIn
9 \newlength\ch0rwd
10 \newcount\blocks
11 \%
%%% calculate blocks per line
%%% \def\DNAc@lcline{\%\def\DNAblock{1}\%\}\def\DNAreserve{\%\}\settonumber{\textwidth}\settoheight{\dimen@}{I}\settopt{\htst}{\the\dimen@}%% dnabase per line counter\count@=0%% block counter\@tempcnta=0%% total dnabase counter\@tempcntb=0\fboxrule=0pt \fboxsep=0pt\noindent\phantom{\DNAreserve}\llap 1\@DNA% \def\DNAend{1}\def\DNA@end{#1}\bgroup\ttfamily\DNAc@lcline%% insert a space after DNAblock bases\ifnum\count@=\DNAblock\count@=0\ %\advance\@tempcnta by 1\fi%% check for end of sequence or color shift\if\%\DNA@cmp\DNAend\\let\next\egroup%\else\if\%\DNA@cmp\%\DNA@setcolor{1}\%\DNA@end\%\DNA@setcolor{\%\DNA@theolor}{white}\%\DNA@@setcolor{1}\%\DNA@theolor{\%\DNA@setcolor{1}\%\DNA@@setcolor{\%\DNA@end}\%\DNA@setcolor{1}\%\DNA@end%
%%% do the blocking/line breaking
%%% \def\DNAend{1}%
\else
\advance\count@ by 1
\advance\@tempcntb by 1
%%% line break after calculated number of blocks
\ifnum\@tempcnta=\blocks \\
\hskip\z@ \phantom{\DNAreserve} \llap {\the\@tempcntb}\ %
\@tempcnta=0
\fi
\colorbox{\@DNA@thecolor}{\struty#1}\
\penalty0 \let\next\@DNA
\fi
\fi
\fi
\next
\next
\}
</dnaseq>