`dcm.sty`: An Infrastructure for marking up Dublin Core Metadata in LaTeX documents*

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1 Introduction

The `dcm` package allows mark up Dublin Core Metadata [DCM03] in LaTeX documents so that it can be harvested by automated tools or exported to PDF[1]. This package allows to attribute authorship to arbitrary text fragments.[2]

2 The User Interface

2.1 Package Options

showmeta   The `dcm` package takes a single option: `showmeta`. If this is set, then the metadata keys are shown (see [Koh15] for details and customization options).

2.2 The DC Metadata Block

DCmetadata   The `dcm` provides the environment `DCmetadata` for Dublin Core Metadata Blocks. `DCmetadata` defines local macros for the specifying the relevant Dublin Core metadata fields and takes an optional argument that specifies the presentation of the metadata block, see Figure 1 for an example which would generate the title block for the `dcm` package. Let us now come to the macros themselves

\DCMcreators   The `\DCMcreators` and `\DCMcontributors` macros are used to specify the
\DCMcontributors   authors and contributors to a text fragments. These macros take one argument, the authorship of a document specified in terms of `id`s of persons specified via `\WAperson` before. They can occur multiply in a metadata block.

\DCMtitle   The `\DCMtitle` macro takes one argument, the
\DCMshorttitle   The `\DCMshorttitle` macro takes one argument, the
\DCMsubject   The `\DCMsubject` macro takes one argument, the
\DCMdescription   The `\DCMdescription` macro takes one argument, the
\DCMpublisher   The `\DCMpublisher` macro takes one argument, the
\DCMdate   The `\DCMdate` macro takes one argument, the
\DCMtype   The `\DCMtype` macro takes one argument, the
\DCMidentifier   The `\DCMidentifier` macro takes two arguments, the first one is the identification system, and the second one the identifier string itself.
\DCMsource   The `\DCMsource` macro takes one argument, the
\DCMlanguage   The `\DCMlanguage` macro takes one argument, the
\DCMrelation   The `\DCMrelation` macro takes one argument, the
\DCMrights   The `\DCMrights` macro takes one argument, the
\DCMlicense   The `\DCMlicense` macro takes one argument, the
\DCMabstract   The `\DCMabstract` macro takes one argument, the
\DCMlicensenotice   The `\DCMlicensenotice` macro takes one argument, the
\DCMcopyrightnotice   The `\DCMcopyrightnotice` macro takes one argument, the
\DCMcclicense   The `\DCMcclicense` macro
\attribution

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[1]EDNOTE: This still needs to be implemented, see http://www.wlug.org.nz/PdfLatexNotes for details

[2]EDNOTE: continue

```
\begin{DCmetadata}[maketitle]
  \DCMtitle{An Infrastructure for marking up Dublin Core Metadata in
        {\LaTeX} documents\thanks{Version {\fileversion}
          (last revised {\filedate})}}
  \DCMcreators{miko,jdoe}
  \DCMdate{\today}
  \DCMcopyrightnotice{2008}{Michael Kohlhase}
  \DCMlicensenotice{Copyright (c) 2008 Michael Kohlhase, all rights
    reserved. This file is released under the LaTeX Project Public
    License (LPPL)}
  \DCMabstract{The {\texttt{dcm}} packge allows mark up Dublin
    Core Metadata in {\LaTeX} documents that can be harvested by
    automated tools or exported to PDF, while at the same time
    generating conventional title information.}
\end{DCmetadata}
```

Example 1: The DC Metadata block for the `dcm` package documentation

2.3   DCM Metadata Block Styles

The `DCmetadata` environment takes an optional argument that specifies the style
`maketitle` the metadata block is rendered in. The `dcm` package supplies two styles: `maketitle`
`titlepage` and `titlepage`. The former uses the `\maketitle` macro from the calling class to
assemble a title, whereas the latter builds a title page from scratch. The title
block of this documentation has been created by the `maketitle` style.

To add a further metadata block style $\langle sty \rangle$, we simply have to supply a
`\dcm@*@block`   `\dcm@`$\langle sty \rangle$`@block` macro that expands to the intended presentation. This macro
does not take any arguments, but can use the internal token registers defined
by the `DCmetadata` environment. Generally, for any of the metadata commands
`\DCM`$\langle md \rangle$ defined in ?user.dcm.mdblock? there is a token register `\dcm@`$\langle md \rangle$ that
contains the value specified in the key.

2.4   Configuration

The `dcm` package provides a set of macros that customize (e.g. for multiple lan-
`\dcm@abstract@heading` guages) the generated content.
`\dcm@creators@heading`
`\dcm@contributors@connector`
`\dcm@chapter@heading`
`\dcm@section@heading`
`\dcm@subsection@heading`
`\dcm@subsubsection@heading`

Macro	Default
\dcm@abstract@heading	Abstract
\dcm@creators@heading	Author(s)
\dcm@contributors@connector	with contributions from
\dcm@chapter@heading	Chapter
\dcm@section@heading	Section
\dcm@subsection@heading	Subsection
\dcm@subsubsection@heading	Subsubsection

3 Limitations

In this section we document known limitations. If you want to help alleviate them, please feel free to contact the package author. Some of them are currently discussed in the sTeX GitHub repository [sTeX].

1. none reported yet

4 The Implementation

4.1 Package Options

The first step is to declare (a few) package options that handle whether certain information is printed or not. They all come with their own conditionals that are set by the options.

```
1 ⟨∗package⟩
2 \DeclareOption*{\PassOptionsToPackage{\CurrentOption}{rdfmeta}
3                 \PassOptionsToPackage{\CurrentOption}{workaddress}}
4 \ProcessOptions
```

The first measure is to ensure that the KeyVal package is loaded (in the right version). For LaTeXML we also initialize the package inclusions.

```
5 \RequirePackage{workaddress}
6 \RequirePackage[sectioning]{rdfmeta}
```

4.2 The DC Metadata Block

Then we make an environment for defining the metadata. Note that since we have defined the omdoc:metadata element to auto-open and auto-close, we do not have to (and should not for that matter) supply it in the DCmetadata element.

DCmetadata

```
7 \newenvironment{DCmetadata}[1][]%
8 {\def\@style{#1}}% to set the way things are presented.
9 {\@ifundefined{dcm@\@style @block}%
10 {\message{style {\@style} not defined}}%
11 {\csname dcm@\@style @block\endcsname}}
```

Here come the constructors, most of them are relatively straightforward

\DCMcreators the `\DCMcreators` macro checks whether all ids are defined.

```
12 \def\DCMcreators#1{\@for\@I:=#1\do{\wa@ref@test{person}\@I{id}}
13 \gdef\dcm@creators{#1}}
```

\DCMcontributors the `\DCMcontributors` macro also checks whether all ids are defined.

```
14 \def\DCMcontributors#1{\@for\@I:=#1\do{\wa@ref@test{person}\@I{id}}%
15 \def\dcm@contributors{#1}}
```

\DCMtitle

```
16 \def\DCMtitle#1{\def\dcm@title{#1}\providecommand{\dcm@shorttitle}{#1}}
```

\DCMsubtitle

```
17 \def\dcm@subtitle{}
18 \def\DCMsubtitle#1{\def\dcm@subtitle{#1}}
```

\DCMshorttitle

```
19 \def\dcm@shorttitle{}
20 \def\DCMshorttitle#1{\def\dcm@shorttitle{#1}}
```

\DCMsubject

```
21 \def\DCMsubject#1{\def\dcm@subject{#1}}
```

\DCMdescription

```
22 \long\def\DCMdescription#1{\long\def\dcm@description{#1}}
```

\DCMpublisher

```
23 \def\DCMpublisher#1{\def\dcm@publisher{#1}}
```

EdN:3 \DCMdate the `\DCMdate` uses `\today` as a default[3]

```
24 \def\dcm@date{\today}
25 \def\DCMdate#1{\def\dcm@date{#1}}
```

\DCMtype

```
26 \def\DCMtype#1{\def\dcm@type{#1}}
```

\DCMidentifier

```
27 \def\DCMidentifier#1#2{\def\dcm@scheme{#1}\def\dcm@identifier{#2}}
```

\DCMsource

```
28 \def\DCMsource#1{\def\dcm@source{#1}}
```

\DCMlanguage

```
29 \def\DCMlanguage#1{\def\dcm@language{#1}}
```

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[3]EDNOTE: @DEYAN: do that in latexml

\DCMrelation

```
30 \def\DCMrelation#1{\def\dcm@relation{#1}}
```

\DCMrights

```
31 \def\DCMrights#1{\long\def\dcm@rights{#1}}
```

\DCMlicense

```
32 \def\DCMlicense#1{\def\dcm@license{#1}}
```

\DCMlicensenotice   here we have a default

```
33 \def\dcm@license{All rights reserved}
34 \def\DCMlicensenotice#1{\long\def\dcm@license{\\[1ex]License: #1}}
```

\DCMcopyrightnotice

```
35 \def\DCMcopyrightnotice#1#2{\DCMrights{Copyright {\copyright} #1: #2}}
```

\cclicense

```
36 \def\cclicense#1{\def\attribution{\def\dcm@by{yes}}
37  \def\noncommercial{\def\dcm@nc{yes}}
38  \def\sharealike{\defdcm@sharealike{yes}}
39  \def\noderivativeworks{\def\dcm@derivatives{no}}}
```

\DCMabstract

```
40 \long\def\DCMabstract#1{\long\def\dcm@abstract{#1}}
```

4.3   DCM Block Styles

We now define various commonly used styles.

\dcm@titlepage@block   This style builds up a title page from scratch

```
41 \def\dcm@titlepage@block{\begin{titlepage}
42   \null\vfil\vskip 60\p@
43   \begin{center}
44    \ifx\dcm@title\@empty
45    \PackageWarning{dcm}{No title specified}{\LARGE Add title here\par}
46    \else\LARGE \dcm@title \par\fi
47    \ifx\dcm@subtitle\@empty
48    \vskip 3em\Large \dcm@subtitle \par\vskip 3em
49    \else\large\lineskip .75em\WAauthorblock\dcm@creators\vskip 1.5em\fi
50    \ifx\dcm@date\@empty
51    \PackageWarning{dcm}{No date specified}{\large\today\par}
52    \else{\large\dcm@date\par}\vskip 2em\fi
53  \end{center}\vskip2em
54  \ifx\dcm@abstract\@empty
55  \PackageWarning{dcm}{No Abstract specified}\else
56  \begin{quote}\textbf\dcm@abstract@heading:\dcm@abstract\end{quote}\fi
57  \vskip 2em\par\vfil\noindent
58  {\small\noindent\dcm@rights\dcm@license}
59  \end{titlepage}}
```

`\dcm@maketitle@block` This style makes use of the title facility of the document class.

```
60 \def\dcm@maketitle@block{\def\@title{\dcm@title\ifx\dcm@subtitle\empty\else\newline\dcm@subtitl
61 \def\@author{\WAauthorblock\dcm@creators}%
62 \def\@date{\dcm@date}\maketitle}
```

4.4 Dealing with ISO Dates

The first step is to build a macro for making ISO dates.

```
63 \def\ISOtimestamp{\count1=\time\divide\count1 by 60 % hours
64 \count2=\count1\multiply\count2 by 60% minutes in \count1 hours
65 \count3=\time\advance\count3 by -\count2 % minutes
66 \the\year -\ifnum\month>9\else0\fi\the\month-\ifnum\day>9\else0\fi\the\day
67 T\ifnum\count1>9\else0\fi\the\count1:\ifnum\count3>9\else0\fi\the\count3:00Z}
```

4.5 Configuration

```
68 \def\dcm@abstract@heading{Abstract}
69 \def\dcm@creators@heading{Author(s)}
70 \def\dcm@contributors@connector{with contributions from}
71 \def\dcm@chapter@heading{Chapter}
72 \def\dcm@section@heading{Section}
73 \def\dcm@subsection@heading{Subsection}
74 \def\dcm@subsubsection@heading{Subsubsection}
75 \def\dcm@paragraph@heading{Paragraph}
76 \def\omdoc{OMDoc}
77 ⟨/package⟩
```

References

[DCM03] The DCMI Usage Board. *DCMI Metadata Terms*. DCMI Recommendation. Dublin Core Metadata Initiative, 2003. URL: http://dublincore.org/documents/dcmi-terms/.

[Koh15] Michael Kohlhase. *metakeys.sty: A generic framework for extensible Metadata in LATEX*. Tech. rep. Comprehensive TeX Archive Network (CTAN), 2015. URL: http://www.ctan.org/tex-archive/macros/latex/contrib/stex/metakeys/metakeys.pdf.

[sTeX] *KWARC/sTeX*. URL: https://svn.kwarc.info/repos/stex (visited on 05/15/2015).