

jss: A Document Class for Publications in the Journal of Statistical Software

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1 Introduction

The $\text{\LaTeX} 2_{\epsilon}$ document class **jss** is an extension of the standard $\text{\LaTeX} 2_{\epsilon}$ **article** class for publications in the Journal of Statistical Software (JSS, <http://www.jstatsoft.org/>). It provides infrastructure for all four kinds of publications in the JSS: regular articles, code snippets, book reviews and software reviews. Each document requires several declarations to be made in the header (before `\begin{document}`) which are described in Section 2 separately for articles/code snippets and book/software reviews along with some general commands which can be used in all documents.

All documents need to be processed by pdf \LaTeX , some useful information on this is provided in Section 3, which also contains some information on using BIB \TeX . Using BIB \TeX together with the style file **jss.bst** greatly facilitates producing references and citations in the required format.

The actual code for the batch file (**jss.ins**), the driver (**jss.drv**) and the class (**jss.cls**) are briefly described in Section 4. Note, that usually you do not have to read that section when you want to prepare a submission for JSS.

2 Instructions for authors

To use the JSS styles, you have to include the class file **jss.cls**, the logo **jsslogo.jpg** and the BIB \TeX style **jss.bst** in your search path. This can either be your local working directory or in your **texmf** or **localtexmf** tree.

The \LaTeX documents have to include the **jss.cls** first by

```
\documentclass[type]{jss}
```

where *type* can be **article** (which is the default), **codesnippet**, **bookreview** or **softwarereview**. Templates with brief instructions are provided in **article.tex**, **codesnippet.tex**, **bookreview.tex** and **softwarereview.tex** respectively. The corresponding commands used for the header declarations are described in more detail in the following.

By using **jss.cls**, the packages **graphicx**, **a4wide**, **color**, **hyperref**, **ae**, **fancyverb** and **natbib** are loaded automatically. Authors may, of course, include further packages but should not change the page layout or change the font or font encoding. If the package **thumbpdf** is available, its inclusion is encouraged

The titles of JSS publications are capitalized, i.e., in title style, but the section headers are not and should be in sentence-style.

Hint. If you want to use markup in section headers you will usually have to escape it for the pdf bookmarks by giving the text for the bookmark explicitly without markup, e.g.,

```
\section[Calling C++ from R]{Calling \proglang{C++} from \proglang{R}}
```

Hint. Sometimes L^AT_EX places a page break immediately after a (sub)section header. If this occurs in the *final* document please include a `\clearpage` before the header.

Hint. If compilation with pdfT_EX fails with an error at `\begin{document}` the reason is almost surely that some of the declarations in the header have not been made properly. For example, `\Plainauthor`, `\Plaintitle` or `\Plainkeywords` might be missing or still containing markup.

2.1 Articles and code snippets

For JSS articles and code snippets respectively, the following declarations have to be made in the header of the T_EX sources (before `\begin{document}`). See also the template `article.tex` or `codesnippet.tex` respectively.

- `\author` The command `\author` specifies the list of authors. The name of each author should be followed by a linebreak and his affiliation (only the university, in a single line). The authors should be separated by `\And` (instead of `\and`), e.g.,
- ```
\author{Achim Zeileis\\Wirtschaftsuniversit\"at Wien \And
 Second Author\\Plus Affiliation}
```
- `\Plainauthor` The list of authors without affiliations. It needs to be comma-separated and must not contain any markup (bold fonts etc.), e.g.,
- ```
\Plainauthor{Achim Zeileis, Second Author}
```
- `\title` The title of the paper. It should be capitalized and may contain further markup (line breaks, bold fonts, etc.), e.g.,
- ```
\title{A Capitalized Title:\\ With a Package \pkg{foo} in the Subtitle}
```
- `\Plaintitle` The full title without any markup (line breaks, bold fonts etc.). The default is to use `\title`, therefore it needs to be specified only if it is different from `\title`, e.g.,
- ```
\Plaintitle{A Capitalized Title: With a Package foo in the Subtitle}
```
- `\Shorttitle` A shorter version of the title to be used for page headings. The default is to use `\title`, therefore it needs to be specified only if it is different from `\title`, e.g.,
- ```
\Shorttitle{A Capitalized Title}
```
- `\Abstract` Enter the abstract for your article here, e.g.,
- ```
\Abstract{
  The abstract of the article.
}
```
- `\Keywords` A comma-separated list of (at least one) keyword(s) which should not be capitalized, e.g., `\Keywords{keywords, comma-separated, not capitalized}`.
- `\Plainkeywords` The list of keywords without any markup. The default is to use `\Keywords`, therefore it needs to be specified only if it is different from `\Keywords`.
- `\Volume` The JSS volume number in which the article is published, e.g., `\Volume{11}`. Note: you will

be provided with this information upon acceptance of your paper. If it was not accepted (yet), do not use this command.

- `\Issue` The JSS issue number in which the article is published, e.g., `\Issue{9}`. Note: you will be provided with this information upon acceptance of your paper. If it was not accepted (yet), do not use this command.
- `\Month` The month in which the article is published, e.g., `\Month{September}`. Note: you will be provided with this information upon acceptance of your paper. If it was not accepted (yet), do not use this command.
- `\Year` The year in which the article is published, e.g., `\Year{2004}`. Note: you will be provided with this information upon acceptance of your paper. If it was not accepted (yet), do not use this command.
- `\Submitdate` The date of submission for the article, e.g., `\Submitdate{2004-09-29}`. Note: you will be provided with this information upon acceptance of your paper. If it was not accepted (yet), do not use this command.
- `\Acceptdate` The date of acceptance for the article, e.g., `\Acceptdate{2004-09-29}`. Note: you will be provided with this information upon acceptance of your paper. If it was not accepted (yet), do not use this command.
- `\Address` The address of (at least) one author should be given in the following format

```
\Address{
  Achim Zeileis\\
  Institut f\"ur Statistik & Mathematik\\
  Wirtschaftsuniversit\"at Wien\\
  1090 Wien, Austria\\
  E-mail: \email{Achim.Zeileis@wu-wien.ac.at}\\
  URL: \url{http://www.ci.tuwien.ac.at/~zeileis/}
}
```

It is also possible to include your telephone and fax number, by adding them in the format

```
Telephone: +43/1/31336-5053
Fax: +43/1/31336-734
```

before the e-mail address.

Furthermore, if the document is prepared using the `Sweave` functions in R, something like the following line

```
%% need no \usepackage{Sweave.sty}
```

(with ‘%%’) needs to be included in the header.

2.2 Book and software reviews

For JSS book and software reviews respectively, the following declarations have to be made in the header of the \TeX sources (before `\begin{document}`). See also the template `bookreview.tex` or `softwarereview.tex` respectively. Note that some commands might differ between book and software reviews, this is always stated explicitly below.

- `\Reviewer` The command `\Reviewer` specifies the name of the reviewer followed by a linebreak and his affiliation (only the university, in a single line), e.g.,

```
\Reviewer{Frederic Udina\\Pompeu Fabra University}
```

`\Plainreviewer` The name of the reviewer without affiliation. It must not contain any markup (bold fonts etc.), e.g.,

```
\Plainauthor{Frederic Udina}
```

The following five commands are just required for book reviews.

`\Booktitle` The title of the book. It should be capitalized and may contain further markup (line breaks, bold fonts, etc.), e.g.,

```
\Booktitle{Visualizing Categorical Data}
```

`\Bookauthor` Author(s) of the book, e.g.,

```
\Bookauthor{Michael Friendly}
```

If there are several authors they should be comma-separated, and the last author separated by *and*, e.g., `\Bookauthor{A and B}` or `\Bookauthor{A, B and C}`.

`\Pubyear` Year of publication, e.g., `\Pubyear{2000}`.

`\ISBN` ISBN number, e.g., `\ISBN{1-58025-660-0}`.

`\Pages` Number of pages, both arabic and roman (if available), e.g., `\Pages{456}` or `\Pages{xvi + 145}`.

The following command is just required for software reviews.

`\Softwaretitle` The title of the software. It should be capitalized and may contain further markup (line breaks, bold fonts, etc.), e.g.,

```
\Softwaretitle{Aabel 1.5.7}
```

The remaining commands are again required for both book and software reviews.

`\Publisher` Publisher of the book/software, e.g., `\Publisher{SAS Institute Inc.}` or `\Publisher{Gigawiz Ltd. Co.}`.

`\Pubaddress` Address of the publisher of the book/software, e.g., `\Pubaddress{Carey, NC}`.

`\Price` Price of the book/software. For books this might simply be `\Price{USD 69.95}` or `\Price{USD 69.95 (P)}`, but could also distinguish between hardcover and paperback versions `\Price{USD 69.95 (P), USD 89.95 (H)}`. Analogously, for a software it could be `\Price{USD 349 (standard), USD 249 (academic)}`.

`\URL` A URL for the book or software, e.g.,

```
\URL{http://www.math.yorku.ca/SCS/vcd/}
```

If no URL is available, use `\URL{}`.

`\Plaintitle` The full book or software title without any markup (line breaks, bold fonts etc.). The default is to use `\Booktitle` or `\Softwaretitle` respectively, therefore it needs to be specified only if it is different from `\Booktitle` or `\Softwaretitle`, e.g.,

```
\Plaintitle{Visualizing Categorical Data}
```

`\Shorttitle` A shorter version of the book or software title to be used for page headings. The default is to use `\Booktitle` or `\Softwaretitle` respectively, therefore it needs to be specified only if it is different from `\Booktitle` or `\Softwaretitle`, e.g.,

```
\Shorttitle{Visualizing Categorical Data}
```

<code>\Volume</code>	The JSS volume number in which the review is published, e.g., <code>\Volume{11}</code> . Note: you will be provided with this information upon acceptance of your paper.
<code>\Issue</code>	The JSS issue number in which the review is published, e.g., <code>\Issue{9}</code> . Note: you will be provided with this information upon acceptance of your paper.
<code>\Month</code>	The month in which the review is published, e.g., <code>\Month{September}</code> . Note: you will be provided with this information upon acceptance of your paper.
<code>\Year</code>	The year in which the review is published, e.g., <code>\Year{2004}</code> . Note: you will be provided with this information upon acceptance of your paper.
<code>\Submitdate</code>	The date of publication for the review, e.g., <code>\Submitdate{2004-09-29}</code> . Note: you will be provided with this information upon acceptance of your paper.
<code>\Address</code>	The address of (at least) one author should be given in the following format

```

\Address{
  Achim Zeileis\\
  Institut f\"ur Statistik & Mathematik\\
  Wirtschaftsuniversit\"at Wien\\
  1090 Wien, Austria\\
  E-mail: \email{Achim.Zeileis@wu-wien.ac.at}\\
  URL: \url{http://www.ci.tuwien.ac.at/~zeileis/}
}

```

It is also possible to include your telephone and fax number, by adding them in the format

```

Telephone: +43/1/31336-5053
Fax: +43/1/31336-734

```

before the e-mail address.

2.3 Further commands

The `jss` package provides several commands for typesetting names related to software (programming languages, packages, code) and mathematical formulae.

Writing about software

<code>\proglang</code>	This should be used for typesetting the names of programming languages, e.g., <code>\proglang{JAVA}</code> , <code>\proglang{C++}</code> or <code>\proglang{R}</code> . This applies also to programmable environments which also have a GUI like <code>\proglang{SAS}</code> , <code>\proglang{Stata}</code> or <code>\proglang{S-PLUS}</code> .
<code>\pkg</code>	This should be used for typesetting the names of packages, e.g., <code>\pkg{CMregr}</code> , <code>\pkg{MATCH}</code> or <code>\pkg{strucchange}</code> .
<code>\code</code>	This should be used for typesetting code chunks within the text, e.g., <code>\code{plot(1:10)}</code> . This is currently an alias to <code>\texttt</code> and might give problems with special characters. In such cases the code can also be set using <code>\verb</code> , e.g., <code>\verb/print("hello world")/</code> .

Layout of code

`jss.cls` only provides very simple means of including code which are mostly borrowed from **Sweave**. There are three verbatim environments for code: `Code`, `CodeInput` and `CodeOutput`. Furthermore, there is an environment `CodeChunk` which can be put around sequences of `CodeInputs` and `CodeOutputs` to (hopefully) keep L^AT_EX from page-breaking in the middle of a code chunk. In short, there are two options: a) if no distinction between input and output is

necessary, the code is placed between `\begin{Code}` and `\end{Code}`. b) If input and output should be distinguished, this can be done like in the following example.

```
\begin{Code}
\begin{CodeChunk}
\begin{CodeInput}
first input first line
first input second line
\end{CodeInput}
\begin{CodeOutput}
output of first input
\end{CodeOutput}
\begin{CodeInput}
second input
\end{CodeInput}
\begin{CodeOutput}
second output
\end{CodeOutput}
\end{CodeChunk}
\end{Code}
```

An example what this could look like, is the following R code. The first three lines are the input, the rest is output.

```
\begin{CodeChunk}
\begin{CodeInput}
R> data(cars)
R> fm <- lm(dist ~ speed, data = log(cars))
R> summary(fm)
\end{CodeInput}
\begin{CodeOutput}
Call:
lm(formula = dist ~ speed, data = log(cars))

Residuals:
    Min       1Q   Median       3Q      Max
-1.00215 -0.24578 -0.02898  0.20717  0.88289

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
(Intercept)  -0.7297     0.3758  -1.941  0.0581 .
speed         1.6024     0.1395  11.484 2.26e-15 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 0.4053 on 48 degrees of freedom
Multiple R-Squared:  0.7331,    Adjusted R-squared:  0.7276
F-statistic: 131.9 on 1 and 48 DF,  p-value: 2.259e-15
\end{CodeOutput}
\end{CodeChunk}
```

If you prepare your paper using **Sweave** (which is recommended if you describe an R package) do *not* include **Sweave.sty** into your document, the necessary commands are already available within **jss.cls**. To prevent **Sweave** from including **Sweave.sty** automatically you need to include a line like

```
% need no \usepackage{Sweave.sty}
```

(with ‘%%’) into the header of your document.

If this basic infrastructure for typesetting your code is not sufficient, you can also use other \LaTeX packages like the **listings** package.

Mathematical formulae

Commonly used operators like E , VAR , COV , and P should be set using the commands $\backslash E$, $\backslash \text{VAR}$, $\backslash \text{COV}$ and $\backslash \text{Prob}$.

3 Using pdf \TeX and BIB \TeX

Using pdf \TeX

A \LaTeX document (`foo.tex`, say) using `jss.cls` needs to be compiled using pdf \TeX , typically this will be done using either of the following commands:

```
pdflatex foo.tex

texi2dvi --pdf foo.tex

texi2pdf foo.tex
```

If you are not using command line tools but some integrated GUI editor for \LaTeX documents you will have to press the ‘pdf \LaTeX ’ button (as opposed to the ‘ \LaTeX ’ button).

All graphics included into the document have to be in a format pdf \TeX can deal with, i.e., pdf for vector graphics or jpg/png/etc. for bitmaps. If you cannot produce pdf graphics directly but only ps/eps, these can be converted using `ps2pdf` or `epstopdf` (usually preferred).

Hint. If you are used to compiling your documents with standard \LaTeX and then getting automatic reloads of the resulting DVI document in your DVI viewer, which is not possible with PDF documents in many PDF viewers: you might want to look at **xpdf** (Linux) or **gsview** (Windows, see <http://www.cs.wisc.edu/~ghost/gsview/>) which have a reload function.

Hint. If you want to use markup in section headers you will usually have to escape it for the pdf bookmarks by giving the text for the bookmark explicitly without markup, e.g.,

```
\section[Calling C++ from R]{Calling \proglang{C++} from \proglang{R}}
```

Hint. If you know how to produce \LaTeX documents that can be processed with both \LaTeX and pdf \TeX , you can do so if you provide an eps substitute for `jsslogo.jpg` (e.g. an empty or converted `jsslogo.eps`). Note, however, that the final document needs to be processed with pdf \TeX . Neither this manual nor the JSS encourage or support compilation of JSS documents with standard \LaTeX .

References with BIB \TeX

The format for references (e.g., articles, books, software, proceedings) should look like this

Brown RL, Durbin J, Evans JM (1975). “Techniques for Testing the Constancy of Regression Relationships over Time.” *Journal of the Royal Statistical Society B*, **37**, 149–163.

Friendly M (2000). *Visualizing Categorical Data*. SAS Insitute, Carey, NC.

R Development Core Team (2004). *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-00-3, URL <http://www.R-project.org/>.

Urbanek S, Theus M (2003). “**iPlots** – High Interaction Graphics for R.” In K Hornik, F Leisch, A Zeileis (eds.), “Proceedings of the 3rd International Workshop on Distributed Statistical Computing, Vienna, Austria,” ISSN 1609-395X, URL <http://www.ci.tuwien.ac.at/Conferences/DSC-2003/Proceedings/>.

Important. Note, that also the titles of papers are in title style (as opposed to sentence style), i.e., they are capitalized. The first word after a colon ‘:’ is always capitalized. Furthermore, commands like `\proglang` and `\pkg` should also be used for the references. The names of journals or proceeding volumes should not be abbreviated.

The easiest way to achieve this is to use `BIBTEX` together with the style file `jss.bst`. To do so, the references just have to be included in a bib file (`foo.bib`, say) which has to be included at the end of the `LATEX` document by `\bibliography{foo}`. Note, that to obtain references in the format above, the `title` field in your bib file, needs to be capitalized (contrary to the folklore, there are `BIBTEX` styles that rely on this even for `@Article` entries), i.e. the entry `title = {Visualizing Categorical Data}` is correct, while entries like `title = {Visualizing categorical data}` or (even worse) `title = {{Visualizing categorical data}}` are not.

The default in `jss.cls` is to use the `natbib` package with options `authoryear`, `round` and `longnamesfirst`. If you cite any article with six or more authors the latter option should be turned off. This can be done by using the option `shortnames` when loading the `jss.cls` class

```
\documentclass[article,shortnames]{jss}
```


4 The code

4.1 The batch file

First comes the code for creating the batch file `jss.ins` which in turn can be used for producing the package and driver files.

```
1 <*install>
2 \begin{filecontents}{\filename.ins}
3 % Simply TeX or LaTeX this file to extract various files from the source
4 % file 'jss.dtx'.
5 \def\filedate{2004/09/29}
6 \def\batchfile{jss.ins}
7 \input docstrip.tex
8 \generateFile{jss.drv}{t}{\from{jss.dtx}{driver}}
9 \generateFile{jss.cls}{t}{\from{jss.dtx}{class}}
10 \Msg{*****}
11 \Msg{* For documentation, run LaTeX on jss.dtx or jss.drv. *}
12 \Msg{*****}
13 \end{filecontents}
14 </install>
```

4.2 The driver

Next comes the documentation driver file for T_EX, i.e., the file that will produce the documentation you are currently reading. It will be extracted from this file by the `docstrip` program. Since it is the first code in the file one can alternatively process this file directly with L^AT_EX 2_ε to obtain the documentation.

```
15 <*driver>
16 \documentclass{ltxdoc}
17 \providecommand{\file}[1]{\texttt{#1}}
18 \providecommand{\pkg}[1]{\normalfont\fontseries{b}\selectfont #1}}
19 \usepackage{color,hyperref,a4wide}
20 \oddsidemargin1.2cm
21 \textwidth14.2cm
22 \textheight23.3cm
23 \topmargin-.7cm
24 \setlength{\parskip}{0.7ex plus0.1ex minus0.1ex}
25 \setlength{\parindent}{0em}
26 \begin{document}
27   \OnlyDescription
28   \DocInput{jss.dtx}
29 \end{document}
30 </driver>
```

4.3 The class

Next is the main part, the code for the class file.

It requires L^AT_EX 2_ε

```
31 <*class>
32 \NeedsTeXFormat{LaTeX2e}
33 \ProvidesClass{jss}[\filedate\space\fileversion\space jss class by Achim Zeileis]
34 </class>
```

and is based on the `article` class. But before we load the class we declare and process some options. These reflects whether we want to write an article, code snippet, a book re-

view or software review. The `shortnames` option is for loading `natbib` *without* the option `longnamesfirst`.

```

35 <*class>
36 %% options
37 \newif\if@article
38 \newif\if@codesnippet
39 \newif\if@bookreview
40 \newif\if@softwarereview
41 \newif\if@review
42 \newif\if@shortnames
43
44 \@articletrue
45 \@codesnippetfalse
46 \@bookreviewfalse
47 \@softwarereviewfalse
48 \@reviewfalse
49 \@shortnamesfalse
50
51 \DeclareOption{article}{\@articletrue%
52   \@codesnippetfalse \@bookreviewfalse \@softwarereviewfalse}
53 \DeclareOption{codesnippet}{\@articlefalse%
54   \@codesnippettrue \@bookreviewfalse \@softwarereviewfalse}
55 \DeclareOption{bookreview}{\@articlefalse%
56   \@codesnippetfalse \@bookreviewtrue \@softwarereviewfalse}
57 \DeclareOption{softwarereview}{\@articlefalse%
58   \@codesnippetfalse \@bookreviewfalse \@softwarereviewtrue}
59 \DeclareOption{shortnames}{\@shortnamestrue}
60
61 \ProcessOptions
62 \LoadClass[11pt,a4paper,twoside]{article}
63 </class>

```

A few packages are required and the font encoding is specified.

```

64 <*class>
65 %% required packages
66 \RequirePackage{graphicx,a4wide,color,hyperref,ae,fancyvrb}
67 \RequirePackage[T1]{fontenc}
68 </class>

```

The bibliography is generated using `natbib` and the `LATEX` style `jss.bst`.

```

69 <*class>
70 %% bibliography
71 \if@shortnames
72   \usepackage[authoryear,round]{natbib}
73 \else
74   \usepackage[authoryear,round,longnamesfirst]{natbib}
75 \fi
76 \bibpunct{(}{)}{;}{a}{-}{,}
77 \bibliographystyle{jss}
78 </class>

```

Paragraphs are not indented, instead `\parskip` is increased.

```

79 <*class>
80 %% paragraphs
81 \setlength{\parskip}{0.7ex plus0.1ex minus0.1ex}
82 \setlength{\parindent}{0em}
83 </class>

```

Some additional commands are provided for writing about software (code, programming

languages, packages),

```
84 <*class>
85 %% commands
86 \let\code=\texttt
87 \let\proglang=\textsf
88 \newcommand{\pkg}[1]{\normalfont\fontseries{b}\selectfont #1}}
89 </class>
```

for specifying e-mail addresses,

```
90 <*class>
91 \newcommand{\email}[1]{\href{mailto:#1}{\normalfont\texttt{#1}}}
92 </class>
```

and for mathematical notation.

```
93 <*class>
94 \newcommand{\E}{\mathsf{E}}
95 \newcommand{\VAR}{\mathsf{VAR}}
96 \newcommand{\COV}{\mathsf{COV}}
97 \newcommand{\Prob}{\mathsf{P}}
98 </class>
```

To process the meta information we need some new commands: for all publications,

```
99 <*class>
100 %% for all publications
101 \newcommand{\Address}[1]{\def\@Address{#1}}
102 \newcommand{\Plaintitle}[1]{\def\@Plaintitle{#1}}
103 \newcommand{\Shorttitle}[1]{\def\@Shorttitle{#1}}
104 \newcommand{\Plainauthor}[1]{\def\@Plainauthor{#1}}
105 \newcommand{\Volume}[1]{\def\@Volume{#1}}
106 \newcommand{\Year}[1]{\def\@Year{#1}}
107 \newcommand{\Month}[1]{\def\@Month{#1}}
108 \newcommand{\Issue}[1]{\def\@Issue{#1}}
109 \newcommand{\Submitdate}[1]{\def\@Submitdate{#1}}
110 </class>
```

for articles and code snippets,

```
111 <*class>
112 %% for articles and code snippets
113 \newcommand{\Acceptdate}[1]{\def\@Acceptdate{#1}}
114 \newcommand{\Abstract}[1]{\def\@Abstract{#1}}
115 \newcommand{\Keywords}[1]{\def\@Keywords{#1}}
116 \newcommand{\Plainkeywords}[1]{\def\@Plainkeywords{#1}}
117 </class>
```

for book and software reviews,

```
118 <*class>
119 %% for book and software reviews
120 \newcommand{\Reviewer}[1]{\def\@Reviewer{#1}}
121 \newcommand{\Booktitle}[1]{\def\@Booktitle{#1}}
122 \newcommand{\Bookauthor}[1]{\def\@Bookauthor{#1}}
123 \newcommand{\Publisher}[1]{\def\@Publisher{#1}}
124 \newcommand{\Pubaddress}[1]{\def\@Pubaddress{#1}}
125 \newcommand{\Pubyear}[1]{\def\@Pubyear{#1}}
126 \newcommand{\ISBN}[1]{\def\@ISBN{#1}}
127 \newcommand{\Pages}[1]{\def\@Pages{#1}}
128 \newcommand{\Price}[1]{\def\@Price{#1}}
129 \newcommand{\Plainreviewer}[1]{\def\@Plainreviewer{#1}}
130 \newcommand{\Softwaretitle}[1]{\def\@Softwaretitle{#1}}
131 \newcommand{\URL}[1]{\def\@URL{#1}}
132 </class>
```

and for internal use only.

```
133 <*class>
134 %% for internal use
135 \newcommand{\Seriesname}[1]{\def\@Seriesname{#1}}
136 \newcommand{\Hypersubject}[1]{\def\@Hypersubject{#1}}
137 \newcommand{\Hyperauthor}[1]{\def\@Hyperauthor{#1}}
138 \newcommand{\Footername}[1]{\def\@Footername{#1}}
139 \newcommand{\Firstdate}[1]{\def\@Firstdate{#1}}
140 \newcommand{\Seconddate}[1]{\def\@Seconddate{#1}}
141 \newcommand{\Reviewauthor}[1]{\def\@Reviewauthor{#1}}
142 </class>
```

Some defaults for theses commands are specified, which are (hopefully) a useful guidance when using the `jss.cls`.

```
143 <*class>
144 %% defaults
145 \author{Firstname Lastname\Affiliation}
146 \title{Title}
147 \Abstract{---!!!---an abstract is required---!!!---}
148 \Plainauthor{\@author}
149 \Volume{VV}
150 \Year{YYYY}
151 \Month{MMMMM}
152 \Issue{II}
153 \Submitdate{yyyy-mm-dd}
154 \Acceptdate{yyyy-mm-dd}
155 \Address{
156   Firstname Lastname\
157   Affiliation\
158   Address, Country\
159   E-mail: \email{name@address}\
160   URL: \url{http://link/to/webpage/}
161 }
162
163 \Reviewer{Firstname Lastname\Affiliation}
164 \Plainreviewer{Firstname Lastname}
165 \Booktitle{Book Title}
166 \Bookauthor{Book Author}
167 \Publisher{Publisher}
168 \Pubaddress{Publisher's Address}
169 \Pubyear{YYY}
170 \ISBN{x-xxxxx-xxx-x}
171 \Pages{xv + 123}
172 \Price{USD 69.95 (P)}
173 \URL{http://link/to/webpage/}
174 </class>
```

Conditional on the type of document several other defaults and some meta information is stored.

```
175 <*class>
176 \if@article
177   \Seriesname{Issue}
178   \Hypersubject{Journal of Statistical Software}
179   \Plaintitle{\@title}
180   \Shorttitle{\@title}
181   \Plainkeywords{\@Keywords}
182 \fi
183
184 \if@codesnippet
```

```

185 \Seriesname{Code Snippet}
186 \Hypersubject{Journal of Statistical Software -- Code Snippets}
187 \Plaintitle{\@title}
188 \Shorttttitle{\@title}
189 \Plainkeywords{\@Keywords}
190 \fi
191
192 \if@bookreview
193 \Seriesname{Book Review}
194 \Hypersubject{Journal of Statistical Software -- Book Reviews}
195 \Plaintitle{\@Booktitle}
196 \Shorttttitle{\@Booktitle}
197 \Reviewauthor{\@Bookauthor\@
198 \@Publisher, \@Pubaddress, \@Pubyear.\@
199 ISBN~\@ISBN. \@Pages~pp. \@Price.\@
200 \url{\@URL}}
201 \Plainkeywords{}
202 \@reviewtrue
203 \fi
204
205 \if@softwarereview
206 \Seriesname{Software Review}
207 \Hypersubject{Journal of Statistical Software -- Software Reviews}
208 \Plaintitle{\@Softwaretitle}
209 \Shorttttitle{\@Softwaretitle}
210 \Booktitle{\@Softwaretitle}
211 \Reviewauthor{\@Publisher, \@Pubaddress. \@Price.\@
212 \url{\@URL}}
213 \Plainkeywords{}
214 \@reviewtrue
215 \fi
216
217 \if@review
218 \Hyperauthor{\@Plainreviewer}
219 \Keywords{}
220 \Footername{Reviewer}
221 \Firstdate{\textit{Published:} \@Submitdate}
222 \Seconddate{}
223 \else
224 \Hyperauthor{\@Plainauthor}
225 \Keywords{---!!!---at least one keyword is required---!!!---}
226 \Footername{Affiliation}
227 \Firstdate{\textit{Submitted:} \@Submitdate}
228 \Seconddate{\textit{Accepted:} \@Acceptdate}
229 \fi
230 \end{class}

```

For typesetting of code some basic infrastructure along the lines of Sweave is provided. First, the Sweave commands are provided explicitly,

```

231 \begin{class}
232 %% Sweave(-like)
233 \DefineVerbatimEnvironment{Sinput}{Verbatim}{fontshape=s1}
234 \DefineVerbatimEnvironment{Soutput}{Verbatim}{}
235 \DefineVerbatimEnvironment{Scode}{Verbatim}{fontshape=s1}
236 \newenvironment{Schunk}{}{}
237 \end{class}

```

and analogous commands with more neutral names for general pieces of code.

```

238 \begin{class}
239 \DefineVerbatimEnvironment{Code}{Verbatim}{}

```

```

240 \DefineVerbatimEnvironment{CodeInput}{Verbatim}{fontshape=s1}
241 \DefineVerbatimEnvironment{CodeOutput}{Verbatim}{}
242 \newenvironment{CodeChunk}{}{}
243 \setkeys{Gin}{width=0.8\textwidth}
244 \end{class}

```

The header for all JSS publications has the logo `jsslogo.jpg` along with the publication information.

```

245 \begin{class}
246 %% new \maketitle
247 \def\@myoddhead{
248   {\color{white} JSS}\[-1.42cm]
249   \hspace{-2em} \includegraphics[height=23mm,keepaspectratio]{jsslogo} \hfill
250   \parbox[b][23mm][118mm]{\hrule height 3pt
251     \center{
252       {\fontfamily{pzc} \fontsize{28}{32} \selectfont Journal of Statistical Software}
253     }
254     \vfill
255     {\it \small \@Month{ } \@Year, Volume~\@Volume, \@Seriesname~\@Issue.%
256       \hfill \href{http://www.jstatsoft.org/}{http://www.jstatsoft.org/}}}\[0.1cm]
257   \hrule height 3pt}
258 \end{class}

```

This header is then used in the re-defined `\maketitle`:

```

258 \begin{class}
259 \if@review
260   \renewcommand{\maketitle}{\@oddhead{\@myoddhead}\[3\baselineskip]
261     {\large
262       \noindent
263       Reviewer: \@Reviewer
264       \vspace{\baselineskip}
265       \hrule
266       \vspace{\baselineskip}
267       \textbf{\@Booktitle}
268       \begin{quotation} \noindent
269         \@Reviewauthor
270       \end{quotation}
271       \vspace{0.7\baselineskip}
272       \hrule
273       \vspace{1.3\baselineskip}
274     }
275   }
276   \thispagestyle{empty}
277   \markboth{\centerline{\@Shorttitle}}{\centerline{\@Hypersubject}}
278   \pagestyle{myheadings}
279 \else
280   \def\maketitle{\@oddhead{\@myoddhead} \par
281     \begin{group}
282       \def\thefootnote{\fnsymbol{footnote}}
283       \def\@makefnmark{\hbox to 0pt{$^{\@thefnmark}$}\hss}
284       \long\def\@makefntext##1{\parindent 1em\noindent
285         \hbox to 1.8em{\hss $\m@th ^{\@thefnmark}$}\##1}
286       \@maketitle \@thanks
287     \end{group}
288     \setcounter{footnote}{0}
289     \thispagestyle{empty}
290     \markboth{\centerline{\@Shorttitle}}{\centerline{\@Hypersubject}}
291     \pagestyle{myheadings}
292   }
293   \let\maketitle\relax \let\@maketitle\relax

```

```

295 \gdef\@thanks{}\gdef\@author{}\gdef\@title{}\let\thanks\relax
296 }
297
298 \def\@maketitle{\vbox{\hsize\textwidth \linewidth\hsize \vskip 1in
299 {\centering
300 {\LARGE\bf \@title\par}
301 \def\And{\end{tabular}\hfil\linebreak[0]\hfil
302 \begin{tabular}[t]{c}\large\bf\rule{\z@}{24pt}\ignorespaces}%
303 \begin{tabular}[t]{c}\large\bf\rule{\z@}{24pt}\@author\end{tabular}%
304 \vskip 0.3in minus 0.1in
305 \hrule
306 \begin{abstract}
307 \@Abstract
308 \end{abstract}}
309 \textit{Keywords}:~\@Keywords.
310 \vskip 0.1in minus 0.05in
311 \hrule
312 \vskip 0.2in minus 0.1in
313 }}
314 \fi
315 \</class>

```

The appearance of sections, subsections and subsubsections is controlled by

```

316 \<{*class}
317 %% sections, subsections, and subsubsections
318 \newlength{\preXLskip}
319 \newlength{\preLskip}
320 \newlength{\preMskip}
321 \newlength{\preSskip}
322 \newlength{\postMskip}
323 \newlength{\postSskip}
324 \setlength{\preXLskip}{1.8\baselineskip plus 0.5ex minus 0ex}
325 \setlength{\preLskip}{1.5\baselineskip plus 0.3ex minus 0ex}
326 \setlength{\preMskip}{1\baselineskip plus 0.2ex minus 0ex}
327 \setlength{\preSskip}{.8\baselineskip plus 0.2ex minus 0ex}
328 \setlength{\postMskip}{.5\baselineskip plus 0ex minus 0.1ex}
329 \setlength{\postSskip}{.3\baselineskip plus 0ex minus 0.1ex}
330
331
332 \newcommand{\jsssec}[2][default]{\vskip \preXLskip%
333 \pdfbookmark[1]{#1}{Section.\thesection.#1}%
334 \refstepcounter{section}%
335 \centerline{\textbf{\Large \thesection. #2}} \nopagebreak
336 \vskip \postMskip \nopagebreak}
337 \newcommand{\jsssecnn}[1]{\vskip \preXLskip%
338 \centerline{\textbf{\Large #1}} \nopagebreak
339 \vskip \postMskip \nopagebreak}
340
341 \newcommand{\jsssubsec}[2][default]{\vskip \preMskip%
342 \pdfbookmark[2]{#1}{Subsection.\thesubsection.#1}%
343 \refstepcounter{subsection}%
344 \textbf{\large \thesubsection. #2} \nopagebreak
345 \vskip \postSskip \nopagebreak}
346 \newcommand{\jsssubsecnn}[1]{\vskip \preMskip%
347 \textbf{\large #1} \nopagebreak
348 \vskip \postSskip \nopagebreak}
349
350 \newcommand{\jsssubsubsec}[2][default]{\vskip \preSskip%
351 \pdfbookmark[3]{#1}{Subsubsection.\thesubsubsection.#1}%
352 \refstepcounter{subsubsection}%

```

```

353 {\large \textit{#2}} \nopagebreak
354 \vskip \postSskip \nopagebreak}
355 \newcommand{\jsssubsubsecnn}[1]{\vskip \preSskip%
356 {\textit{\large #1}} \nopagebreak
357 \vskip \postSskip \nopagebreak}
358
359 \newcommand{\jsssimplesec}[2][default]{\vskip \preLskip%
360 %% \pdfbookmark[1]{#1}{Section.\thesection.#1}%
361 \refstepcounter{section}%
362 \textbf{\large #1} \nopagebreak
363 \vskip \postSskip \nopagebreak}
364 \newcommand{\jsssimplesecnn}[1]{\vskip \preLskip%
365 \textbf{\large #1} \nopagebreak
366 \vskip \postSskip \nopagebreak}
367
368 \if@review
369 \renewcommand{\section}{\secdef \jsssimplesec \jsssimplesecnn}
370 \renewcommand{\subsection}{\secdef \jsssimplesec \jsssimplesecnn}
371 \renewcommand{\subsubsection}{\secdef \jsssimplesec \jsssimplesecnn}
372 \else
373 \renewcommand{\section}{\secdef \jsssec \jsssecnn}
374 \renewcommand{\subsection}{\secdef \jsssubsec \jsssubsecnn}
375 \renewcommand{\subsubsection}{\secdef \jsssubsubsec \jsssubsubsecnn}
376 \fi
377 \end{class}

```

All JSS publications also have a footer with a somewhat extended publication information preceded by the address of the author/reviewer.

```

378 \begin{class}
379 %% footer
380 \newlength{\footerskip}
381 \setlength{\footerskip}{2.5\baselineskip plus 2ex minus 0.5ex}
382
383 \newcommand{\makefooter}{%
384 \vspace{\footerskip}
385
386 \begin{samepage}
387 \textbf{\large \@Footername: \nopagebreak}\hspace{.3\baselineskip} \nopagebreak
388 \@Address \nopagebreak
389 \vfill
390 \hrule \nopagebreak
391 \vspace{.1\baselineskip}
392 {\fontfamily{pzc} \fontsize{13}{15} \selectfont Journal of Statistical Software}
393 \hfill
394 \url{http://www.jstatsoft.org/}\hspace{.3\baselineskip} \nopagebreak
395 published by the American Statistical Association
396 \hfill
397 \url{http://www.amstat.org/}\hspace{.3\baselineskip} \nopagebreak
398 {Volume~\@Volume, \@Seriesname~\@Issue}
399 \hfill
400 \@Firstdate\hspace{.3\baselineskip} \nopagebreak
401 {\@Month{}} \@Year}
402 \hfill
403 \@Seconddate \nopagebreak
404 \vspace{.3\baselineskip}
405 \hrule
406 \end{samepage}
407 }
408 \end{class}

```


The hypersetup uses some modified colors

```
409 <*class>
410 %% colors
411 \definecolor{Red}{rgb}{0.7,0,0}
412 \definecolor{Blue}{rgb}{0,0,0.8}
413 </class>
```

and is then defined by

```
414 <*class>
415 \if@review
416   \hypersetup{%
417     hyperindex = {true},
418     colorlinks = {true},
419     linktocpage = {true},
420     plainpages = {false},
421     linkcolor = {Blue},
422     citecolor = {Blue},
423     urlcolor = {Red},
424     pdfstartview = {Fit},
425     pdfpagemode = {None},
426     pdfview = {XYZ null null null}
427   }
428 \else
429   \hypersetup{%
430     hyperindex = {true},
431     colorlinks = {true},
432     linktocpage = {true},
433     plainpages = {false},
434     linkcolor = {Blue},
435     citecolor = {Blue},
436     urlcolor = {Red},
437     pdfstartview = {Fit},
438     pdfpagemode = {UseOutlines},
439     pdfview = {XYZ null null null}
440   }
441 \fi
442 </class>
```

The information for the hyper summary requires some information which has not been processed before the beginning of the document. Therefore, we need a second `\hypersetup`.

```
443 <*class>
444 \AtBeginDocument{
445   \hypersetup{%
446     pdfauthor = {\@Hyperauthor},
447     pdftitle = {\@Plaintitle},
448     pdfsubject = {\@Hypersubject},
449     pdfkeywords = {\@Plainkeywords}
450   }
451 }
452 </class>
```

Finally we put the header at the beginning of the document and the footer at the end of it.

```
453 <*class>
454 \AtBeginDocument{\maketitle}
455 \AtEndDocument{\makefooter}
456 </class>
```