The \texttt{tocdata} package

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Optionally prints author, artist, or other data on a line of the \texttt{TOC/LOF}.

\textbf{Abstract}

The \texttt{tocdata} package adds information such as an author or artist to an entry in the table of contents or list of figures or new float type. This new information is placed on a single line along with the caption and page number, as is commonly done in collections of literature, poetry, or art work.

\texttt{tocdata} works with the \texttt{TOC/LOF} formatting of the default \LaTeX{} classes, \texttt{memoir}, \texttt{koma-script}, and with \texttt{titletoc}, \texttt{tocloft}, \texttt{tocbasic}, and \texttt{tocstyle}. 
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“Go uses the most elemental materials and concepts — line and circle, wood and stone, black and white — combining them with simple rules to generate subtle strategies and complex tactics that stagger the imagination.”

Iwamoto Kaoru — former Honinbo title holder

Quotation 1: Go uses the most elemental materials and concepts …

1 Introduction

— Brian Dunn

Anthologies may be printed with the author alongside each title in the table of contents. Many commonly-recommended methods for doing this with \LaTeX, such as those linked to in section 2, place the author above or below the title and page number, but seldom on the same line.

The \texttt{tocdata} package provides some basic infrastructure to help add some information to a line in the table of contents, after the title and just before the page number. This function works with the standard \LaTeX classes, or with either of the \texttt{titletoc} or \texttt{tocloft} packages.

Additionally, user-level macros are provided which add the author's name to a chapter or section, and add the author's or artist's name and optional additional text to a figure. Author and artist names are also added to the index.

As examples of the use of these high-level macros, the major section headings of this documentation have the author's name applied, and additional figures, illustrations, and quotes are supplied as well. The results are demonstrated in the table of contents, list of figures, list of illustrations, list of quotes, and the index.\footnote{Yes, I do recognize the absurdity of placing my own name in the index amongst the likes of Churchill, Genbi, Herschel, Kaoru, Newton …}
Illustration 1: The Crazy Engineer

2 Other methods

— Various Authors

For other methods which place the author on a separate line from the title, see the following.

Note that these methods will be preferable if a larger amount of information is to be placed for each title, such that it usually would not all fit on one line in the table of contents.

http://tex.stackexchange.com/questions/47554/add-authors-name-automatically-while-building-toc


3 How to use tocdata

— Brian Dunn

This section shows how to use the tocdata package.

There are several layers of macros:

- The lowest level provides the basic infrastructure for inserting information into the table of contents, along with hooks for the titletoc and tocloft packages.

- The intermediate-level macro is `\tocdata`, which may be used to manually add a piece of data to a `\chapter`, `\section`, or `\caption`. `\tocdataformat` is also provided to control the appearance of this data in the TOC/LOF.

- At the highest level is a sample implementation of user-level macros which provides an easy way to create chapters, sections, and figures with associated authors and artists, along with supplemental information for figures, and automatic index entries.

3.1 Basic setup

3.1.1 Preamble

tocdata may be used with either the tocloft or titletoc package, or neither.

In the preamble, use:
\usepackage{tocdata}
\usepackage{titletoc}% optional
\usepackage{tocloft}% optional

3.2 Mid-level applications

Should the user only wish to add a bit of text into the \toc/Lof, the \tocdata macro may be used just before the sectioning or caption command, as shown below.

3.2.1 Font control in the toc/Lof

\set\tocdataformat \langle\text\rangle
To control the font and formatting used for the author on the table-of-contents line, the default is:
\newcommand{\tocdataformat}\[1\]{\normalfont\textit{\small#1}}
You may change to other font options, add parentheses, etc.:
\renewcommand{\tocdataformat}\[1\]{\normalfont\textsc{\footnotesize\qquad --- (#1)}}

3.2.2 Adding toc data per section

\tocdata \langle\text\rangle
Before each \chapter or \section which is to have an author or other data:
\tocdata{toc}{Author's Name}
\chapter{Chapter Title} -or- \section{Section Title}

3.2.3 Adding lof data per figure

Before each \caption which is to have an artist or author:
\tocdata{lof}{Artist's/Author's Name}
\caption{Figure Title}
You may wish to print the artist's name in the figure as well.
3.3 High-level user macros

Additional macros are given in section 4.8. These are user-level sectioning and captioning commands which add the names to the `toc` and `lof`, and also add the artist’s name and optional additional text to a figure or other float (as in Figure 2), and also add the names to the index. An optional prefix and suffix may be attached to the names (as in Figure 2), and these will be printed at the section heading or caption, but not in the `toc`/`lof` or in the index.

These macros may be ignored or modified as needed.

3.3.1 Sectioning commands with authors

To use these macros, do not use `\tocdata` as shown above, but instead use, in the place of `\part`:

```
\partauthor[list entry]{Title}[Prefix]{First}{Last}[Suffix]
```

Likewise for chapters, sections, and subsections.

3.3.2 Figure captions with author/artist names and additional text

For figures, in the place of `\caption`, use:

```
\captionartist[list entry]{Title}[Text][Prefix]{First}{Last}[Suffix]
```

- or -

```
\captionauthor[list entry]{Title}[Text][Prefix]{First}{Last}[Suffix]
```

By default, `\captionartist` prints the artist centered below the figure, and `\captionauthor` prints the author below and flush right, without an extra vertical skip.

If you are using the optional prefix, the optional text must also be given, even if it is empty. For example, use:

```
\captionartist{Title}[[Sir]{Isaac}{Newton}
```

(If only one optional argument is given before the first name, it will be interpreted as the optional text, not as the optional prefix.)

**Optional arguments**

```
\captionartist* \captionauthor*
```

If you are using the `caption` package or another package which supports `\caption*`, you may use `\captionartist*` and `\captionauthor*` with `tocdata`. The artist/author and supplemental text will still be printed below the figure, and an unnumbered caption will be generated, even though a `lof` entry will not be made.
\caption{caption package}

Should you mistakenly use `\captionartist` or `\captionauthor` without the `caption` package, expect to get a caption with a visible star in it. To fix the problem:
`\usepackage{caption}

3.3.3 Formatting in sections and figures

To change the formatting of the author names printed after each chapter or section, or to remove them entirely, use these macros, as described in section 4.8 on page 20.
`\tocdatachapterprint` and `\tocdatasectionprint` by default depend on `\tocdatapartprint`, so if it is redefined the others will have to be redefined as well.
To change the formatting of a figure's artist's name or author's name and optional text, use these macros, also described in section 4.8.

3.3.4 Text justification

The text alignment of artists, artists' additional text, authors, and authors' additional text may be set using these macros. All following figures use the selected justification until it is changed to another.
ALEXANDER POPE

Illustration from *About Quail*

*McGuffey’s Fifth Eclectic Reader*

Illustration 2: Quail
4 Implementation

— Brian Dunn

Below, the `tocdata` code section contains the low-level code used to place the data into the table of contents and list of figures, as well as the code to control the font used while doing so.

Next are sections used to support the default \LaTeX{} classes, as well as `titletoc` and `tocloft`.

Finally, the high-level macros are provided. The user may ignore or redefine these as desired.

4.1 Requirements

1 \RequirePackage{xparse}
2 \RequirePackage{etoolbox}
3 \RequirePackage{xpatch}

Require that `titletoc` and `tocloft` be loaded after `tocdata`, so that `tocdata` can patch the \LaTeX{} core definitions first.

4 @ifpackageloaded{titletoc}{
5 \PackageError{tocdata}{
6  \%
7  Load titletoc after tocdaten%  
8  }
9  \%
10  Move \protect\usepackage{titletoc} after \protect\usepackage{tocdata}.%  
11  }
12 }{}
Prevent the use of both titletoc and tocloft.

\AtBeginDocument{
\@ifpackageloaded{titletoc}{
  \@ifpackageloaded{tocloft}{
    \PackageError{tocdata}{%
    Both titletoc and tocloft are being used.\MessageBreak
    Load only one%
    }{}
    }{}
  }{}
}{

4.2  tocdata code

TD@thistocdata  Storage for the data to be added to the end of the toc entry:

  \newcommand{TD@thistocdata}{}

\settocdata  Written to the .toc or .lof file, assigns TD@thistocdata:

  \newcommand{\settocdata}{[1]{\renewcommand{TD@thistocdata}{#1}}}

\tocdata  {{toc or lof}}{{text}}
To be called by a higher-level macro to assign data to a .toc or .lof file:

\newcommand{\tocdata}[2]{% 
  \@bsphack\addtocontents{#1}{\protect\settocdata{#2}}\@esphack% 
}\tocdatafont{⟨text⟩} Provided for compatibility with older documents. Instead, use and redefine \tocdatafont for newer documents.

\newcommand{\tocdatafont}[1]{{\normalfont\textit{\small#1}}} 
\tocdataformat{⟨text⟩}

Controls the font and formatting for the TOC data:

\renewcommand{\tocdataformat}[1]{\textit{#1}} 
\def\tocdataformat{\tocdatafont}

\TD@usetocdata To be inserted into low-level toc-generation code where the data should appear.

See the example using titletoc, below.

Prints the data, then clears the storage so it is not printed again.

\newcommand{\TD@usetocdata}{% 
  \ifdefvoid{\TD@thistocdata}{}{% 
    \tocdataformat{\TD@thistocdata}% 
    \global\def\TD@thistocdata{}% 
  }% 
}\TD@checktocdatafont{⟨text⟩} 

Used to detect whether the user redefined \tocdatafont, in which case a warning is issued to use \tocdataformat instead.

\let\TD@checktocdatafont\tocdatafont
\AtBeginDocument{ 
  \ifdefequal{\TD@checktocdatafont}{\tocdatafont}{% 
    \PackageWarningNoLine{tocdata}{% 
      You have redefined \protect\tocdatafont,\MessageBreak 
      which has been deprecated. Please redefine\MessageBreak 
      \protect\tocdataformat\space instead}% 
  }% 
}
4.3 Standard \LaTeX patches

\TD@patchstandardlatex  Patches standard \LaTeX toc formatting.

\newcommand*{\TD@patchstandardlatex}{

\Dottedtocline

\TD@dottedtocline  Patched for tocdata.

\xpatchcmd{\Dottedtocline}

\Dottedtocline

Could not patch LaTeX core \protect\Dottedtocline.\MessageBreak
Authors may not appear in TOC, LOF

\l@part  Patched for tocdata.

\ifclassloaded{memoir}{}
\ifpackage{tocbasic}{}
\xpatchcmd{\l@part}

\l@part

\ifclassloaded{memoir}{}
\ifpackage{tocbasic}{}
\ifundefined{chapter}{}
\xpatchcmd{\l@chapter}

\l@chapter  Patched for tocdata.

\ifclassloaded{memoir}{}
\ifpackage{tocbasic}{}
\ifundefined{chapter}{}
\xpatchcmd{\l@chapter}
\section*{Greek Alphabet}

Figure 4: Pi

\section*{\texttt{\textbackslash l@section} Patched for \texttt{tocdata}.}

\AtBeginDocument{\ifclassloaded{article}{\xpatchcmd{\l@section}{\hfil\nobreak}{\hfil\TD@usetocdata\nobreak}{}{}}{\TD@patchstandardlatex}

Patch standard \LaTeX if not using \texttt{lwp}, or if \texttt{lwp} is used in print mode:

\AtBeginDocument{\ifpackageloaded{titletoc}{\titlecontents

A set of \texttt{titletoc} commands which set up the formatting of the \texttt{toc} entries. These are patched \AtBeginDocument, after user customizations in the preamble, to include the \texttt{tocdata} just after the leader (\texttt{\textbackslash titlerule*}), and just before the page number.

These macros also include spacing commands, and thus may need to be redefined by the user.
The default macros are patched via the \LaTeX core. The following are only necessary if \texttt{titlecontents} was used. Since every combination is tried, but will only succeed if \texttt{titlecontents} was used, no warnings are printed if the patch fails.

\begin{verbatim}
\newcommand*{\TD@titletoc@patch}{%
\expandafter\xpatchcmd\csname ttl@savel@#1\endcsname
{\nobreak\hfil\nobreak}
{\nobreak\hfil\TD@usetocdata\nobreak}
{\}
{%
\PackageWarningNoLine{tocdata}{%
Could not patch titletoc ttl@savel@#1.\MessageBreak
Authors may not appear in TOC, LOF}
}\expandafter\xpatchcmd\csname l@#1\endcsname
{\contentspage}
{\TD@usetocdata\contentspage}
{\}
{%
\PackageWarningNoLine{tocdata}{%
Could not patch titletoc l@#1.\MessageBreak
Authors may not appear in TOC, LOF}
}\TD@titletoc@patch{part}
@ifundefined{chapter}{}{\TD@titletoc@patch{chapter}}
\TD@titletoc@patch{section}
\TD@titletoc@patch{subsection}
\TD@titletoc@patch{subsubsection}
\TD@titletoc@patch{paragraph}
\TD@titletoc@patch{subparagraph}
\TD@titletoc@patch{figure}
\TD@titletoc@patch{table}
}\end{verbatim}

4.5 \texttt{tocloft} and \texttt{memoir} support

If \texttt{tocloft} is loaded, the following patches are applied. \texttt{memoir} emulates \texttt{tocloft}, so it is patched here as well.

\begin{verbatim}
\AtBeginDocument{
@ifclassloaded{memoir}
{\TD@titletoc@patch{part}}
@ifundefined{chapter}{}{\TD@titletoc@patch{chapter}}
\TD@titletoc@patch{section}
\TD@titletoc@patch{subsection}
\TD@titletoc@patch{subsubsection}
\TD@titletoc@patch{paragraph}
\TD@titletoc@patch{subparagraph}
\TD@titletoc@patch{figure}
\TD@titletoc@patch{table}
}% end of \ifpackageloaded{titletoc}
}% end of \AtBeginDocument
\end{verbatim}
A set of commands used by \texttt{tocloft} to typeset the leader between the title and the page number. These are patched to print the tocdata just after the leader.

\begin{verbatim}
\if@cfthaschapter
  \appto{\cftchapleader}{\TD@usetocdata}
\fi
\appto{\cftsecleader}{\TD@usetocdata}
\appto{\cftsubsecleader}{\TD@usetocdata}
\appto{\cftsubsubsecleader}{\TD@usetocdata}
\appto{\cftparaleader}{\TD@usetocdata}
\appto{\cftsubparaleader}{\TD@usetocdata}
\appto{\cftfigleader}{\TD@usetocdata}
\appto{\cfttableleader}{\TD@usetocdata}
\appto{\cftsubfigleader}{\TD@usetocdata}
\appto{\cftsubtableleader}{\TD@usetocdata}
\end{verbatim}

There is no easy way to patch this...\TD@usetocdata is inserted near the end of the following:

\begin{verbatim}
\AtBeginDocument{
  \ifpackageloaded{tocbasic}{
    \xpatchcmd{\scr@dte@tocline}{\TD@usetocdata}{\cftdata}{\typeout{\string\texttt{\cftdata}}}{}
  }
}
\end{verbatim}

\section{Koma-script tocbasic support}

There is no easy way to patch this...\TD@usetocdata is inserted near the end of the following:
4.7 toestyle support

\AtBeginDocument{
  \ifpackageloaded{toestyle}{
    \patchcmd{toestyle}{\dottedtocline}{% 
      \if\toystyle@feature@leaders\relax
        \leaders\hbox{$\m@th \mkern \@dotsep mu\hbox{\toystyle@feature@dothook .}$}\hfill
      \else
        \hbox{\toystyle@leaders}
      \fi
    \else
      \toystyle@leaders
    \fi
  }% 
  \PackageWarningNoLine{tocdata}{% 
    Could not patch toystyle \protect\dottedtocline.\MessageBreak
    Authors may not appear in TOC, LOF} 
}{}%
4.8 User-level macros

Example user-level macros follow.

These macros are in addition to the standard sectioning and caption commands, adding first and last names for the table of contents and list of figures. For parts, chapters, sections, and subsections, the author's name with optional prefix and suffix are also added below the title. For figures, `\captionauthor` also prints the figure's artist's name with optional prefix and suffix just below the figure.

The regular sectioning and caption commands may still be used for anything which does not have an author/artist name.

4.8.1 User customization

\TD optionalnameprint \{\langle name\rangle\}
Add optional artist's name and the following space.

\newcommand{\TDoptionalnameprint}[1]
\begin{verbatim}
  \ifblank{#1}%
    {#1~}%
\end{verbatim}

\tocdatapartprint{⟨prefix⟩}{⟨first⟩}{⟨last⟩}{⟨suffix⟩}

User-redefinable macro to print the author's name underneath the part title.

\newcommand{\tocdatapartprint}[4]
\begin{verbatim}
  \par\noindent
  \textit{\hspace*{4em}--- \TDoptionalnameprint{#1}\TDoptionalnameprint{#2}\hspace*{4em}}
\end{verbatim}

\tocdatachapterprint{⟨prefix⟩}{⟨first⟩}{⟨last⟩}{⟨suffix⟩}

User-redefinable macro to print the author's name underneath the chapter title.

\ifundefined{chapter}
\else
\let\tocdatachapterprint\tocdatapartprint
\fi

\tocdatasubsectionprint{⟨prefix⟩}{⟨first⟩}{⟨last⟩}{⟨suffix⟩}

User-redefinable macro to print the author's name underneath the subsection title.

\let\tocdatasubsectionprint\tocdatapartprint
User-redefinable macro to print the artist's name underneath the figure.

\newcommand{\tocdataartistprint}{\par\smallskip\TDartistauthorprint{artist}}

To remove the artist's name, redefine this as a null function taking four arguments:
\renewcommand{\tocdataartistprint}[4]{}

User-redefinable macro to print the author's name underneath the figure.

\newcommand{\tocdataauthorprint}{\par\smallskip\TDartistauthorprint{author}}

User-redefinable macro to print the (text)
4.8.2 Chapters and sections

With \texttt{book} or \texttt{report} classes, a starred \texttt{\part}'s name is printed on its own page, making it difficult to add an author's name. If the author's name is appended to the part's name, it also appears in name references as well. Thus, if using one of these classes and a starred \texttt{\part}, the author's name is not printed. Using an unstarred \texttt{\part} with an author's name does work as expected. The author's name is printed as part of the long name, but does not appear in the name reference, which uses the short name.
\newcommand*{\TD@sectionauthor}{\TD@sectionauthor{section}}
\newcommand*{\TD@chapterauthor}{\TD@sectionauthor{chapter}}
\newcommand*{\partauthor}{\TD@sectionauthor{part}}
\newcommand*{\chapterauthor}{\TD@sectionauthor{chapter}}
4.8.3 Figure artist name alignment

\TD@artistalign \textmd{Sets text alignment for the artist's name.}

\tdartistjustify \textmd{Sets justified text alignment for the artist's name.}

\tdartistcenter \textmd{Sets centered text alignment for the artist's name.}

\tdartistleft \textmd{Sets left text alignment for the artist's name.}

\tdartistright \textmd{Sets right text alignment for the artist's name.}

4.8.4 Figure author name alignment

\TD@authoralign \textmd{Sets text alignment for the author's name.}
\tdauthorjustify  Sets justified text alignment for the author’s name.

\newcommand{\tdauthorjustify}{% 356 \renewcommand{\TD@authoralign}{}}% 357 \renewcommand{\TD@authoralign}{}}% 358 

\tdauthorcenter  Sets centered text alignment for the author’s name.

\newcommand{\tdauthorcenter}{% 359 \renewcommand{\TD@authoralign}{\centering}}% 360 \renewcommand{\TD@authoralign}{\centering}}% 361 

\tdauthorleft  Sets left text alignment for the author’s name.

\newcommand{\tdauthorleft}{% 362 \renewcommand{\TD@authoralign}{\raggedright}}% 363 \renewcommand{\TD@authoralign}{\raggedright}}% 364 

\tdauthorright  Sets right text alignment for the author’s name.

\newcommand{\tdauthorright}{% 365 \renewcommand{\TD@authoralign}{\raggedleft}}% 366 \renewcommand{\TD@authoralign}{\raggedleft}}% 367 

\TD@artisttextalign  Sets text alignment in the optional text.

\newcommand{\TD@artisttextalign}{\centering}\TD@artisttextalign}{\centering}% 368 

\tdartisttextjustify  Sets justified text alignment in the optional text.

\newcommand{\tdartisttextjustify}{% 369 \renewcommand{\TD@artisttextalign}{}}% 370 \renewcommand{\TD@artisttextalign}{}}% 371 

\tdartisttextcenter  Sets centered text alignment in the optional text.

\newcommand{\tdartisttextcenter}{% 372 \renewcommand{\TD@artisttextalign}{\centering}}% 373 \renewcommand{\TD@artisttextalign}{\centering}}% 374 

\tdartisttextleft  Sets left text alignment in the optional text.
Sets right text alignment in the optional text.

\tdartisttextleft
Sets left text alignment in the optional text.

4.8.6 Figure author text alignment

\TD@authortextalign Sets text alignment in the optional text.

\tdauthortextright
Sets right text alignment in the optional text.

\tdauthortextjustify
Sets justified text alignment in the optional text.

\tdauthortextcenter
Sets centered text alignment in the optional text.

\tdauthortextleft
Sets left text alignment in the optional text.
4.8.7 Figure captions with artists and authors

These macros add optional supplemental text, which will be printed below the artist's name and above the caption, presuming that the caption is generated below the figure.

⚠️ Optional arguments

If using the optional prefix, the optional text must also be given, even if it is empty. For example, use:

\captionartist{Title}[]\text{Sir}\{Isaac}\{Newton\}

If only one optional argument is given before the first name, it will be interpreted as the optional text, not as the optional prefix.

\TD@captionartistauthor

Factored from \captionartist and \captionauthor, below.

\NewDocumentCommand{\TD@captionartistauthor}{m s o m +O{} O{} m m O{}}{\Print the artist's name next to the figure:
\csuse{tocdata#1print}{#6}{#7}{#8}{#9}\
If supplemental text is provided, print it below the author:
\ifblank{#5}{}{\par\csuse{tocdata#1textprint}{#5}}\
Remove any existing vertical space and only use \caption's built-in spacing:
\unskip}\IfBooleanTF{#2}{}{\IfValueTF{#3}{\caption*[#3]{#4}}{\caption*{#4}}}\
If starred, there should be no toc entry, so do not add tocdata. Use \caption* from the \caption or similar packages.
\IfBooleanTF{#2}{}{\IfValueTF{#3}{\caption*[#3]{#4}}{\caption*{#4}}}\
No starred, so remember the artist's name for inclusion in the \lof:
\tocdata{\csuse{ext@\@captype}}(#7 #8)
Create the caption depending on the optional name:

```latex
\IfValueTF{#3}{\caption[#3]{#4}}{\caption{#4}}% not starred
```

Create an index entry depending on whether there is a first name:

```latex
\ifblank{#7}{\index{#8}}{\index{#8, #7}}
```

\captionartist*

```
\captionartist*{(2: LOF entry) [(3: title)] [(4: supplemental text)] [(5: prefix)] [(6: first)] [(7: last)] [(8: suffix)]}
\newcommand*{\captionartist}{\TD@captionartistauthor{artist}}
```

\captionauthor*

```
\captionauthor*{(2: LOF entry) [(3: title)] [(4: supplemental text)] [(5: prefix)] [(6: first)] [(7: last)] [(8: suffix)]}
\newcommand*{\captionauthor}{\TD@captionartistauthor{author}}
```
From the series Uma Zukushi.

Illustration 3: Lacquer Go Board
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/TD@sectionauthor: Expands first name before index check ... 24
/DTartistauthorextprint: Added text alignment ... 22
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/tdartistjustif: etc. Added name alignment ... 25
/tdartisttextjustif: etc. Added text alignment ... 26
/tdauthorjustif: etc. Added name alignment ... 26
/tdauthortextjustif: etc. Added text alignment ... 27
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/TD@sectionauthor: Factored ... 24
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/DTartistauthorprint: Improved font control ... 22
/DTartistauthorextprint: Improved font control ... 22
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“Now this is not the end. It is not even the beginning of the end. But it is, perhaps, the end of the beginning.”

Sir Winston Leonard Spencer Churchill

(Full name used for demonstration purposes.)

Quotation 2: Now this is not the end …

Ω

Greek Alphabet

Figure 6: Omega