

The `tlgart` package*

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1 Introduction

The `tlgart` package is provided for authors of articles to appear in collections in the book series “Texts in Logic and Games”, published by Amsterdam University Press. It was written by Joel Uckelman. Deviations from standard L^AT_EX are few and noted below.

2 Usage

2.1 Frontmatter

2.1.1 Document class and required packages

The `tlgart` package is intended for use with the `book` document class. `tlgart` loads the following packages: `amsmath`, `amsfonts`, `amssymb`, `amsthm`, `geometry`, and `crop`. If you want to add other packages, load them after the `\usepackage{tlgart}` line. Please use as few packages as possible, and use them only if absolutely necessary. This means that your paper should begin with the following lines:

```
\documentclass{book}
\usepackage{tlgart}
\usepackage{your packages}
```

2.1.2 Title & author information

The following commands are provided for specifying title and author information to be placed in the title block of your article:

```
\title{short title}{full title}
\author{short name}{full name}
\address{author's address}
\email{email address}
```

The short form of the author’s name will appear in the running heads on even pages of the article, while the short form of the article’s title will appear on odd

*This document corresponds to `tlgart` v0.1, dated 2007/05/04.

pages. Please include your first name in the full name, and use initials in the short name (see example below).

Line breaks (`\`) may appear in the full title, full name, author's address and email address, as necessary. `\thanks{<text>}` may appear in the full name argument of `\author`. For articles with multiple authors, give full names separated by line breaks and short names separated by commas. For multiple addresses, match addresses with authors using superscript numbers (*not* footnotes!). Please enter your address in the format

```

    <Address> \
    <University> \
    <Postal Address> \
    <City & ZIP Code>, <Country>

```

adding additional lines if necessary and appropriate. Please use the full name of your institute (no abbreviations) and the official name of your university (in the example below, “Rheinische Friedrich-Wilhelms-Universität Bonn” instead of “Universität Bonn”). Do not translate the name of your institute and university unless the original name uses a different alphabet. As an example, the following code

```

\title{An Example Paper}
      {An Example Paper for the \texttt{tlgart} Documentation}
\author{B.~L"owe, J.~Uckelman}
      {Benedikt L"owe1,2 \ Joel Uckelman1}
\address{1Institute for Logic, Language and Computation \
      Universiteit van Amsterdam\
      Plantage Muidergracht 24\
      1018 TV Amsterdam, The Netherlands\ [2mm]
      2Mathematisches Institut\
      Rheinische Friedrich-Wilhelms-Universit"at Bonn\
      Beringstra{\ss}e 1\
      53115 Bonn, Germany}
\email{\{bloewe,juckelma\}@illc.uva.nl}

```

produces the following in the title block:

An Example Paper for the tlgart Documentation

Benedikt Löwe^{1,2}
Joel Uckelman¹

¹ Institute for Logic, Language and Computation
Universiteit van Amsterdam
Plantage Muidergracht 24
1018 TV Amsterdam, The Netherlands

² Mathematisches Institut
Rheinische Friedrich-Wilhelms-Universität Bonn
Beringstraße 1
53115 Bonn, Germany
{bloewe,juckelma}@illc.uva.nl

`\title`, `\author`, `\address`, and `\email` must be specified *prior* to the `\article` command, since `\article` uses the values specified there to construct the title block, table of contents entry and bibliographic information in the footer of the title page. See Section 2.2.1 for a description of `\article`.

2.1.3 Macros

Please enter your personal macros after the title and author information and before `\begin{document}`. Please include only macros that you are actually using.

2.2 Sectioning

2.2.1 The `\article` command

The `\article` command is used right after `\begin{document}` to begin your article, and takes no arguments. `\article` is the highest-level section type which should appear in your article, and it should appear exactly once. There should be *nothing* between `\begin{document}` and `\article`. `\article` produces the title header, sets up the running heads, and inserts the article into the Table of Contents, using the information provided by `\title`, `\author`, `\address`, and `\email`.

2.2.2 The abstract environment

Put your abstract in the `abstract` environment, following the `\article` command. Usage is unchanged from the `article` class.

2.2.3 The `\part` & `\chapter` commands

Do not use `\part` or `\chapter` in your article. They are reserved for higher-level structure of volumes.

2.2.4 `\section` & co.

All subchapter sectioning commands (`\section`, `\subsection`, `\subsubsection`, `\paragraph`, `\subparagraph`, and their starred versions) may be used as usual.

2.2.5 References

A bibliography may be produced in the standard way with the `thebibliography` environment and `\bibitem` command.

2.2.6 Appendices

Put appendices after the references. Use the `\appendix` command to switch to appendix numbering. For a single unlettered appendix, called “Appendix”, use `\section*{Appendix}`. For multiple appendices, called “Appendix A”, “Appendix B”, ..., begin each appendix with `\section{}`.

2.3 Displayed Text

2.3.1 Theorem-like environments

Using the `amsthm` package, we have defined the following theorem-like environments:

<code>assumption</code>	<code>definition</code>	<code>observation</code>
<code>axiom</code>	<code>example</code>	<code>problem</code>
<code>claim</code>	<code>exercise</code>	<code>proposition</code>
<code>conjecture</code>	<code>fact</code>	<code>remark</code>
<code>convention</code>	<code>lemma</code>	<code>subclaim</code>
<code>corollary</code>	<code>notation</code>	<code>theorem</code>

Please use these. By default, all theorem-like environments are numbered by section and sequentially in the same series. That is, Theorem 3.43 will follow Observation 3.42.

If your article requires some theorem-like environment not defined here, you may define new ones using `\newtheorem{envname}[counter]{label}`. For example, `\newtheorem{garbage}[theorem]{Garbage}` will define a `garbage` environment, instances of which will be numbered in sequence with the theorems.

Every theorem-like environment takes an optional argument which can be used to supply an annotation. E.g., this code

```
\begin{theorem}[Fermat]
  For integers  $n > 2$ , the equation  $a^n + b^n = c^n$ 
  has no nonzero integer solutions.
\end{theorem}
```

will produce

Theorem 2.1 (Fermat). For integers $n > 2$, the equation $a^n + b^n = c^n$ has no nonzero integer solutions.

Our standard numbering is by section. If you wish to have one numbering for the entire article (not resetting at the begin of each section), please use the command `\numberbyarticle`. This has to be done for articles without sections, and could also be useful for other short articles. The theorem label for the above example would then read “**Theorem 1 (Fermat).**”, assuming that there are no theorem-like environments before it.

For more advanced usage of theorem-like environments, please see the documentation for the `amsthm` package.

2.3.2 Proof environments

The `proof` and `proofof` environments may be used for enclosing proofs:

```
\begin{proof}[label] ... \end{proof}
\begin{proofof}[label]{qedlabel} ... \end{proofof}
```

In both cases, the optional `label` defaults to *Proof* if not specified. The `proofof` environment extends `proof` by offering a labelled Q.E.D. at the end of the proof.

This code:

```
\begin{proof}Omitted due to space constraints.\end{proof}
```

```

\begin{proof}[Proof of Lemma] Suppose that...\end{proof}
\begin{proof}[Proof (Sketch)] The idea is that...\end{proof}
\begin{proofof}{Theorem 1}Proceed by induction...\end{proofof}
\begin{proofof}[Proof of Claim]{Claim}This proves the claim.\end{proofof}

```

produces the following:

Proof. Omitted due to space constraints. Q.E.D.

Proof of Lemma. Suppose that... Q.E.D.

Proof (Sketch). The idea is that... Q.E.D.

Proof. Proceed by induction... Q.E.D. (Theorem 1)

Proof of Claim. This proves the claim. Q.E.D. (Claim)

For more advanced usage of the `proof` environment, please see the documentation for the `amsthm` package.

2.4 Tables and figures

Tables and figures are numbered each with their own counter, which resets at the start of every article. If there are n tables and m figures in article, they will be numbered $1, \dots, n$ and $1, \dots, m$, respectively.

2.5 Everything else

Anything not mentioned here is unchanged usage-wise from standard L^AT_EX.

3 Implementation

This is the implementation of the `tlgart` package. It is rather ugly at present. Suggestions for improvement are welcome.

```
1 %
2 % page parameters
3 %
4 %\setlength{\textheight}{175mm}
5 %\setlength{\textwidth}{108mm}
6 %\setlength{\oddsidemargin}{2.21cm}
7 %\setlength{\evensidemargin}{2.21cm}
8
9 % zap linebreaks
10 \newcommand{\OneLine}[1]{%
11   \begingroup
12     \def\{\unskip\space \ignorespaces}%
13     #1%
14   \endgroup}
15
16 %
17 % no headers on left-side pages following
18 % articles which end on right-side pages
19 %
20 \newcommand{\clearempydoublepage}%
21   {\newpage\thispagestyle{empty}\cleardoublepage}
22
23 %
24 % frontmatter, mainmatter, backmatter
25 %
26 \renewcommand\frontmatter{\clearempydoublepage%
27   \@mainmatterfalse
28   \pagestyle{headings}
29   \pagenumbering{roman}}
30
31 \renewcommand\mainmatter{\clearempydoublepage%
32   \@mainmattertrue
33   \pagestyle{headings}
34   \pagenumbering{arabic}}
35
36 \renewcommand\backmatter{\clearempydoublepage%
37   \@mainmatterfalse}
38
39
40 %
41 % title header
42 %
43 \newif\ifTitle
44 \renewcommand{\thanks}[1]{%
45   \ifTitle{%
46     \renewcommand{\thefootnote}{\fnsymbol{footnote}}%
47     \footnote{#1}%
48     \renewcommand{\thefootnote}{\arabic{footnote}}}%
49   \else\null\fi}
50
```

```

51 \renewcommand{\title}[2]{%
52   \gdef\@title{\OneLine{#2}}
53   \gdef\@titledisplay{#2}
54   \gdef\@shorttitle{#1}
55 }
56 \def\@title{}
57 \def\@titledisplay{}
58 \def\@shorttitle{}
59
60 \renewcommand{\author}[2]{%
61   \gdef\@author{\OneLine{#2}}
62   \gdef\@authordisplay{%
63     \begingroup
64       \let\@slasheslash\%
65       \def\@slasheslash[1mm]}%
66     #2%
67     \endgroup}
68   \gdef\@shortauthor{#1}
69 }
70 \def\@author{}
71 \def\@authordisplay{}
72 \def\@shortauthor{}
73
74 \newcommand{\address}[1]{\gdef\@address{#1}}
75 \def\@address{}
76
77 \newcommand{\email}[1]{\gdef\@email{\@[1mm]\texttt{#1}}}
78 \def\@email{}
79
80 \renewcommand{\maketitle}{%
81   \Titletrue
82   \refstepcounter{chapter}
83   \thispagestyle{copy}%
84   \begingroup
85     \parindent 0pt
86     \hrulefill \linebreak \null \vspace{-8pt}\par
87     {\Large\textbf{\@titledisplay}}
88
89     }
90     \vspace{5mm}
91     {\large\@authordisplay}\@[3mm]
92     \fontsize{8}{9}\selectfont\@address
93     \@email\par
94     \nobreak
95     \hrulefill \linebreak \null \vspace{-8pt}\par
96   \endgroup
97   \vspace*{10pt}
98   \@thanks
99   \setcounter{footnote}{0}
100 }
101
102 %
103 % article
104 %

```

```

105 \newcounter{article}
106
107 \newcommand{\article}{%
108   \clearemptydoublepage
109   \refstepcounter{article}
110   \label{\thearticle-begin}
111   \maketitle
112   \Titlefalse
113   \addcontentsline{toc}{chapter}%
114     {\protect{\mbox{\emph{\@author}}}\protect\ \protect{\mbox{\@title}}}
115   \main
116   \renewcommand{\leftmark}{\@shortauthor}
117   \renewcommand{\rightmark}{\@shorttitle}
118 }
119
120 % this ensures that the article labels and running heads are correct
121 \newcommand{\includearticle}[1]{%
122   \clearpage\begingroup\input{#1}\label{\thearticle-end}\endgroup\clearpage}
123
124 %
125 % copyright slug
126 %
127 \newif\ifCollection
128
129 \def\publisher#1{\gdef\@publisher{#1}}
130 \def\@publisher{}
131
132 \def\seriestitle#1{\gdef\@seriestitle{#1}}
133 \def\@seriestitle{}
134
135 \def\editor#1{%
136   \gdef\@editor{\OneLine{#1}}
137   \gdef\@editordisplay{#1}
138 }
139 \def\@editor{}
140 \def\@editordisplay{}
141
142 \def\volumetitle#1{%
143   \gdef\@volumetitle{\OneLine{#1}}
144   \gdef\@volumedisplaytitle{#1}
145 }
146 \def\@volumetitle{}
147
148 \def\volumesubtitle#1{%
149   \gdef\@volumesubtitle{\OneLine{#1}}
150   \gdef\@volumedisplaysubtitle{#1}
151 }
152 \def\@volumesubtitle{}
153 \def\@volumedisplaysubtitle{}
154
155 \def\volumeyear#1{\gdef\@volumeyear{#1}}
156 \def\@volumeyear{}
157
158 \def\volumenumber#1{\gdef\@volumenumber{#1}}

```



```

159 \def\@volumenumber{}
160
161 \def\isbn#1{\gdef\@isbn{#1}}
162 \def\@isbn{}
163
164 % FIXME: Will there ever be single-page articles? Maybe.
165 % FIXME: Will there ever be authors with email but no address? No.
166
167 \def\CopyrightContent{%
168   \ifCollection{\parbox[t]{\textwidth}{%
169     \scriptsize \editor~(ed.). \textit{\@volumetitle}. \@volumesubtitle{.} \@seriestitle{ } \
170     \else\null\fi
171 }
172
173 % NB: \thearticle-begin is the label formed by the value of \thearticle
174 % concatenated with the string "-begin".
175
176 %
177 % running heads
178 %
179 \def\ps@copy{%
180   \def\@oddfoot{\CopyrightContent}%
181   \def\@evenfoot{\CopyrightContent}%
182   \let\@evenhead\@empty%
183   \let\@oddhead\@empty}
184
185 \def\ps@headings{%
186   \let\@oddfoot\@empty%
187   \let\@evenfoot\@empty%
188   \def\@evenhead{\Titlefalse\fontsize{8}{9}\selectfont%
189     \thepage\hfil\leftmark}%
190   \def\@oddhead{\Titlefalse\fontsize{8}{9}\selectfont%
191     \rightmark\hfil\thepage}}
192
193 %
194 % theorem-like environments
195 %
196 \newtheoremstyle{tlg}%           name
197   {\topsep}%                   space above
198   {\topsep}%                   space below
199   {\rm}%                       body text
200   {}%                          indent
201   {\bfseries}%                 head text
202   {.%}                          punctuation after head
203   {0.5em}%                     space after head
204   {}%                          head spec
205
206 \theoremstyle{tlg}
207
208 \newtheorem{theorem}{Theorem}[section]
209 \newtheorem{example}{Example}
210 \newtheorem{observation}{Observation}
211 \newtheorem{fact}{Fact}
212 \newtheorem{lemma}{Lemma}

```

```

213 \newtheorem{problem}[theorem]{Problem}
214 \newtheorem{corollary}[theorem]{Corollary}
215 \newtheorem{proposition}[theorem]{Proposition}
216 \newtheorem{definition}[theorem]{Definition}
217 \newtheorem{remark}[theorem]{Remark}
218 \newtheorem{notation}[theorem]{Notation}
219 \newtheorem{axiom}[theorem]{Axiom}
220 \newtheorem{exercise}[theorem]{Exercise}
221 \newtheorem{assumption}[theorem]{Assumption}
222 \newtheorem{conjecture}[theorem]{Conjecture}
223 \newtheorem{convention}[theorem]{Convention}
224 \newtheorem{claim}[theorem]{Claim}
225 \newtheorem{subclaim}[theorem]{Subclaim}
226
227 \renewcommand\thetheorem{\thesection.\arabic{theorem}}
228
229 \def\@removefromreset#1#2{%
230   \expandafter\let\csname c@#1\endcsname\@removefromreset
231   \def\@elt##1{%
232     \expandafter\ifx\csname c@##1\endcsname\@removefromreset
233     \else
234       \noexpand\@elt{##1}%
235       \fi}%
236   \expandafter\xdef\csname cl@#2\endcsname{%
237     \csname cl@#2\endcsname}}
238
239 \newcommand{\numberbyarticle}{%
240   \@removefromreset{theorem}{section}
241   \renewcommand\thetheorem{\arabic{theorem}}}
242
243 %
244 % proof environments
245 %
246 \renewcommand{\qed}{\rule{0mm}{1mm}\hfill{\footnotesize\textsc{q.e.d.}}}
247 \renewcommand{\qedsymbol}{\rule{0mm}{1mm}\hfill \textsc{q.e.d.}}
248
249 \newenvironment{proofof}[2][Proof]%
250   {\begin{proof}[#1]%
251     \renewcommand{\qed}{\rule{0mm}{1mm}\hfill{\footnotesize\textsc{q.e.d.}}\ (#2)}}
252   {\end{proof}}
253
254 %
255 % table of contents
256 %
257 \renewcommand\contentsname{Table of Contents}
258
259 \renewcommand{\tableofcontents}{%
260   \clearemydoublepage
261   \thispagestyle{empty}
262   \begingroup
263     \vspace*{1em}
264     \parindent 0pt
265     \hrulefill \linebreak \null \vspace{-8pt}\par
266     {\Large\bfseries\contentsname}

```

```

267
268     }
269     \nobreak
270     \hrulefill \linebreak \null \vspace{-8pt}\par
271 \endgroup
272 \vskip3\baselineskip
273 \@starttoc{toc}
274 \pagestyle{headings}
275 \markboth{\contentsname}{\contentsname}
276 \clearemptydoublepage
277 }
278
279 %
280 % part
281 %
282 % FIXME: add part code
283
284 %
285 % chapter
286 %
287 \def\@makechapterhead#1{%
288   \thispagestyle{empty}
289   \vspace*{1em}
290   \begingroup
291     \parindent 0pt
292     \hrulefill \linebreak \null \vspace{-8pt}\par
293     \ifnum \c@secnumdepth >\m@ne
294       \if@mainmatter
295         {\Large\bfseries \@chapapp\space \thechapter}
296
297       }
298     \fi
299     \fi
300     \interlinepenalty\@M
301     {\Large\bfseries #1}
302
303   }
304   \nobreak
305   \hrulefill \linebreak \null \vspace{-8pt}\par
306 \endgroup
307 \vskip 40\p@
308 \renewcommand{\leftmark}{\@chapapp\space \thechapter}
309 \renewcommand{\rightmark}{#1}
310 }
311
312 \def\@makeschapterhead#1{%
313   \thispagestyle{empty}
314   \vspace*{1em}
315   \begingroup
316     \parindent 0pt
317     \hrulefill \linebreak \null \vspace{-8pt}\par
318     {\Large\bfseries #1}
319
320   }

```

```

321     \nobreak
322     \hrulefill \linebreak \null \vspace{-8pt}\par
323 \endgroup
324 \vskip 40\p@
325 \renewcommand{\leftmark}{#1}
326 \renewcommand{\rightmark}{#1}
327 }
328
329 \def\l@chapter#1#2{\addpenalty{-\@highpenalty}%
330   \vskip 1.0em plus\p@
331   \@tempdima 1.5em
332   \begingroup
333     \parindent \z@ \rightskip \@pnumwidth
334     \parfillskip -\@pnumwidth
335     \leavevmode
336     #1 \dotfill #2\par
337     \penalty\@highpenalty
338   \endgroup}
339
340 %
341 % set the section numbering depth
342 %
343 \setcounter{secnumdepth}{5}
344
345 %
346 % section
347 %
348 \def\thesection{\arabic{section}} % blow away chapter numbers
349
350 \def\section{\@startsection{section}{1}{\z@}%
351               {-2ex plus -.5ex minus -.2ex}%
352               {.8ex plus .08ex}%
353               {\raggedright\large\bf}}
354 %
355 % subsection
356 %
357 \def\subsection{\@startsection{subsection}{2}{\z@}%
358               {-1.5ex plus -.25ex minus -.1ex}%
359               {.6ex plus .06ex}%
360               {\raggedright\normalsize\bf}}
361
362 %
363 % subsubsection
364 %
365 \def\subsubsection{\@startsection{subsubsection}{3}{\z@}%
366               {-1ex plus -.15ex minus -.06ex}%
367               {.4ex plus .04ex}%
368               {\raggedright\normalsize\bf}}
369
370 %
371 % paragraph
372 %
373 \def\paragraph{\@startsection{paragraph}{4}{\z@}%
374               {.5ex plus .05ex minus .025ex}%

```

```

375             {- .66em}%
376             {\normalsize\bf}}
377
378 %
379 % subparagraph
380 %
381 \def\subparagraph{\@startsection{subparagraph}{5}{\parindent}%
382             {.25ex plus .01ex minus .005ex}%
383             {- .66em}%
384             {\normalsize\bf}}
385
386 %
387 % appendix
388 %
389 \renewcommand\appendix{\par
390     \setcounter{section}{0}%
391     \gdef\thesection{\appendixname{} \@Alph\c@section}}
392
393 \newcommand\main{\par
394     \gdef\thesection{\@arabic\c@section}}
395
396 %
397 % tables and figures
398 %
399 \@addtoreset{figure}{article}
400 \renewcommand\thefigure{\arabic{figure}}
401
402 \@addtoreset{table}{article}
403 \renewcommand\thetable{\arabic{table}}
404
405 %
406 % bibliography
407 %
408 \renewcommand{\bibname}{References}
409
410 \renewenvironment{thebibliography}[1]{%
411     \vskip1cm
412     \section*{\bibname}%
413     \list{\@biblabel{\@arabic\c@enumiv}}%
414         {\settowidth\labelwidth{\@biblabel{#1}}%
415         \leftmargin\labelwidth
416         \advance\leftmargin\labelsep
417         \@openbib@code
418         \usecounter{enumiv}%
419         \let\p@enumiv\@empty
420         \renewcommand\theenumiv{\@arabic\c@enumiv}}%
421     \sloppy
422     \clubpenalty4000
423     \@clubpenalty \clubpenalty
424     \widowpenalty4000%
425     \sfcode'\.\@m}
426     {\def\@noitemerr
427         {\@latex@warning{Empty 'thebibliography' environment}}}%
428     \endlist}

```

```

429
430 %
431 % received, revised, accepted
432 %
433 \newcommand\receivedtext{%
434   \bigskip\noindent
435   \begingroup
436     \if!\@received!\else{\scriptsize Received: \@received}\[-.3em] \fi
437     \if!\@revised!\else{\scriptsize Revised: \@revised}\[-.3em] \fi
438     \if!\@accepted!\else{\scriptsize Accepted: \@accepted} \fi
439   \endgroup
440 }
441
442 \def\received#1{\gdef\@received{#1}}
443 \def\revised#1{\gdef\@revised{#1}}
444 \def\accepted#1{\gdef\@accepted{#1}}
445
446 %
447 % abstract
448 %
449 \newcommand\abstractname{Abstract}
450
451 \newenvironment{abstract}{%
452   \small
453   \begin{center}%
454     {\bfseries \abstractname\vspace{-.5em}\vspace{\z@}}%
455   \end{center}%
456   \quotation}
457   {\endquotation}
458
459 %
460 % caption
461 %
462 \long\def\@makecaption#1#2{%
463   \vskip 10\p@
464   \setbox\@tempboxa\hbox{#1. #2}%
465   \ifdim \wd\@tempboxa >\hsize
466     #1. #2\par
467   \else
468     \hbox to\hsize{\hfil\box\@tempboxa\hfil}%
469   \fi}
470
471 %
472 % quote, quotation
473 %
474 \renewenvironment{quotation}%
475   {\list{}}%
476   {\listparindent 1.5em%
477     \itemindent \listparindent
478     \rightmargin \leftmargin
479     \parsep \z@ \@plus\p@}%
480   \small%
481   \item\relax}%
482   {\endlist}

```

```
483 \renewenvironment{quote}%  
484     {\list{}%  
485       {\rightmargin\leftmargin}%  
486       \small%  
487       \item\relax}%  
488     {\endlist}
```

The End.