

# The Org-article LaTeX class

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2010-09-18 Sat

## Contents

<b>1</b>	<b>Org-article class</b>	<b>1</b>
1.1	How to use this Org-mode document . . . . .	1
1.2	Org-mode $\LaTeX$ export setup . . . . .	2
1.3	Examples . . . . .	4
1.4	The class file . . . . .	5
1.4.1	Identification part . . . . .	5
1.4.2	Initial code part . . . . .	6
1.4.3	Declaration of options part . . . . .	6
1.4.4	Execution of options part . . . . .	6
1.4.5	Package loading part . . . . .	6
1.4.6	Class code part . . . . .	7
1.5	$\LaTeX$ packages . . . . .	7
1.5.1	Article base class options . . . . .	7
1.5.2	Org-mode default packages . . . . .	9
1.5.3	Font packages . . . . .	20
1.5.4	Other packages . . . . .	22

## 1 Org-article class

This file uses Babel to tangle a  $\LaTeX$  class named `org-article.cls`. The class provides all of the  $\LaTeX$  packages used by the Org-mode  $\LaTeX$  exporter. The class accepts numerous options, which the user can set either in `.emacs`, for default use with all `org-article` exports, or within the Org-mode file using `#+LaTeX_CLASS_OPTIONS:`.

**Default packages** Options to keep individual  $\LaTeX$  packages from loading make it somewhat easier to modify which  $\LaTeX$  packages are loaded during the processing of  $\LaTeX$  code exported by Org-mode.

**Fonts** The package also implements several choices of fonts and takes steps to ensure that the fonts don't clash with the symbol font files that Org-mode depends upon to typeset org-entities.

**Listing themes** The class provides pre-defined themes for formatting source code listings, which can be used as is, or used as a basis for minor modifications.

**Compact lists** Facilities to typeset lists with less vertical space and to alter line spacing are also provided.

## 1.1 How to use this Org-mode document

You might be able to get the Org-mode document from GitHub using the following shell command, which works for me:

```
git clone git@github.com:tsdye/org-article.git
```

Alternatively, this might work for you:

```
git clone git://github.com/tsdye/org-article.git
```

This will create a sub-directory, org-article, initialize the git repository and download the file article-class.org as part of the repository. The Org-mode document can be tangled to produce the org-article.cls file. This is done by running org-babel-tangle against the file, either by `M-x org-babel-tangle RET` or `C-c C-v [C-]t`.

The resulting org-article.cls file should then be moved where  $\LaTeX$  can find it. In  $\LaTeX$  setups that conform to the Tex Directory Structure, this might be path/to/texmf-local/tex/latex/base. Once the file has been placed in an appropriate directory it is often the case that the directory database, such as the one maintained by Kpathsea, must then be updated. The following shell commands work on my OS-X system with the MacTeX distribution:

```
sudo cp org-article.cls /usr/local/texlive/texmf-local/tex/latex/base/  
sudo mktexlsr  
kpsewhich org-article.cls
```

## 1.2 Org-mode $\LaTeX$ export setup

There are two ways to setup org-article.cls and your choice will probably depend on the value of the variable org-export-latex-packages-alist. If this variable is nil (or it refers to packages that you always want loaded), then the following setup should work for you. It asks Org-mode **not** to load the default packages, because these are loaded by org-article.cls. Then, it loads the packages in org-export-latex-packages-alist, which should consist of a single entry for the inputenc package. Org-mode automatically sets the input encoding based on the status of the Org-mode buffer being exported, which it can't do if it is loaded by org-article.cls. Finally, any packages specified in the Org-mode buffer are loaded (the [EXTRA] argument).

The org-article.cls setup for the case when org-export-latex-packages-alist is nil:

```

(add-to-list 'org-export-latex-packages-alist
  '(("AUTO" "inputenc" t)))
(add-to-list 'org-export-latex-classes
  '("org-article-section"
    "\\documentclass{org-article}
    [NO-DEFAULT-PACKAGES]
    [PACKAGES]
    [EXTRA]"
    ("\\section{%s}" . "\\section*{%s}")))
(add-to-list 'org-export-latex-classes
  '("org-article-subsection"
    "\\documentclass{org-article}
    [NO-DEFAULT-PACKAGES]
    [PACKAGES]
    [EXTRA]"
    ("\\section{%s}" . "\\section*{%s}")
    ("\\subsection{%s}" . "\\subsection*{%s}")))
(add-to-list 'org-export-latex-classes
  '("org-article-subsubsection"
    "\\documentclass{org-article}
    [NO-DEFAULT-PACKAGES]
    [PACKAGES]
    [EXTRA]"
    ("\\section{%s}" . "\\section*{%s}")
    ("\\subsection{%s}" . "\\subsection*{%s}")
    ("\\subsubsection{%s}" . "\\subsubsection*{%s}")))
(add-to-list 'org-export-latex-classes
  '("org-article-paragraph"
    "\\documentclass{org-article}
    [NO-DEFAULT-PACKAGES]
    [PACKAGES]
    [EXTRA]"
    ("\\section{%s}" . "\\section*{%s}")
    ("\\subsection{%s}" . "\\subsection*{%s}")
    ("\\subsubsection{%s}" . "\\subsubsection*{%s}")
    ("\\paragraph{%s}" . "\\paragraph*{%s}")))
(add-to-list 'org-export-latex-classes
  '("org-article-subparagraph"
    "\\documentclass{org-article}
    [NO-DEFAULT-PACKAGES]
    [PACKAGES]
    [EXTRA]"

```

```

("\\section{%s}" . "\\section*{%s}")
("\\subsection{%s}" . "\\subsection*{%s}")
("\\subsubsection{%s}" . "\\subsubsection*{%s}")
("\\paragraph{%s}" . "\\paragraph*{%s}")
("\\subparagraph{%s}" . "\\subparagraph*{%s}"))

```

If, for some reason, `org-export-latex-packages-alist` is not nil, and it includes packages that you don't want always loaded then the following setup should work.

```

(add-to-list 'org-export-latex-classes
  ("org-article-section"
   "\\documentclass{org-article}
   [NO-DEFAULT-PACKAGES]
   [EXTRA]"
   ("\\section{%s}" . "\\section*{%s}")))
(add-to-list 'org-export-latex-classes
  ("org-article-subsection"
   "\\documentclass{org-article}
   [NO-DEFAULT-PACKAGES]
   [EXTRA]"
   ("\\section{%s}" . "\\section*{%s}")
   ("\\subsection{%s}" . "\\subsection*{%s}")))
(add-to-list 'org-export-latex-classes
  ("org-article-subsubsection"
   "\\documentclass{org-article}
   [NO-DEFAULT-PACKAGES]
   [EXTRA]"
   ("\\section{%s}" . "\\section*{%s}")
   ("\\subsection{%s}" . "\\subsection*{%s}")
   ("\\subsubsection{%s}" . "\\subsubsection*{%s}")))
(add-to-list 'org-export-latex-classes
  ("org-article-paragraph"
   "\\documentclass{org-article}
   [NO-DEFAULT-PACKAGES]
   [EXTRA]"
   ("\\section{%s}" . "\\section*{%s}")
   ("\\subsection{%s}" . "\\subsection*{%s}")
   ("\\subsubsection{%s}" . "\\subsubsection*{%s}")
   ("\\paragraph{%s}" . "\\paragraph*{%s}")))
(add-to-list 'org-export-latex-classes
  ("org-article-subparagraph"
   "\\documentclass{org-article}

```

```
[NO-DEFAULT-PACKAGES]
[EXTRA]"
("\\section{%s}" . "\\section*{%s}")
("\\subsection{%s}" . "\\subsection*{%s}")
("\\subsubsection{%s}" . "\\subsubsection*{%s}")
("\\paragraph{%s}" . "\\paragraph*{%s}")
("\\subparagraph{%s}" . "\\subparagraph*{%s}"))
```

In this case, you will need to specify the `inputenc` package in the Org-mode file:

```
#+LATEX_HEADER: \usepackage[latin1]{inputenc}
```

### 1.3 Examples

The functionality of `org-article.cls` can be demonstrated with the following two examples of pdf output generated by Org-mode  $\LaTeX$  export of this Org-mode file. In the first, these two lines were included at the top of the Org-mode file:

```
#+LaTeX_CLASS: org-article-subsubsection
#+LaTeX_CLASS_OPTIONS: [article,letterpaper,times,12pt,listings-bw,microtype]
```

The resulting pdf file is typeset with the standard  $\LaTeX$  `article.cls` on 8.5 x 11 in. paper, using Times, Helvetica, and Courier fonts with a 12 point base size. Source code listings are given in black and white, and microtypographic justification is applied.

In the second example, the following two lines were included in the top of the Org-mode file:

```
#+LaTeX_CLASS: org-article-subsubsection
#+LaTeX_CLASS_OPTIONS: [koma,a4paper,landscape,twocolumn,utopia,10pt,listings-sv,microtype,paralist]
```

The resulting pdf file is typeset with the KOMA-script `scrartcl.cls` on 5.8 x 8.3 in. paper in landscape mode, using Utopia, Bera, and Incosolata fonts with a 10 point base size. Source code listings are given in color, and microtypographic justification is applied. In addition, the `paralist` option has been set; compare the tightly-set list immediately below with the standard list of the first example.

### 1.4 The class file

The  $\LaTeX$  class file has six standard parts:

**Identification part** Defines the nature of the file and specifies the  $\TeX$  format that it requires.

**Initial code part** Loads packages used internally by the class file.

**Declaration of options part** All options known to the class are declared here. It is forbidden to load packages in this part.

**Execution of options part** Set default values and execute the code for the options that have been declared.

**Package loading part** Load packages with the options specified in the declaration of options part using `\PassOptionsToPackage`.

**Main code part** Usually used to define new commands and structures.

#### 1.4.1 Identification part

This is a standard identification part. The `\NeedsTeXFormat` command can take an optional argument with a release date for the oldest version of  $\TeX$  that can use the class. Since it is relatively easy to update  $\TeX$  installations nowadays there is less reason to use this optional argument than there was in the past. It is omitted here.

```
% Identification part
\NeedsTeXFormat{LaTeX2e}
\ProvidesClass{org-article}[2010/09/19 0.2 (TSD)]
% End of the identification part
%
```

#### 1.4.2 Initial code part

The initial code part loads packages needed to process the class file and declares booleans for each of the class options. Options defined by the base class, either the standard `article.cls` or the Koma class `srcartcl.cls`, are passed on to those classes by default and don't have to be declared here.

```
% Initial code part

\RequirePackage{ifthen}
\RequirePackage{calc}
\RequirePackage{ifpdf}

% End of initial code part
```

#### 1.4.3 Declaration of options part

The package options are declared here in a code block made up entirely of noweb references. Typically, a package referred to here will also appear in the package loading part. The package loading part also consists of noweb references, an arrangement that makes it possible to keep all the code specific to a particular package together in the  $\TeX$  packages section.

#### 1.4.4 Execution of options part

The `\ProcessOptions` command reclaims the memory used to store user options, so those values are now gone unless something was done with them in the declaration of options part.

```
% Execution of options part
```

```
\ProcessOptions\relax
```

```
% End of execution of options part
```

### 1.4.5 Package loading part

By default, `org-article.cls` loads all but one of the packages in `org-export-latex-default-packages-alist`. It does not load `inputenc` directly, but instead relies on the Org-mode  $\LaTeX$  exporter to load this package, which passes as an option the encoding scheme of the exported buffer. The `fontenc` package is loaded with the `T1` option by default as a prerequisite for the various symbol packages. There is no facility to disable loading `fontenc`, which is unusual among  $\LaTeX$  packages in its ability to be loaded more than once. This functionality is required in the case where two or more fonts with different encodings are used.

This code block is implemented as `noweb` references so that package-specific code can be kept together in  $\LaTeX$  packages.

### 1.4.6 Class code part

This part is also implemented with `noweb` references. It calls package-specific setup routines that are defined in the  $\LaTeX$  packages section.

## 1.5 $\LaTeX$ packages

### 1.5.1 Article base class options

`org-article.cls` offers a choice of two base classes. The first is the standard  $\LaTeX$  `article.cls`. Also available is the KOMA-script `scrartcl.cls`. The KOMA-script `scrartcl.cls` is compatible with the standard  $\LaTeX$  `article` class; input that compiles with `article.cls` should also compile with `scrartcl.cls`. It differs in the layout of the page and the styling of page elements, producing a somewhat more “modern” design based on principles set out by the typographer and book designer Jan Tschichold.

To select the standard  $\LaTeX$  `article.cls`, put this in your Org-mode document:

```
#+LaTeX_CLASS_OPTIONS: [article]
```

To select the KOMA-script `scrartcl.cls`, put this in your Org-mode document:

```
#+LaTeX_CLASS_OPTIONS: [koma]
```

For information on the KOMA-script `scrartcl.cls`, you can probably read the documentation on your system with the following shell command:

texdoc koma

```
\newboolean{koma}
\DeclareOption{koma}{\setboolean{koma}{true}}

\newboolean{article}
\DeclareOption{article}{\setboolean{article}{true}}

\DeclareOption*{\PassOptionsToClass{\CurrentOption}{scrartcl}}

\DeclareOption*{\PassOptionsToClass{\CurrentOption}{article}}
```

The article class is loaded by default.

```
\ifthenelse{\boolean{koma}}
{%
  \LoadClass{scrartcl}%
}%
{%
  \LoadClass{article}%
}
```

- Paper size

The following paper size options are available for the standard  $\LaTeX$  `article.cls` and the KOMA-script `scrartcl.cls`. The first three options are North American paper sizes. The `a4paper`, `a5paper`, `b4paper`, and `b5paper` options are international standard ISO 216. The `landscape` option orients the paper with the long axis horizontal.

```
#+LaTeX_CLASS_OPTIONS: [letterpaper]
#+LaTeX_CLASS_OPTIONS: [legalpaper]
#+LaTeX_CLASS_OPTIONS: [executivepaper]
#+LaTeX_CLASS_OPTIONS: [a4paper]
#+LaTeX_CLASS_OPTIONS: [a5paper]
#+LaTeX_CLASS_OPTIONS: [b4paper]
#+LaTeX_CLASS_OPTIONS: [b5paper]
#+LaTeX_CLASS_OPTIONS: [landscape]
```

The KOMA-script `scrartcl.cls` has options for a fuller range of the international standard ISO 216 paper sizes, in addition to the `a4paper`, `a5paper`, `b4paper`, and `b5paper` sizes offered by the standard  $\LaTeX$  `article.cls`. In the example below, `X` is replaced by an integer  $[0, 1, \dots, 10]$ .

```
#+LaTeX_CLASS_OPTIONS: [aXpaper]
#+LaTeX_CLASS_OPTIONS: [bXpaper]
#+LaTeX_CLASS_OPTIONS: [cXpaper]
#+LaTeX_CLASS_OPTIONS: [dXpaper]
```



- Font size

There are three base font size options available for the standard  $\LaTeX$  `article.cls` and the KOMA-script `scrartcl.cls`. This option sets the size of the main text in the body of the document. Other fonts used in the document design, such as headers, footers, heads, sub-heads, etc., will be scaled accordingly.

```
#+LaTeX_CLASS_OPTIONS: [10pt]
```

```
#+LaTeX_CLASS_OPTIONS: [11pt]
```

```
#+LaTeX_CLASS_OPTIONS: [12pt]
```

- Text block and margins

With the koma option, the size of the text block and the resulting margins can be altered using the option `DIV`. A typical value of `DIV` is 9. Smaller text blocks with larger margins result when `DIV` takes a smaller value and larger text blocks with smaller margins result when `DIV` takes a larger value (fig. 1).

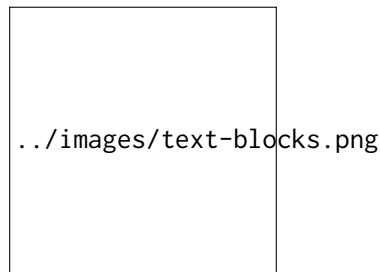


Figure 1: Text block sizes on A4 paper with different values of `DIV`

The koma class can also take into account the part of the page used by the binding. This value is passed to the package with the option `BCOR`, which takes any  $\LaTeX$  length as its argument.

For example, to set the text block large and leave ample space for binding with a clip, one might pass the following options to the class when using the koma option.

```
#+LaTeX_CLASS_OPTIONS: koma,DIV=15,BCOR=15mm
```

- Equations

The standard  $\LaTeX$  `article.cls` and the KOMA-script `scrartcl.cls` both recognize two options that control formatting of equations. The option `leqno` will number equations on the left, rather than the right, which is the default. The option `fleqn` displays equations flush left, rather than centered, which is the default

```
#+LaTeX_CLASS_OPTIONS: [leqno]
```

```
#+LaTeX_CLASS_OPTIONS: [fleqn]
```

- Table captions

The standard  $\LaTeX$  `article.cls` formats captions to appear below the captioned item. However, many document styles require table captions above the table. Users of `article.cls` typically use a package, `=topcapt.sty=`, and place the command `\topcaption{}` above the captioned item. With the Org-mode  $\LaTeX$  exporter, this requires changes to the exported

$\LaTeX$  code. The KOMA-script `scrartcl.cls` provides an option that gets rid of the need for `topcapt.sty`, but the code produced by the  $\LaTeX$  exporter must still be changed to place the caption above the table within the `table` environment:

```
#+LaTeX_CLASS_OPTIONS: [captions=tableheading]
```

### 1.5.2 Org-mode default packages

- Inputenc

The input encoding of the document is specified by the `inputenc` package. Org-mode provides a nifty method for sending options to this package, so it is not loaded directly by `org-article.cls`. See Org-mode  $\LaTeX$  export setup.

- Fontenc

The `fontenc` package specifies the encoding to use with a font. The history of font encodings in  $\LaTeX$  is a long one; suffice it to say that the most common option is T1, also known as the Cork encoding because it was formulated at a EuroTeX conference in Ireland's County Cork. The `fontenc` package pretends that it was never loaded so that it can be called several times with different options to load fonts that have various encodings.

You can probably read the documentation for `fontenc` on your system with the following shell command:

```
texdoc fontenc
```

This is a standard Org-mode package that is loaded by default. An option is provided to not load it.

```
#+LaTeX_CLASS_OPTIONS: [nofontenc]
```

Note that several of the font packages load `fontenc` themselves. These include Garamond, Palatino, Charter, and Utopia.

```
\newboolean{nofontenc}
\DeclareOption{nofontenc}{\setboolean{nofontenc}{true}}
\ifthenelse{\boolean{nofontenc}}
{}
{\RequirePackage[T1]{fontenc}}
\DeclareOption*{%
  \PassOptionsToPackage{\CurrentOption}{fontenc}
}
```

- Fixltx2e

The `fixltx2e` package applies fixes to  $\LaTeX 2\epsilon$  that would break older documents, so have not been applied to the  $\LaTeX 2\epsilon$  kernel. The package doesn't take any options.

You can probably read about `fixltx2e` on your system by issuing the following shell command:

```
texdoc fixltx2e
```

This is a standard Org-mode package that is loaded by default. An option is provided to not load it.

```
#+LaTeX_CLASS_OPTIONS: [nofixltx2e]
```

```

\newboolean{nofixltx2e}
\DeclareOption{nofixltx2e}{\setboolean{nofixltx2e}{true}}
\ifthenelse{\boolean{nofixltx2e}}
{}
{\RequirePackage{fixltx2e}}

```

- Graphicx

The `graphicx` package is typically configured with `*.def` files because the facilities it specifies are provided by a graphics driver, rather than by  $\LaTeX$ . For this reason, it is typically loaded without options.

You should be able to read about `graphicx`, along with its companion packages `color` and `graphics` by issuing the following shell command:

```
texdoc graphicx
```

This is a standard Org-mode package that is loaded by default. An option is provided to not load it.

```

#+LaTeX_CLASS_OPTIONS: [nographicx]
\newboolean{nographicx}
\DeclareOption{nographicx}{\setboolean{nographicx}{true}}
\ifthenelse{\boolean{nographicx}}
{}
{\RequirePackage{graphicx}}

```

- Longtable

The `longtable` package defines a new  $\LaTeX$  environment that can be used in place of the `tabular` environment and can be broken by the  $\TeX$  page-breaking algorithm. It is used, as the name implies, by long tables that typically won't fit onto a single page. The package is loaded without option.

You should be able to read the `longtable` documentation on your system by issuing the following shell command:

```
texdoc longtable
```

This is a standard Org-mode package that is loaded by default. An option is provided to not load it.

```

#+LaTeX_CLASS_OPTIONS: [nolongtable]
\newboolean{nolongtable}
\DeclareOption{nolongtable}{\setboolean{nolongtable}{true}}
\ifthenelse{\boolean{nolongtable}}
{}
{\RequirePackage{longtable}}

```

- Float

Tables and figures in  $\LaTeX$  are treated as floating objects. Internally, they are treated as a single (large) glyph, which makes them difficult to place on a page of otherwise small glyphs. Consequently, they are allowed to “float” until a suitable location is found. The `float` package provides facilities to define new floating environments, to restyle the existing float environments, and additionally defines a placement parameter, `[H]`, that keeps a float

from floating. The package is loaded without options.

You can probably read about the float package on your system by issuing the following shell command:

```
texdoc float
```

This is a standard Org-mode package that is loaded by default. An option is provided to not load it.

```
#+LaTeX_CLASS_OPTIONS: [nofloat]
\newboolean{nofloat}
\DeclareOption{nofloat}{\setboolean{nofloat}{true}}
\ifthenelse{\boolean{nofloat}}
{}
{\RequirePackage{float}}
```

- Wrapfig

The wrapfig package defines two new environments to set a narrow float at the edge of the text and wrap the text around it. Because “floats” in these new environments do not float it is sometimes the case that they appear out of order, e.g. Figure n appears before Figure n-1. Caveat emptor.

The package is loaded without options.

The documentation for this package is included at the end of the package source. You should be able to read it on your system by issuing the following shell command:

```
texdoc wrapfig
```

This is a standard Org-mode package that is loaded by default. An option is provided to not load it.

```
#+LaTeX_CLASS_OPTIONS: [nowrapfig]
\newboolean{nowrapfig}
\DeclareOption{nowrapfig}{\setboolean{nowrapfig}{true}}
\ifthenelse{\boolean{nowrapfig}}
{}
{\RequirePackage{wrapfig}}
```

- Soul

The soul package is used primarily for underlining text. It is loaded without options.

You can probably read the soul documentation on your system by issuing the following shell command:

```
texdoc soul
```

This is a standard Org-mode package that is loaded by default. An option is provided to not load it.

```
#+LaTeX_CLASS_OPTIONS: [nosoul]
\newboolean{nosoul}
\DeclareOption{nosoul}{\setboolean{nosoul}{true}}
\ifthenelse{\boolean{nosoul}}
{}
{\RequirePackage{soul}}
```

- **Textcomp**

This package provides support for the Text Companion fonts, which provide symbols used by `org-entities`, in particular the Euro currency symbol. It is loaded without options. This is a standard Org-mode package that is loaded by default. An option is provided to not load it.

```
#+LaTeX_CLASS_OPTIONS: [notextcomp]
\newboolean{notextcomp}
\DeclareOption{notextcomp}{\setboolean{notextcomp}{true}}
\ifthenelse{\boolean{notextcomp}}
{}
{\RequirePackage{textcomp}}
```

- **MarVoSym**

The `marvosym` package provides support for Martin Vogel's Symbol font, some glyphs from which are required by `org-entities`. The package is loaded without options. You can probably read about the `marvosym` package by issuing the following command in the shell:

```
texdoc marvosym
```

This is a standard Org-mode package that is loaded by default. An option is provided to not load it.

```
#+LaTeX_CLASS_OPTIONS: [nomarvosym]
\newboolean{nomarvosym}
\DeclareOption{nomarvosym}{\setboolean{nomarvosym}{true}}
\ifthenelse{\boolean{nomarvosym}}
{}
{\RequirePackage{marvosym}}
```

- **Wasysym**

The `wasysym` package makes available some symbol glyphs from the `wasy` fonts. It is needed to support some of the glyphs in `org-entities`. When it is loaded without options, this package clashes with the American Mathematical Society's `amsmath` package. Using the `nointegrals` option resolves this clash:

```
#+LaTeX_CLASS_OPTIONS: [integrals, nointegrals]
```

You can probably read the `wasysym` documentation on your system by issuing the following shell command:

```
texdoc wasysym
```

This is a standard Org-mode package that is loaded by default. An option is provided to not load it.

```
#+LaTeX_CLASS_OPTIONS: [nowasysym]
\newboolean{nowasysym}
\DeclareOption{nowasysym}{\setboolean{nowasysym}{true}}
\newboolean{integrals}
\DeclareOption{integrals}{\setboolean{integrals}{true}}
\newboolean{nointegrals}
```

```

\DeclareOption{nointegrals}{\setboolean{nointegrals}{true}}
\ifthenelse{\boolean{nowasysym}}
{}
{%
  \ifthenelse{\boolean{integrals}}%
  {\RequirePackage[integrals]{wasysym}}%
  {\RequirePackage[nointegrals]{wasysym}}%
}

```

- **Latexsym**

The `latexsym` package provides a few glyphs, one or more of which might be required by `org-entities`. According to the documentation, `latexsym` isn't needed if the `amssymb` package is loaded.

You can probably read about the `latexsym` package on your system by issuing the following shell command:

```
texdoc latexsym
```

This is a standard Org-mode package that is loaded by default. An option is provided to not load it.

```

#+LaTeX_CLASS_OPTIONS: [nolatexsym]
\newboolean{nolatexsym}
\DeclareOption{nolatexsym}{\setboolean{nolatexsym}{true}}
\ifthenelse{\boolean{nolatexsym}}
{}
{\RequirePackage{latexsym}}

```

- **Amssymb**

This package provides all the symbols defined in the American Mathematical Society's symbol fonts `msam` and `msbm`. They are required to support `org-entities`. It is superseded by the `mathdesign` package, which is used by various fonts. If one of these is specified, then the `amssymb` package is not loaded. If the package is loaded, then it is loaded without options.

You can probably read the `amssymb` package documentation by issuing the following shell command:

```
texdoc amssymb
```

This is a standard Org-mode package that is loaded by default. An option is provided to not load it.

```

#+LaTeX_CLASS_OPTIONS: [noamssymb]
\newboolean{noamssymb}
\DeclareOption{noamssymb}{\setboolean{noamssymb}{true}}
Isn't loaded if Times, Charter, Utopia, or Garamond are loaded. These use the mathdesign
package, which apparently supersedes amssymb.
\ifthenelse{\boolean{noamssymb}\or\boolean{utopia}\or\boolean{charter}\or\boolean{garamond}}
{}
{\RequirePackage{amssymb}}

```

- Hyperref

The hyperref package turns  $\LaTeX$  cross-referencing commands into hyperlinks, including the table of contents, bibliography, etc. It is typically configured on a site-wide basis with options kept in a file, `hyperref.cfg`. The  $\LaTeX$  document loads the package without specifying any options. The hyperref package redefines many  $\LaTeX$  commands, so it needs to be loaded at, or near the end of, the package loading part.

The hyperref package accepts numerous options, which can be given as `key = value` pairs. Boolean options default to `true` when passed without a value. Options are passed in the usual way, and `org-article.cls` simply passes them on to hyperref.

```
#+LaTeX_CLASS_OPTIONS: [anchorcolor, backref, baseurl, bookmarks,
bookmarksnumbered, bookmarksopen, bookmarksopenlevel, bookmarkstype,
breaklinks, CJKbookmarks, citebordercolor, citecolor, colorlinks,
draft, dvipdfm, dvipdfmx, dvips, dvipsone, dviwindo, encap,
extension, filebordercolor, filecolor, final, frenchlinks,
hyperfigures, hyperfootnotes, hyperindex, hypertex, hypertexnames,
implicit, latex2html, legalpaper, letterpaper, linkbordercolor,
linkcolor, linktocpage, menubordercolor, menucolor, nativepdf,
naturalnames, nesting, pageanchor, pagebackref, pdfauthor,
pdfborder, pdfcenterwindow, pdfcreator, pdfdirection,
pdfdisplaydoctitle, pdfduplex, pdffitwindow, pdfhighlight, pdfinfo,
pdfkeywords, pdflang, pdfmark, pdfmenubar, pdfnewwindow,
pdfnonfullscreenpagemode, pdfnumcopies, pdfpagelayout, pdfpagemode,
pdfpagelabels, pdfpagescrop, pdfpagetransition,
pdfpicktraybypdfsize, pdfprintarea, pdfprintclip, pdfprintpagerange,
pdfprintscaling, pdfproducer, pdfstartpage, pdfstartview,
pdfsubject, pdftex, pdftitle, pdftoolbar, pdftrapped, pdfview,
pdfviewarea, pdfviewclip, pdfwindowui, plainpages, ps2pdf,
raiselinks, runbordercolor, runcolor, setpagesize, tex4ht, textures,
unicode, urlbordercolor, urlcolor, verbose, vtex, xetex]
```

You can probably read the hyperref documentation by issuing the following shell command:

```
texdoc hyperref
```

This is a standard Org-mode package that is loaded by default. An option is provided to not load it.

```
#+LaTeX_CLASS_OPTIONS: [nohyperref]
\newboolean{nohyperref}
\DeclareOption{nohyperref}{\setboolean{nohyperref}{true}}
\ifthenelse{\boolean{nohyperref}}
{}
{\RequirePackage{hyperref}}
Options do not include debug.
\DeclareOption{anchorcolor}{%
```

```

    \PassOptionsToPackage{anchorcolor}{hyperref}}
\DeclareOption{backref}{%
    \PassOptionsToPackage{backref}{hyperref}}
\DeclareOption{baseurl}{%
    \PassOptionsToPackage{baseurl}{hyperref}}
\DeclareOption{bookmarks}{%
    \PassOptionsToPackage{bookmarks}{hyperref}}
\DeclareOption{bookmarksnumbered}{%
    \PassOptionsToPackage{bookmarksnumbered}{hyperref}}
\DeclareOption{bookmarksopen}{%
    \PassOptionsToPackage{bookmarksopen}{hyperref}}
\DeclareOption{bookmarksopenlevel}{%
    \PassOptionsToPackage{bookmarksopenlevel}{hyperref}}
\DeclareOption{bookmarkstype}{%
    \PassOptionsToPackage{bookmarkstype}{hyperref}}
\DeclareOption{breaklinks}{%
    \PassOptionsToPackage{breaklinks}{hyperref}}
\DeclareOption{CJKbookmarks}{%
    \PassOptionsToPackage{CJKbookmarks}{hyperref}}
\DeclareOption{citebordercolor}{%
    \PassOptionsToPackage{citebordercolor}{hyperref}}
\DeclareOption{citecolor}{%
    \PassOptionsToPackage{citecolor}{hyperref}}
\DeclareOption{colorlinks}{%
    \PassOptionsToPackage{colorlinks}{hyperref}}
\DeclareOption{draft}{%
    \PassOptionsToPackage{draft}{hyperref}}
\DeclareOption{dvipdfm}{%
    \PassOptionsToPackage{dvipdfm}{hyperref}}
\DeclareOption{dvipdfmx}{%
    \PassOptionsToPackage{dvipdfmx}{hyperref}}
\DeclareOption{dvips}{%
    \PassOptionsToPackage{dvips}{hyperref}}
\DeclareOption{dvipsone}{%
    \PassOptionsToPackage{dvipsone}{hyperref}}
\DeclareOption{dviwindo}{%
    \PassOptionsToPackage{dviwindo}{hyperref}}
\DeclareOption{encap}{%
    \PassOptionsToPackage{encap}{hyperref}}
\DeclareOption{extension}{%
    \PassOptionsToPackage{extension}{hyperref}}
\DeclareOption{filebordercolor}{%

```



```

    \PassOptionsToPackage{filebordercolor}{hyperref}}
\DeclareOption{filecolor}{%
    \PassOptionsToPackage{filecolor}{hyperref}}
\DeclareOption{final}{%
    \PassOptionsToPackage{final}{hyperref}}
\DeclareOption{frenchlinks}{%
    \PassOptionsToPackage{frenchlinks}{hyperref}}
\DeclareOption{hyperfigures}{%
    \PassOptionsToPackage{hyperfigures}{hyperref}}
\DeclareOption{hyperfootnotes}{%
    \PassOptionsToPackage{hyperfootnotes}{hyperref}}
\DeclareOption{hyperindex}{%
    \PassOptionsToPackage{hyperindex}{hyperref}}
\DeclareOption{hypertex}{%
    \PassOptionsToPackage{hypertex}{hyperref}}
\DeclareOption{hypertexnames}{%
    \PassOptionsToPackage{hypertexnames}{hyperref}}
\DeclareOption{implicit}{%
    \PassOptionsToPackage{implicit}{hyperref}}
\DeclareOption{latex2html}{%
    \PassOptionsToPackage{latex2html}{hyperref}}
\DeclareOption{legalpaper}{%
    \PassOptionsToPackage{legalpaper}{hyperref}}
\DeclareOption{letterpaper}{%
    \PassOptionsToPackage{letterpaper}{hyperref}}
\DeclareOption{linkbordercolor}{%
    \PassOptionsToPackage{linkbordercolor}{hyperref}}
\DeclareOption{linkcolor}{%
    \PassOptionsToPackage{linkcolor}{hyperref}}
\DeclareOption{linktocpage}{%
    \PassOptionsToPackage{linktocpage}{hyperref}}
\DeclareOption{menubordercolor}{%
    \PassOptionsToPackage{menubordercolor}{hyperref}}
\DeclareOption{menucolor}{%
    \PassOptionsToPackage{menucolor}{hyperref}}
\DeclareOption{nativempdf}{%
    \PassOptionsToPackage{nativempdf}{hyperref}}
\DeclareOption{naturalnames}{%
    \PassOptionsToPackage{naturalnames}{hyperref}}
\DeclareOption{nesting}{%
    \PassOptionsToPackage{nesting}{hyperref}}
\DeclareOption{pageanchor}{%

```

```

    \PassOptionsToPackage{pageanchor}{hyperref}}
\DeclareOption{pagebackref}{%
    \PassOptionsToPackage{pagebackref}{hyperref}}
\DeclareOption{pdfauthor}{%
    \PassOptionsToPackage{pdfauthor}{hyperref}}
\DeclareOption{pdfborder}{%
    \PassOptionsToPackage{pdfborder}{hyperref}}
\DeclareOption{pdfcenterwindow}{%
    \PassOptionsToPackage{pdfcenterwindow}{hyperref}}
\DeclareOption{pdfcreator}{%
    \PassOptionsToPackage{pdfcreator}{hyperref}}
\DeclareOption{pdfdirection}{%
    \PassOptionsToPackage{pdfdirection}{hyperref}}
\DeclareOption{pdfdisplaydoctitle}{%
    \PassOptionsToPackage{pdfdisplaydoctitle}{hyperref}}
\DeclareOption{pdfduplex}{%
    \PassOptionsToPackage{pdfduplex}{hyperref}}
\DeclareOption{pdfffitwindow}{%
    \PassOptionsToPackage{pdfffitwindow}{hyperref}}
\DeclareOption{pdfhighlight}{%
    \PassOptionsToPackage{pdfhighlight}{hyperref}}
\DeclareOption{pdfinfo}{%
    \PassOptionsToPackage{pdfinfo}{hyperref}}
\DeclareOption{pdfkeywords}{%
    \PassOptionsToPackage{pdfkeywords}{hyperref}}
\DeclareOption{pdflang}{%
    \PassOptionsToPackage{pdflang}{hyperref}}
\DeclareOption{pdfmark}{%
    \PassOptionsToPackage{pdfmark}{hyperref}}
\DeclareOption{pdfmenubar}{%
    \PassOptionsToPackage{pdfmenubar}{hyperref}}
\DeclareOption{pdfnewwindow}{%
    \PassOptionsToPackage{pdfnewwindow}{hyperref}}
\DeclareOption{pdfnonfullscreenpagemode}{%
    \PassOptionsToPackage{pdfnonfullscreenpagemode}{hyperref}}
\DeclareOption{pdfnumcopies}{%
    \PassOptionsToPackage{pdfnumcopies}{hyperref}}
\DeclareOption{pdfpagelayout}{%
    \PassOptionsToPackage{pdfpagelayout}{hyperref}}
\DeclareOption{pdfpagemode}{%
    \PassOptionsToPackage{pdfpagemode}{hyperref}}
\DeclareOption{pdfpagelabels}{%

```

```

    \PassOptionsToPackage{pdfpagelabels}{hyperref}}
\DeclareOption{pdfpagescrop}{%
    \PassOptionsToPackage{pdfpagescrop}{hyperref}}
\DeclareOption{pdfpagetransition}{%
    \PassOptionsToPackage{pdfpagetransition}{hyperref}}
\DeclareOption{pdfpicktraybypdfsize}{%
    \PassOptionsToPackage{pdfpicktraybypdfsize}{hyperref}}
\DeclareOption{pdfprintarea}{%
    \PassOptionsToPackage{pdfprintarea}{hyperref}}
\DeclareOption{pdfprintclip}{%
    \PassOptionsToPackage{pdfprintclip}{hyperref}}
\DeclareOption{pdfprintpagerange}{%
    \PassOptionsToPackage{pdfprintpagerange}{hyperref}}
\DeclareOption{pdfprintscaling}{%
    \PassOptionsToPackage{pdfprintscaling}{hyperref}}
\DeclareOption{pdfproducer}{%
    \PassOptionsToPackage{pdfproducer}{hyperref}}
\DeclareOption{pdfstartpage}{%
    \PassOptionsToPackage{pdfstartview}{hyperref}}
\DeclareOption{pdfsubject}{%
    \PassOptionsToPackage{pdfsubject}{hyperref}}
\DeclareOption{pdftex}{%
    \PassOptionsToPackage{pdftex}{hyperref}}
\DeclareOption{pdftitle}{%
    \PassOptionsToPackage{pdftitle}{hyperref}}
\DeclareOption{pdftoolbar}{%
    \PassOptionsToPackage{pdftoolbar}{hyperref}}
\DeclareOption{pdftrapped}{%
    \PassOptionsToPackage{pdftrapped}{hyperref}}
\DeclareOption{pdfview}{%
    \PassOptionsToPackage{pdfview}{hyperref}}
\DeclareOption{pdfviewarea}{%
    \PassOptionsToPackage{pdfviewarea}{hyperref}}
\DeclareOption{pdfviewclip}{%
    \PassOptionsToPackage{pdfviewclip}{hyperref}}
\DeclareOption{pdfwindowui}{%
    \PassOptionsToPackage{pdfwindowui}{hyperref}}
\DeclareOption{plainpages}{%
    \PassOptionsToPackage{plainpages}{hyperref}}
\DeclareOption{ps2pdf}{%
    \PassOptionsToPackage{ps2pdf}{hyperref}}
\DeclareOption{raiselinks}{%

```

```

    \PassOptionsToPackage{raiselinks}{hyperref}}
\DeclareOption{runbordercolor}{%
    \PassOptionsToPackage{runbordercolor}{hyperref}}
\DeclareOption{runcolor}{%
    \PassOptionsToPackage{runcolor}{hyperref}}
\DeclareOption{setpagesize}{%
    \PassOptionsToPackage{setpagesize}{hyperref}}
\DeclareOption{tex4ht}{%
    \PassOptionsToPackage{tex4ht}{hyperref}}
\DeclareOption{textures}{%
    \PassOptionsToPackage{textures}{hyperref}}
\DeclareOption{unicode}{%
    \PassOptionsToPackage{unicode}{hyperref}}
\DeclareOption{urlbordercolor}{%
    \PassOptionsToPackage{urlbordercolor}{hyperref}}
\DeclareOption{urlcolor}{%
    \PassOptionsToPackage{urlcolor}{hyperref}}
\DeclareOption{verbose}{%
    \PassOptionsToPackage{verbose}{hyperref}}
\DeclareOption{vtex}{%
    \PassOptionsToPackage{vtex}{hyperref}}
\DeclareOption{xetex}{%
    \PassOptionsToPackage{xetex}{hyperref}}

```

### 1.5.3 Font packages

$\LaTeX$  documents might need three text fonts, one for the serif typeface used for text, the sans-serif typeface often used for heads and sub-heads, and the monospace typewriter typeface typically used to set code examples and the like. Each of the following options specifies all three of the fonts, but takes its name after the serif font used to set text.

- Times

The `times` option uses URW Nimbus Roman, a Times clone, for the serif font, URW Nimbus Sans, a Helvetica clone, for the sans-serif font, and URW Nimbus Mono, a Courier clone, for the typewriter font. This is a standard set of common typefaces typically used in scientific publications. All of the fonts should be included in a typical  $\LaTeX$  distribution.

Times New Roman was designed by Stanley Morison for *The Times* of London during a redesign of the newspaper prompted, in part, by Morison's criticism of its typography in 1929. Helvetica was developed in 1957 by Max Miedinger. Courier was designed by Howard Kettler in 1955 for use in IBM typewriters.

```

#+LaTeX_CLASS_OPTIONS: [times]
\newboolean{times}
\DeclareOption{times}{\setboolean{times}{true}}

```

Helvetica looks better if it is set slightly smaller than the serif font.

```
\ifthenelse{\boolean{times}}
{%
  \ifpdf
  \RequirePackage[T1]{fontenc}
  \RequirePackage{mathptmx}
  \RequirePackage[scaled=.90]{helvet}
  \RequirePackage{courier}
  \fi}%
{}
```

- Garamond

Garamond refers to a group of old-style serif typefaces and is named after the sixteenth-century type designer, Claude Garamond. It is an elegant typeface. The sans-serif font is Bera, an adaptation of a font originally named Vera. It was designed by Jim Lyles. The typewriter font is Inconsolata, which was created by Raph Levien and is based on Vera.

```
#+LaTeX_CLASS_OPTIONS: [garamond]
\newboolean{garamond}
\DeclareOption{garamond}{\setboolean{garamond}{true}}
Garamond requires a bit more leading than normal.
\ifthenelse{\boolean{garamond}}
{%
  \ifpdf
  \RequirePackage[T1]{fontenc}
  \RequirePackage[urw-garamond]{mathdesign}
  \RequirePackage[scaled]{berasans}
  \RequirePackage{inconsolata} % tt
  \linespread{1.0609}
  \fi}%
{}
```

- Palatino

The beautiful, old-style serif font, Palatino, was designed by Herman Zapf. It is somewhat heavier and easier to read than Garamond. It is paired here with Helvetica and Courier, as is Times, for which it is an alternative.

```
#+LaTeX_CLASS_OPTIONS: [palatino]
\newboolean{palatino}
\DeclareOption{palatino}{\setboolean{palatino}{true}}
Palatino gets a bit more leading than normal.
\ifthenelse{\boolean{palatino}}
{%
  \ifpdf
  \RequirePackage[T1]{fontenc}
  \RequirePackage{mathpazo}%
```

```

\linespread{1.05}%
\RequirePackage[scaled]{helvet}%
\RequirePackage{courier} % tt
\fi}%
{}

```

- Utopia

Utopia is a transitional serif font designed by Robert Slimbach for Adobe in 1989. It became free software in 2006. It is paired here with Bera and Inconsolata, as is Garamond. Note that the utopia font clashes with the amssymb package.

```

#+LaTeX_CLASS_OPTIONS: [utopia]
\newboolean{utopia}
\DeclareOption{utopia}{\setboolean{utopia}{true}}
\ifthenelse{\boolean{utopia}}
{%
  \ifpdf
    \RequirePackage[T1]{fontenc}
    \RequirePackage[adobe-utopia]{mathdesign}
    \RequirePackage[scaled]{berasans}
    \RequirePackage{inconsolata} % tt
  \fi}%
}

```
- Charter

Charter was designed to reproduce well on low-resolution 300 dpi printers. It is paired here with Helvetica and Courier, like Times, for which it is an alternative. These fonts conflict with the amssymb package.

```

#+LaTeX_CLASS_OPTIONS: [charter]
\newboolean{charter}
\DeclareOption{charter}{\setboolean{charter}{true}}
Helvetica is set a bit smaller to better match the Charter font.
\ifthenelse{\boolean{charter}}
{%
  \ifpdf
    \RequirePackage[T1]{fontenc}
    \RequirePackage[bitstream-charter]{mathdesign}
    \RequirePackage[scaled=.90]{helvet}
    \RequirePackage{courier} % tt
  \fi}%
}

```

#### 1.5.4 Other packages

Packages not included in the Org-mode list of default packages are made available in `org-article.cls`. These include facilities to apply microtypographic adjustments to suitable fonts, set the line spacing of the document to double space, set lists more compactly than the standard  $\LaTeX$  `article.cls`, and typeset source code listings using one of several color or black and white themes.

- Microtype

The `microtype` package makes available the micro-typographic extensions of `pdfTeX`. Prominent among these are font expansion and character protrusion, which together result in fewer bad line breaks and a visually even right margin.

You can probably read the `microtype` documentation, which runs to more than 200 pages, on your system by issuing the shell command:

```
texdoc microtype
```

This package is not loaded by default. An option is provided to load it.

```
#+LaTeX_CLASS_OPTIONS: [microtype]
\newboolean{microtype}
\DeclareOption{microtype}{\setboolean{microtype}{true}}
  \ifthenelse{\boolean{microtype}}
{%
  \ifpdf
    \RequirePackage{microtype}
  \fi}%
{}
```

- Setspace

The `setspace` package is used here for the sole purpose of creating double-spaced documents, such as manuscripts submitted to some publishing houses. If it is loaded, then the option `doublespace` will produce a double-spaced document.

This package is not loaded by default. An option is provided to load it, and to set linespacing to `doublespace`.

```
#+LaTeX_CLASS_OPTIONS: [setspace,doublespace]
\newboolean{setspace}
\newboolean{doublespace}
\DeclareOption{setspace}{\setboolean{setspace}{true}}
\DeclareOption{doublespace}{\setboolean{doublespace}{true}}
\ifthenelse{\boolean{setspace}}
{\RequirePackage{setspace}}
{}
\ifthenelse{\boolean{setspace}}%
{\ifthenelse{\boolean{doublespace}}%
{\doublespacing}%
{\singlespacing}}%
```

```
{}%
```

- Paralist

The paralist package was designed to meet the widespread request for more tightly set lists in the standard  $\LaTeX$  classes. If it is loaded, then the  $\LaTeX$  environments `itemize`, `enumerate`, and `description` are over-ridden by their paralist counterparts.

You can probably read the paralist documentation on your system by issuing the shell command:

```
texdoc paralist
```

This package is not loaded by default. An option is provided to load it.

```
#+LaTeX_CLASS_OPTIONS: [paralist]
\newboolean{paralist}
\DeclareOption{paralist}{\setboolean{paralist}{true}}
% Set the standard LaTeX list environments to their compact counterparts
\ifthenelse{\boolean{paralist}}
  {%
    \RequirePackage{paralist}
    \let\itemize\compactitem%
    \let\description\compactdesc%
    \let\enumerate\compactenum%
  }
  {}
```

- Topcapt

The topcapt package is needed when it is desired to set the caption of a table above the table. In this case, the `\caption{}` command must be moved above the tabular environment and the command changed to `\topcaption`. These will be adjustments made to the code produced by the Org-mode  $\LaTeX$  exporter.

This package is not loaded by default. An option is provided to load it.

```
#+LaTeX_CLASS_OPTIONS: [topcapt]
\newboolean{topcapt}
\DeclareOption{topcapt}{\setboolean{topcapt}{true}}
\ifthenelse{\boolean{topcapt}}
  {\RequirePackage{topcapt}}
  {}
```

- Listings

The listings package is a source code printer for  $\LaTeX$ . Except for the two options `draft` and `final`, which the listings package is configured to pick up itself from options passed to `\documentclass`, the other options were introduced to ease debugging or to trigger compatibility with earlier versions of the package. It seems unwise to use this mechanism to set options for the listings package because there is no reason to assume that it will be stable. One solution would be to process options for this package using a key = value interface that sets the values of keys recognized by the package's `lstset` function. This is relatively difficult to do. An easier approach groups package options into themes, which



can be selected with simple options, rather than key = value pairs. It is the approach adopted here.

This package is not loaded by default. Options are provided to load it in its default state, set up for black and white reproduction, and set up for color reproduction.

`#+LaTeX_CLASS_OPTIONS: [listings, listings-bw, listings-color, listings-sv]`

This is where themes are defined for the listings package. The `listings-color` theme was lifted from a post to the Org-mode list by Eric Schulte. The `listings-sv` theme was posted to the list by Sebastian Vauban; it has been modified here to work with the color package, rather than the `xcolor` package used by Sebastian, and to allow breaking of long lines.

```
\newboolean{listings}
\newboolean{color}
\DeclareOption{listings}{\setboolean{listings}{true}}
\DeclareOption{listings-bw}{%
  \setboolean{listings}{true}%
  \AtBeginDocument{%
    \lstset{
      basicstyle=\ttfamily\footnotesize,%
      frame=lines,%
      breaklines=true,%
      showstringspaces=false}%
    }%
}
\DeclareOption{listings-color}{%
  \setboolean{listings}{true}%
  \setboolean{color}{true}%
  \AtBeginDocument{%
    \definecolor{keywords}{RGB}{255,0,90}%
    \definecolor{comments}{RGB}{60,179,113}%
    \definecolor{back}{RGB}{231,231,231}%
    \lstset{%
      keywordstyle=\color{keywords},%
      commentstyle=\color{comments},%
      backgroundcolor=\color{back},%
      basicstyle=\ttfamily\footnotesize,%
      showstringspaces=false,%
      frame=lines,%
      breaklines=true%
    }%
  }%
}
\DeclareOption{listings-sv}{%
  \setboolean{listings}{true}%
```

```

\setboolean{color}{true}%
\AtBeginDocument{%
  \definecolor{...@lstbackground}{RGB}{255,255,204} % light yellow
  \definecolor{...@lstkeyword}{RGB}{0,0,255} % blue
  \definecolor{...@lstidentifier}{RGB}{0,0,0} % black
  \definecolor{...@lstcomment}{RGB}{255,0,0} % red
  \definecolor{...@lststring}{RGB}{0,128,0} % dark green
  \lstset{%
    basicstyle=\ttfamily\scriptsize, % the font that is used for the code
    tabsize=4, % sets default tabsize to 4 spaces
    numbers=left, % where to put the line numbers
    numberstyle=\tiny, % line number font size
    stepnumber=0, % step between two line numbers
    breaklines=true, %!! do break long lines of code
    showtabs=false, % show tabs within strings adding particular underscores
    showspaces=false, % show spaces adding particular underscores
    showstringspaces=false, % underline spaces within strings
    keywordstyle=\color{...@lstkeyword},
    identifierstyle=\color{...@lstidentifier},
    stringstyle=\color{...@lststring},
    commentstyle=\color{...@lstcomment},
    backgroundcolor=\color{...@lstbackground}, % sets the background color
    captionpos=b, % sets the caption position to 'bottom'
    extendedchars=false %!?? workaround for when the listed file is in UTF-8
  }%
}%
}
\ifthenelse{\boolean{listings}}
  {\RequirePackage{listings}}
  {}
\ifthenelse{\boolean{listings}}%
  {\lstdefinlanguage{org}
   {morecomment=[1]\#}%
  }
{}%

```