

The L^AT_EX dtxdescribe Package

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Describe additional object types in dtx source files.

Abstract

The `doc` package includes tools for describing macros and environments in L^AT_EX source dtx format. The `dtxdescribe` package adds additional tools for describing booleans, lengths, counters, keys, packages, classes, options, files, commands, arguments, and other objects.

Each item is given a margin tag similar to `\DescribeEnv`, and is listed in the index by itself and also by category. Each item may be sorted further by an optional class. All index entries except code lines are hyperlinked.

The `dtxexample` environment is provided for typesetting example code and its results. Contents are displayed verbatim along with a caption and cross-referencing. They are then `\input` and executed, and the result is shown.

Environments are also provided for displaying verbatim or formatted source code, user-interface displays, and sidebars with titles.

Macros are provided for formatting the names of inline L^AT_EX objects such as packages and booleans, as well as program and file names, file types, internet objects, the names of certain programs, a number of logos, and inline dashes and slashes.

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1 Introduction

The `doc` package provides `\DescribeMacro` and `\DescribeEnv` to help document new macros and environments. Each generates a heading in the documentation, to which `\marg`, `\oarg`, and `\parg` may be added to identify arguments to be passed to the new object. Their names are added to the margin, and index entries are added, as well as group of entries for environments.

`dtxdescribe` extends this concept to include a number of additional objects, such as booleans and keys. To help identify what is being described in the margin, small tags are added to the name, such as “Env”, “Bool”, or “Key”. These new objects are also listed in the index with the same tag shown after their names, and also by group. Optional classes may be used to further categories index entries.

Modifications have been made to interact with `hyperref` to provide hyper links for regular index entries as well as the new `\Describe` entries.

Additional macros are provided to generate colored margin tags and warnings, and a new `dtxexample` environment demonstrates code examples.

This documentation and its index show examples of these macros in use.

While the index may appear to be overkill for a small package, keep in mind that it includes a number of fictional entries from the examples. Extensive cross-referencing can be useful for larger works. And, of course, you need not cross-reference everything!

2 Using dtxdescribe

Place `\usepackage{dtxdescribe}` in the `.dtx` file's driver section:

```
%<*driver>
\documentclass{ltxdoc}
...
\usepackage{lmodern}
...
\usepackage{dtxdescribe}
...
\usepackage{packagename} % the name of your new package
...
\usepackage[...]{hyperref}
\usepackage[...]{cleveref}
...
%</driver>
```

Various objects inside the `dtx` file may be described with `\DescribeBoolean`, `\DescribeLength`, `\DescribeCounter`, and related macros, similar to the already-familiar `\DescribeMacro` and `\DescribeEnv`.

Optional “classes” may be assigned to the objects being described, including the new versions of `\DescribeMacro` and `\DescribeEnv`. These classes are printed in the margin tag and index entry for each item, and also generate additional index entries sorted by class. This is especially useful for key/value sets, where several sets may appear in the same document.

inside a float The margin tag is not printed if the `\Describe` macros are used inside a float such as a table, but the index entries are still made.

`\margintag{text}` `\margintag{text}` may be used to place a colored tag in the margin to summarize paragraph contents or draw attention to an index destination.

 `\watchout[optional text]` `\watchout[optional text]` may be used to place a red warning sign in the margin, along with optional text.

The `dtxexample` environment may be used to typeset and execute small pieces of \LaTeX code as examples of its use. Optional cross-referencing notes may be used to refer to any example float being generated.

3 The macros, and the dtxexample environment

3.1 Macros and environments

`\DescribeMacro` [*class*] {*name*}

The preexisting macro from the doc package is redefined to create hyperlinked index entries, and include an optional class. A margin tag is created and an index entry is made. When the optional class is used, it is displayed in front of the margin tag, and is used to group an index entry by macro name and another index entry by class. An example would be to describe the float creation and caption setup for a new class of float, such as the `dtxexample` float and the example “photograph” float both found in the index for this document. See example 1 on page 16 for examples.

`\DescribeEnv` [*class*] {*environment name*}

The preexisting macro from the doc package is redefined to create hyperlinked index entries, include an optional class, and also to place an ‘Env’ tag in front of the name in the margin. See example 2 on page 17.

3.2 Arguments

The `\Describe. . .` macros may be followed by `\marg`, `\oarg`, and `\parg` to describe arguments passed to the macros.

`\marg` {*text*}

Shows a mandatory argument for a macro or environment.

The results looks like {*mandatory*}.

`\oarg` {*text*}

Shows an optional argument for a macro or environment.

The results looks like [*optional*].

`\parg` {*text*}

Used for “picture” arguments, such as coordinates.

The result looks like (<*coordinate*>).

`\DescribeArgument` [*class*] {*argument*}

May be used to describe actions taken when given certain macro arguments. These

will be given an ‘Arg’ margin tag and will appear in the index. The `class` may be used to categorize arguments by their macro or environment name. See example 9 on page 21.

3.3 Booleans, lengths, counters, keys

See example 4 on page 18.

`\DescribeBoolean` [*class*] {*name*}

Describes a boolean. Given a ‘Bool’ tag in the margin and index.

`\DescribeLength` [*class*] {*name*}

Describes a length. Given a ‘Len’ tag in the margin and index.

`\DescribeCounter` [*class*] {*name*}

Describes a counter. Given a ‘Ctr’ tag in the margin and index.

`\DescribeKey` [*class*] {*name*}

Describes a key. Given a ‘Key’ tag in the margin and index. The `class` may be used to categorize keys by their key/value group. See example 8 on page 20.

3.4 Packages, classes, options

`\DescribePackage` [*class*] {*name*}

Describes a package. Given a ‘Pkg’ tag in the margin and index.

`\DescribeClass` [*class*] {*name*}

Describes a L^AT_EX class. Given a ‘Cls’ tag in the margin and index.

`\DescribeOption` [*class*] {*name*}

Describes a L^AT_EX package or class option. Given an ‘Opt’ tag in the margin and index.

3.5 Files, programs, commands

`\DescribeFile` [*class*] {*name*}

Describes an operating-system file. Given a ‘File’ tag in the margin and index. The filename may have underscores.

`\DescribeProgram` [`<class>`] {`<name>`}

Describes an operating-system program. Given a ‘Prog’ tag in the margin and index. The program name may have underscores.

`\DescribeCommand` [`<class>`] {`<name>`}

Describes an operating-system command. Given a ‘Cmd’ tag in the margin and index. The command name may have underscores.

3.6 Other source objects

`\DescribeObject` [`<class>`] {`<name>`}

Describes an arbitrary programming object, such as a color definition or caption setup. A margin tag and index entry are created with `\ttfamily` type. When a class is used, it is pre-pended to the margin tag, appended to the index entry, and a second index entry is created grouped by class. If a macro name is to be described, use `\DescribeMacro` instead. See example 10 on page 22.

`\DescribeOther` [`<class>`] {`<name>`}

Describes an arbitrary non-programming object, such as a license agreement or credits. A margin tag and index entry are created in roman type. When a class is used, it is pre-pended to the margin tag, appended to the index entry, and a second index entry is created grouped by class. See example 11 on page 22.

3.7 In a description environment

To describe an object using a description environment, use the following. See example 12 on page 23.

`\ItemDescribeMacro` [`<class>`] {`<\name>`} A description.

`\ItemDescribeEnv` [`<class>`] {`<name>`} A description.

`\ItemDescribeArgument` [`<class>`] {`<argument>`} A description.

`\ItemDescribeBoolean` [`<class>`] {`<name>`} A description.

`\ItemDescribeLength` [`<class>`] {`<\name>`} A description.

`\ItemDescribeCounter` [`<class>`] {`<name>`} A description.

`\ItemDescribeKey` [`<class>`] {`<name>`} A description.

<code>\ItemDescribePackage</code>	<code>[\langle class \rangle] \{\langle package_name \rangle\}</code> With underscores.
<code>\ItemDescribeClass</code>	<code>[\langle class \rangle] \{\langle class_name \rangle\}</code> With underscores.
<code>\ItemDescribeOption</code>	<code>[\langle class \rangle] \{\langle name \rangle\}</code> A description.
<code>\ItemDescribeFile</code>	<code>[\langle class \rangle] \{\langle file_name \rangle\}</code> With underscores.
<code>\ItemDescribeProgram</code>	<code>[\langle class \rangle] \{\langle program_name \rangle\}</code> With underscores.
<code>\ItemDescribeCommand</code>	<code>[\langle class \rangle] \{\langle command_name \rangle\}</code> With underscores.
<code>\ItemDescribeObject</code>	<code>[\langle class \rangle] \{\langle name \rangle\}</code> A description.
<code>\ItemDescribeOther</code>	<code>[\langle class \rangle] \{\langle name \rangle\}</code> A description.

3.8 Defaults

<code>\DescribeDefault</code> Default: <code>value</code>	<code>\{\langle value \rangle\}</code> Shows the default value of a <code>\Describe. . .</code> item, such as displayed here. Place this macro immediately after the <code>\Describe. . .</code> macro and any arguments, but before the text description.
<code>\DescribeDefaultcolor</code> Default: <code>green!50!black</code>	The color of the margin tag used to show the default value. This is used by <code>\textcolor</code> to create the margin tag.

3.9 `\margintag`, `\watchout`

<code>\margintag</code>	<code>\{\langle text \rangle\}</code> Creates a colored margin tag. May be used to identify the topic of a paragraph or the destination of an arbitrary index entry.
<code>\margintag{example}</code>	
<code>\margintagcolor</code> Default: <code>blue!70!black</code>	The color of the <code>\margintag</code> .
<code>\watchout</code>	<code>[\langle text \rangle]</code> Creates a red margin tag with a warning sign and optional text. May be used to warn the reader of special instructions, etc. Without the optional text the warning sign is displayed by itself.
 <code>\watchout{example}</code>	
<code>\watchoutcolor</code> Default: <code>red!50!black</code>	The color of the <code>\watchout</code> .

3.10 dtxexample environment

Env dtxexample * [*Notes/cross-references*] {*caption & label*}

The `dtxexample` environment is useful for demonstrating a piece of \LaTeX code. The example is a simulated float with its own caption and optional label, along with optional notes and/or cross-referencing commands. The contents of the `dtxexample` environment are printed verbatim, then loaded and executed as \LaTeX code, showing the results just below the printed code. In the case of float commands, the floats are generated as expected somewhere nearby, and should be given their own labels. References to the float's labels may be placed in the optional argument to the `dtxexample` environment, and will be printed below the code.

The unstarred version places the code inside a minipage, forbidding a page break in the middle of the code listing. The starred version does not use a minipage. This is required when the code is too large to fit on a single page.

See example 13 for a demonstration of how `dtxexample` works.

`\dtxexamplecodename` The text name of the code section.
 Default: Code:
`\dtxexampleresultname` The text name of the result section.
 Default: Result:

3.11 noindmacro and noindenvironment environments

Env noindmacro {*\name*} To document macros which should not be included in the index.

Env noindenvironment {*name*} To document environments which should not be included in the index.

Replace

```
\begin{macro}{\macroname} \oarg{optional} \marg{mandatory}
...
\end{macro}
```

with

```
\begin{noindmacro}{\macroname} \oarg{optional} \marg{mandatory}
...
\end{noindmacro}
```

and similarly for `noindenvironment`.

3.12 sourceverb, sourcedisplay, UIdisplay, docsidebar

Env sourceverb [*<key/values>*] Display source code verbatim. Uses optional fancyvrb keys. Includes gobble=2 to absorb the leading% and space character of a dtx file source format. Because this is a verbatim environment, it *cannot* be used inside a macro.
 Default: gobble=2,
 tabsize=4,
 xleftmargin=2em

Env fsourceverb [*<key/values>*] Display source code verbatim inside a frame. A label may be included using the label key. Because this is a verbatim environment, it *cannot* be used inside a macro. See example 14 on page 25.
 Default: gobble=2,
 tabsize=4,
 xleftmargin=2em, frame=lines

Env sourcedisplay Display source code with manual formatting. This is not a verbatim environment. \textcolor, \textbf, and \emph may be used to highlight text. Macros must be escaped with \cs, characters such as { must be produced with \{, etc. \\ must be used to force a new line. \fquad, \fqquad, and \fqqqquad may be used to force indenting. Because this is *not* a verbatim environment, it *can* be used inside a macro. See example 15 on page 25.

\fquad Single-level indent inside a sourcedisplay.

\fqquad Double-level indent inside a sourcedisplay.

\fqqqquad Triple-level indent inside a sourcedisplay.

Env UIdisplay Displays a user interface, such as a dialog box entry or a menu selection. See example 16 on page 26. Also see the \UI macro..

\userentry {*<text to enter>*} Typeset something for the user to enter. Also see the \cmds macro.

\userentryname Text to tell the user to enter the following item. Change with \renewcommand.
 Default: Enter ⇒

Env docsidebar [*<title>*] Creates a sidebar within the document. See example 17 on page 27.

3.13 Formatted objects

Macros to format references to various kinds of objects.

This dtxdescribe package documentation uses erewhon, roboto, and inconsolata, along with metalogo, to demonstrate the following font effects.

3.13.1 L^AT_EX objects

\pkg packagename, also for a classname

<code>\env</code>	environment
<code>\ctr</code>	counter
<code>\bool</code>	boolean
<code>\optn</code>	option: to a macro, package, class
<code>\TOC</code>	toc: Table of contents.
<code>\LOF</code>	lof: List of figures.
<code>\LOT</code>	lot: List of tables.

3.13.2 Programs and commands

<code>\progcode</code>	inline program code: Escape underscores and other special characters such as {, %, \$.
<code>\prog</code>	<i>grep, make</i> : A program name. Underscores allowed.
<code>\filem</code>	file_name: Underscores allowed.
<code>\UI</code>	General user-interface text. What the user sees on the display. Also see the <code>UIDisplay</code> environment.
<code>\cmds</code>	commands to be entered: What the user enters. Escape underscores and other special characters such as {, %, \$. Also see the <code>\userentry</code> macro.

3.13.3 File types

<code>\ODT</code>	ODT OpenDocument Format word processing document
<code>\SVG</code>	SVG image format
<code>\PNG</code>	PNG image format
<code>\GIF</code>	GIF image format
<code>\JPG</code>	JPG image format
<code>\EPS</code>	EPS image format
<code>\PDF</code>	PDF image format
<code>\DVI</code>	DVI image format

3.13.4 Internet

<code>\UTF</code>	UTF: Unicode
<code>\URL</code>	URL: Uniform Resource Locator
<code>\element</code>	<element>: HTML/CSS element
<code>\attribute</code>	attribute: HTML/CSS attribute
<code>\HTML</code>	HTML: Hypertext Markup Language
<code>\HTMLfive</code>	HTML5: Old-style figure if font supports
<code>\CSS</code>	css: Cascading Style Sheet
<code>\CSSthree</code>	css3: Old-style figure if font supports
<code>\EPUB</code>	EPUB: E-book file format

3.13.5 Specific programs

<code>\tikz</code>	Tikz: Package logo
<code>\MathML</code>	MathML: Mathematical Markup Language
<code>\CTAN</code>	CTAN: Comprehensive T _E X Archive Network
<code>\TDS</code>	TDS: T _E X Directory Structure

3.13.6 Acronyms, brand names, trademarks

<code>\brand</code>	BRANDNAME, COMPANY NAME
<code>\acro</code>	ACRO: Acronym
<code>\supregistered</code>	Superscript trademark symbol [®]

3.14 Logos

Several additional logos are provided:

<code>\LuaTeX</code>	LuaT _E X
<code>\LuaLaTeX</code>	LuaL ^A T _E X

<code>\XeTeX</code>	$X_{\text{E}}\text{TeX}$, with reversed E if <code>graphics</code> is loaded.
<code>\XeLaTeX</code>	$X_{\text{E}}\text{L}^{\text{A}}\text{TeX}$, with reversed E if <code>graphics</code> is loaded.
<code>\AmS</code>	$\mathcal{A}\mathcal{M}\mathcal{S}$
<code>\LyX</code>	LyX
<code>\BibTeX</code>	$\text{B}\text{I}\text{B}\text{T}_{\text{E}}\text{X}$
<code>\MakeIndex</code>	<i>MakeIndex</i>
<code>\ConTeXt</code>	$\text{C}\text{o}\text{n}\text{T}_{\text{E}}\text{X}\text{t}$
<code>\MiKTeX</code>	$\text{M}\text{i}\text{K}\text{T}_{\text{E}}\text{X}$

3.15 Dashes and slashes

<code>\thinspace</code>	A breakable thin skip.
<code>\endash</code>	An endash: –
<code>\emdash</code>	An emdash: —
<code>\thinbrspace</code>	A thin space which allows a line break.
<code>\thinthinbrspace</code>	A very thin space which allows a line break.
<code>\Dash</code>	An unbreakable thin space, emdash, and breakable thin space: A — B
<code>\dash</code>	An unbreakable thin space, endash, and breakable thin space: A – B
<code>\Slash</code>	An unbreakable very thin space, a slash, and a breakable very thin space:

Command	Result
<code>A--B</code>	A–B (not breakable)
<code>A \dash B</code>	A–B (only breakable before the B)
<code>A -- B</code>	A–B (breakable before or after the dash)
<code>A---B</code>	A—B (not breakable)
<code>A \Dash B</code>	A—B (only breakable before the B)
<code>A --- B</code>	A—B (breakable before or after the dash)
<code>A/B</code>	A/B (not breakable)
<code>A \Slash B</code>	A/B (only breakable before the B)
<code>A / B</code>	A / B (breakable before or after the slash)
<code>A~/~B</code>	A / B (not breakable)

4 Examples

Example 1: Macros

Code:

```
\DescribeMacro{\mymacro} \oarg{optional} \marg{mandatory}
  A typical macro definition.
```

```
\DescribeMacro[photograph]{\DeclareFloatingEnvironment}
Create a photograph float. \bigskip
```

```
\DescribeMacro[photograph]{\captionsetup}
Caption settings for a photograph float.
```

```
\DescribeMacro[photograph]{\cnameref}
\pkg{cleveref} name for the photograph float.
```

Result:

```
\mymacro [optional] [mandatory] A typical macro definition.
```

```
[photograph] Create a photograph float.
```

```
\DeclareFloatingEnvironment
```

```
[photograph] \captionsetup Caption settings for a photograph float.
```

```
[photograph] \cnameref cleveref name for the photograph float.
```

The optional class is used to label and group tags and index entries. See this document's index entries for examples of this “photograph” class and the `dtxexample` class of macros.

The re-defined `\DescribeMacro`, `\DescribeEnv`, and all the following macros create [hyperlinks](#) hyperlinked index entries, along with regular uses of `\index`.

Example 2: Environment

Code:

```
\DescribeEnv{myenvironment} \marg{argument} Short description.
```

Result:

Env myenvironment {*argument*} Short description.

[add'l tags](#)

[index groups](#)

The re-defined `\DescribeEnv` adds an ‘Env’ tag to the margin, and adds “(environment)” to its own index entry. Note that environments and all the other new objects defined by this package each receives two index entries, one by name, and one grouped with others of its kind.

 **too much text**

Example 2 shows descriptive text on the same line as the `\DescribeEnvironment`. For macros and environments with many arguments after the name, it may be better to place any additional text in a following paragraph.

Example 3: Second Environment

Code:

```
\DescribeEnv[kindofenvironment]{otherenvironment}
  \oarg{opt args} \parg{coordinates} A description.
```

Result:

Env [kindofenvironment] [*opt args*] (*coordinates*) A description.
otherenvironment

The `otherenvironment` will be indexed by itself and also with `myenvironment` under the index entry “environments”, and also under the class `kindofenvironment`.

Example 4: Booleans and Counters

Code:

```
\DescribeBoolean[examples]{sampleboolean} Some description.
```

```
\DescribeCounter[examples]{samplecounter} Some description.
```

Result:

Bool [examples] sampleboolean Some description.

Ctr [examples] samplecounter Some description.

Most of the new `\Describe_____` macros behave like the new `\DescribeEnv`, placing a tag in the margin, an index entry by name, and another index entry by group.

Example 5: Lengths

Code:

```
\DescribeLength[photograph]{\photowidth} Some description.
```

Result:

Len [photograph] \photowidth Some description.

Lengths have a leading backslash, but are otherwise described the same as the rest of the objects.

Example 6: Packages, Classes, and Options

Code:

```
\DescribePackage[examples]{samplepackage}
  About a \LaTeX\ package.

\DescribeClass[examples]{sample_class}
  About a \LaTeX\ class.

\DescribeOption[examples]{sampleoption}
  About an option for a package or class.
```

Result:

Pkg [examples]	samplepackage	About a L ^A T _E X package.
Cls [examples]	sample_class	About a L ^A T _E X class.
Opt [examples]	sampleoption	About an option for a package or class.

Example 7: Files, Commands, and Programs

Code:

```
\DescribeFile[bigfiles]{really_big_file.txt} Some description.

\DescribeFile[bigfiles]{another_big_file.txt} Some description.

\DescribeFile{lone_file.txt} Some description.

\DescribeCommand{OS_command} An operating-system command.

\DescribeProgram{program_name} An operating-system program.
```

Result:

	File [bigfiles]	Some description.
really_big_file.txt		
	File [bigfiles]	Some description.
another_big_file.txt		
	File lone_file.txt	Some description.
	Cmd OS_command	An operating-system command.
	Prog program_name	An operating-system program.

Filenames, program names, and command names may have underscores, such as tested here. A class is used to group “bigfiles” together in the index.

Example 8: Keys

Code:

```
\DescribeKey[groupofkeys]{firstkey} About the first key  
of the |groupofkeys| set.
```

```
\DescribeKey[groupofkeys]{secondkey} About the second key  
of |groupofkeys|.
```

```
\DescribeKey[examples]{samplekey} About some key of |otherkeys|.
```

```
\DescribeKey[examples]{sampletwokey} About another key of |otherkeys|.
```

```
\DescribeKey{lonekey} A key without a class.
```

Result:

```
Key [groupofkeys] firstkey About the first key of the groupofkeys set.
```

```
Key [groupofkeys] secondkey About the second key of groupofkeys.
```

```
Key [examples] samplekey About some key of otherkeys.
```

```
Key [examples] sampletwokey About another key of otherkeys.
```

```
Key lonekey A key without a class.
```

See the index key groups.

Example 9: Arguments

Code:

```
\DescribeArgument[figure]{[H]}
What happens when a figure is [H]ere.

\DescribeArgument[figure]{[M]}
What happens when a figure is in the [M]argin.

\DescribeArgument[\cs{mymacro}]{bold}
What happens when \cs{mymacro} is given the |bold| argument.
```

Result:

```
Arg [figure] [H] What happens when a figure is [H]ere.
Arg [figure] [M] What happens when a figure is in the [M]argin.
Arg [\mymacro] bold What happens when \mymacro is given the bold argument.
```

Arguments behave like keys, and may have an optional class to identify their macro or environment, and group their entries in the index.

 **macro names** Note the need to use `\cs{mymacro}` for the macro's name.

Example 10: Object*Code:*

```

\DescribeObject[color]{somecolor}
  The color of something.

\DescribeObject[color]{othercolor}
  The other color.

\DescribeObject{randomobject} About some random object.

```

Result:

```

[color] somecolor  The color of something.
[color] othercolor The other color.
randomobject      About some random object.

```

Describes an arbitrary programming object, using `\ttfamily` text.

Example 11: Other*Code:*

```

\DescribeOther{license agreement}
The following is the fictional license agreement:

\DescribeOther{Before \env{myenvironment}}
  Actions to be done \cs{BeforeBeginEnvironment}.

\DescribeOther[otherclass]{Other Item} About the other item.

\DescribeOther[otherclass]{Additional Item} About the add'l item.

```

Result:

```

license agreement  The following is the fictional license agreement:
Before myenvironment Actions to be done \BeforeBeginEnvironment.
[otherclass] Other Item About the other item.
[otherclass] Additional Item About the add'l item.

```

Describes an arbitrary non-programming object, using roman text.

Example 12: Description environments

Code:

```
\begin{description}
\ItemDescribeMacro[desceexamples]{\macroname} Describe the macro.
\ItemDescribeBoolean[desceexamples]{\booleanname} Describe the boolean.
\ItemDescribeLength[desceexamples]{\lengthname} Describe the length.
\ItemDescribeKey[desceexamples]{\keyname} Describe the key.
\ItemDescribePackage[desceexamples]{\package_name} Describe the package.
\ItemDescribeClass[desceexamples]{\class_name} Describe the class.
\ItemDescribeFile[desceexamples]{\file_name} Describe the file.
\ItemDescribeProgram[desceexamples]{\program_name} Describe the program.
\ItemDescribeCommand[desceexamples]{\command_name} Describe the class.
\end{description}
```

Result:

[desceexamples] \macroname	\macroname: Describe the macro.
Bool [desceexamples] booleanname	booleanname: Describe the boolean.
Len [desceexamples] \lengthname	\lengthname: Describe the length.
Key [desceexamples] keyname	keyname: Describe the key.
Pkg [desceexamples] package_name	package_name: Describe the package.
Cls [desceexamples] class_name	class_name: Describe the class.
File [desceexamples] file_name	file_name: Describe the file.
Prog [desceexamples] program_name	program_name: Describe the program.
Cmd [desceexamples] command_name	command_name: Describe the class.

Uses a description environment to describe objects.

Contents of the figure.

Figure 1: A Figure

Example 13: dtxexample*Code:*

```
\begin{figure}
  \centering\fbbox{Contents of the figure.}
  \caption{A Figure}\label{fig:afigure}
\end{figure}
```

*Result:**See fig. 1*

Example 13, typeset above, was created with the following code:

```
\begin{dtxexample}[See \cref{fig:afigure}]
  {\env{dtxexample}\label{ex:dtxexample}}
\begin{figure}
  \centering\fbbox{Contents of the figure.}
  \caption{A Figure}\label{fig:afigure}
\end{figure}
\end{dtxexample}
```

When the example was created:

1. The “float” of type example was created, with the caption “dtxexample” and the label `ex:dtxexample`, which points to example 13.
2. The code was displayed verbatim.
3. The code was written to the file `dtxexample_cut.tex`.
4. The code was `\input` from `dtxexample_cut.tex`.
5. Executing the code created the figure with caption “A Figure” and label `fig:afigure`, which points to fig. 1.
6. The cross-reference to the figure was shown on the optional display line by the optional argument to `dtxexample`.
7. The starred form of `dtxexample` was used to create the closing rule below the code, since a float was being generated and nothing followed the code inline. An unstarred version would have created an extra rule.

Example 14: fsourceverb

Code:

```
% \begin{fsourceverb}[label=An fsourceverb example]
% \newcommand{fdosomething}[1][whattodo]{
%   doing #1
% }
% \end{fsourceverb}
```

Result:

```
_____ An fsourceverb example _____
\newcommand{fdosomething}[1][whattodo]{
  doing #1
}
```

(The leading % characters would be present in the dtx source.)

Example 15: sourcedisplay

Code:

```
\begin{sourcedisplay}
\cs{newcommand}\{dosomething\}[1][\textcolor{red}{whattodo}]{\{\}
\quad \textcolor{blue}{doing \textcolor{red}{\#1}}\}
\}
\end{sourcedisplay}
```

Result:

```
\newcommand{dosomething}[1][whattodo]{
  doing #1
}
```

Example 16: UIdisplay

Code:

```
Select:
\begin{UIdisplay}
  \textsf{Preferences $\to$ Plugins $\to$ Files $\to$ HTML}
\end{UIdisplay}
For the field
\begin{UIdisplay}
Title heading:
\end{UIdisplay}
\userentry{H1}
```

Result:

Select:

Preferences → Plugins → Files → HTML

For the field

Title heading:

Enter ⇒ **H1**

Example 17: docsidebar

Code:

Main text.

More main text.

```
\begin{docsidebar}[A title]
An aside, which may help explain something
incidental to the main text.
\end{docsidebar}
```

Additional main text.

Result:

Main text.

More main text.

A title

An aside, which may help explain something incidental to the main text.

Additional main text.

5 Usage notes

Placement of `\Describe` macros: Typically \LaTeX macro and environment definitions are enclosed in `macro` and `environment` environments at their place in the source code. `\DescribeMacro` and `\DescribeEnv` would be used elsewhere in the manual to describe how to use the code. `\DescribeBoolean` and such might be at their place in the source code, unless they are worthy of discussion for the end-user, in which case they should be in the “User’s Manual” section of the document.¹ It may be useful to use `\DeclareBoolean` and friends both at the code location and also in the User’s Manual section.

Extra spaces: When placing multiple `\Describe`, `\index`, `\margintag`, and `\watchout` macros together, care must be taken to avoid extra space in the printed text where these macros occur. A trailing percent character may be used to avoid the extra space:

```
text text text% <-- avoids extra space
\margintag{A comment.}
\index{An entry}
\index{Another entry}
more inline text
```

Unwanted vertical space: Other environments nested inside a `docsidebar` may produce excessive vertical space. It may be required to insert

```
\vspace*{-\baselineskip}
```

`\margintag` placement: To have the margin tag appear next to the first line of a paragraph, place the `\margintag` or `\watchout` somewhere after the first few words in the paragraph. The `\margintag` may be on its own line, and the rest of the paragraph may follow on the next line. If too many words are printed before the `\margintag`, the words may wrap to the next line before the tag occurs.

Margin tag overlap: To keep margin tags in proper alignment, use a new paragraph or multiple lines between `\margintag`, `\watchout`, or `\Declare` macros

[missing tags](#) **`\Describe` inside floats:** When these macros are used inside a float, the margin tag is suppressed (there is no margin in a float), but the index entries are still created.

¹Future versions may include `\DeclareBoolean` for use at the point where the boolean is defined, creating an index entry with a code line number, and `\DescribeBoolean` with a page number index entry for the related discussion in the User’s Manual portion of the document.

6 Code

6.1 Required packages

Pkg	etoolbox	v2.6 or later for \BeforeBeginEnvironment, \AfterEndEnvironment 1 \RequirePackage{etoolbox}[2011/01/03]%
Pkg	xparse	Used for the examples. 2 \RequirePackage{xparse}
Pkg	xifthen	Used for the examples. 3 \RequirePackage{xifthen}
Pkg	xcolor	Used for the examples. 4 \RequirePackage{xcolor} 5 \definecolor{myurlcolor}{rgb}{0,0,.7} 6 \definecolor{mylinkcolor}{rgb}{.7,0,0}
Pkg	caption	Used for the examples. 7 \RequirePackage{caption}
Pkg	newfloat	Used for the examples. 8 \RequirePackage{newfloat}
Pkg	fancyvrb	Used for the examples. 9 \RequirePackage{fancyvrb}
Pkg	xstring	Used for \StrSubstitute for \DescribeFile. 10 \RequirePackage{xstring}
Pkg	hyperref	If hyperref is loaded, disable some macros in PDF bookmarks:
	PDF bookmarks	11 \AtBeginDocument{ 12 \pdfstringdefDisableCommands{ 13 \def\quad{ } 14 \def\\{ } 15 \def\pkg#1{#1} 16 \def\ctr#1{#1}}

```
17 \def\bool#1{#1}
18 \def\optn#1{#1}
19 \def\env#1{#1}
20 \def\cs#1{\textbackslash#1}
21 \def\, { }
22 \def\LuaLaTeX{LuaLaTeX}
23 \def\XeLaTeX{XeLaTeX}
24 \def\TeX{TeX}
25 \def\LaTeX{LaTeX}
26 \def\LaTeXe{LaTeX2e}
27 \def\LuaTeX{LuaTeX}
28 \def\LuaLaTeX{LuaLaTeX}
29 \def\XeTeX{XeTeX}
30 \def\AmS{AMS}
31 \def\Dash{ --- }
32 \def\dash{ -- }
33 \def\Slash{/}
34 \def\prog#1{\detokenize{#1}}
35 \def\progcode#1{#1}
36 \def\filenm#1{\detokenize{#1}}
37 \def\brand#1{#1}
38 \def\acro#1{#1}
39 \def\HTML{HTML}
40 \def\ODT{ODT}
41 \def\SVG{SVG}
42 \def\PNG{PNG}
43 \def\GIF{GIF}
44 \def\JPG{JPG}
45 \def\EPS{EPS}
46 \def\PDF{PDF}
47 \def\DVI{DVI}
48 \def\UTF{UTF}
49 \def\URL{URL}
50 \def\element#1{#1}
51 \def\attribute#1{#1}
52 \def\HTML{HTML}
53 \def\HTMLfive{HTML5}
54 \def\CSS{CSS}
55 \def\CSSthree{CSS3}
56 \def\E PUB{EPUB}
57 \def\TOC{TOC}
58 \def\LOF{LOF}
59 \def\LOT{LOT}
60 }
61 }
```

Pkg pict2e

```
62 \RequirePackage{pict2e}
63 \setlength{\unitlength}{1pt}
```

`\warningsign` Prints an exclamation point inside a triangle.

Creates a warning sign without relying on the presence of the fourier font. During copy/paste, this shows up as a simple exclamation point.

```
64 \newcommand*\warningsign}{%
65 \begin{picture}(10,9)
66 \put(4,1){\scriptsize!}
67 \put(0,0){\line(500,866){5}}
68 \put(10,0){\line(-500,866){5}}
69 \put(0,0){\line(1,0){10}}
70 \end{picture}
71 }
```

6.2 Vertical spacing

```
72 \setlength{\marginparsep}{1em}
73 \setlength{\marginparpush}{.7ex}
74
75 \setlength{\parindent}{0em}
76 \setlength{\parskip}{2ex}
77
78 \setlength{\IndexMin}{40ex}
```

6.3 Support macros

```
79 \renewcommand*\PrintEnvName}[1]
80 {\strut{\scriptsize}Env}\quad\MacroFont#1\ }
```

`\DTXD@printtype` $\{\langle text \rangle\}$

Used to print the object class in the margin:

```
81 \newcommand*\DTXD@printtype}[1]
82 {\raggedleft\strut{\scriptsize\sffamily#1}\quad\MacroFont}
```

`\usage` $\{\langle text \rangle\}$

Allow hyperlinks in the “usage” index entries:

```
83 \renewcommand{\usage}[1]{\textit{\hyperpage{#1}}}
```

`\DTXD@origwindex` Used to bypass `hyperref` index modifications.

```
84 \let\DTXD@origwindex\@windex
```

`\DTXD@margin tag` $\langle class \rangle \langle name \rangle \langle margin tag \rangle$

Creates the margin tag for the object being described.

The `class` is used to sub-categories keys into their key/value groups.

```

85 \newcommand*\DTXD@margin tag}[3]{%
86 \ifundefined{@capt type}{% not float?
87 \leavev mode%
88 \margin par{%
89 \DTXD@print type{%
90 #3% margin tag
91 \ifblank{#1}{ }{ [#1]}% class
92 }% Desc@Type
93 \texttt{#2}% name
94 }% margin par
95 }{% not float?
96 }

```

`\DTXD@index` $\langle class \rangle \langle name \rangle \langle margin tag \rangle \langle index tag \rangle \langle main/usage \rangle$

Creates the index entries for the object being described, where `name` has no backslash or underscore.

The `class` is used to sub-categories keys into their key/value groups. `main` prints code lines in the index, and `usage` prints page numbers.

```

97 \newcommand*\DTXD@index}[5]{%

```

The `makeindex` program allows each index entry to call a macro by appending a vertical bar and a macro name to each entry. `hyperref` adds a call by `\hyperpage` to each index entry, by appending the phrase `|hyperpage` to the entry in the `.idx` file. The `doc` package uses the same mechanism to distinguish between code line entries (`|main`) and references to the use of a macro (`|usage`). The problem is that `makeindex` can only handle one macro call, but `hyperref` tries to append its `|hyperpage` to the already-existing `|usage` or `|main`.

The solution used for `dtxdescribe` is to allow `hyperref` to modify all regular index entries, but use the original definition of `\@wrindex` for the `\Describe_____` macros, before `hyperref` modified it. Then, the `\usage` macro, defined above, manually adds the hyperlink.

Below, `\@bsphack` and `\@esphack` seem to be required for `\@wrindex` to work. `\ignorespaces` is used in addition because `\Declare` and `\index` entries often come in groups.

```

98 \@bsphack%
99 \begin group%
100 \DTXD@origw rindex{%

```

Index by name:

Write the name, the formatted name, the index tag, and the class:

```
101 #2\actualchar{\protect\ttfamily#2} % name
102 (#4)% index tag
103 \ifblank{#1}{ }{ [#1]}% class
104 \encapchar #5}%
```

Index by tag and class:

Write the tag and class as a group, under which is the name and the formatted name.

```
105 \begingroup%
106 \DTXD@origwindex{%
107 #4:\levelchar% index tag
108 \ifblank{#1}{ }{[#1]:\levelchar}% class
109 #2\actualchar{\protect\ttfamily#2}% name
110 \encapchar #5}%
```

Possibly index by class and name:

```
111 \ifblank{#1}{ }{% class given
112 \begingroup%
113 \DTXD@origwindex{%
114 #1\actualchar[#1]:\levelchar% class
115 #2\actualchar{\protect\ttfamily#2} % name
116 (#4)% index tag
117 \encapchar #5}%
118 }% class given
119 % \@esphack%
120 \@esphack%
121 \ignorespaces%
122 }
```

```
\DTXD@marginindex {<class>}{<name>}{<margin tag>}{<index tag>}{<main/usage>}
```

Creates the margin tag and the index entries. The class is used to sub-categories keys into their key/value groups.

```
123 \newcommand*{\DTXD@marginindex}[5]{%
124 % \@esphack%
```

The margin tag and the name:

```
125 \DTXD@marginindex{#1}{#2}{#3}%
```

The index entries:

```
126 \DTXD@index{#1}{#2}{#3}{#4}{#5}%
127 }
```

`\DTXD@macroname` {*<control sequence>*}

Given a control sequence such as `\name`, prints its name without the backslash.

From: <http://tex.stackexchange.com/questions/42318/removing-a-backslash-from-a-character-sequence>

```
128 \begingroup\lccode'\|='\
129 \lowercase{\endgroup\def\removebs#1{\if#1|\else#1\fi}}
130 \newcommand*\DTXD@macroname}[1]{\expandafter\removebs\string#1}
```

`\DTXD@verbatimcmd` {*<\name>*}

While printing to the index file, prints the `\name` verbatim. From `\SpecialIndex` in the `doc` package.

```
131 \newcommand*\DTXD@verbatimcmd}[1]{%
132 \string\verb\quotechar*\verbatimchar\string#1\verbatimchar%
133 }
```

`\DTXD@cmdmargintagindex` {*<class>*} {*<name>*} {*<margin tag>*} {*<index tag>*} {*<main/usage>*}

Creates the margin tag and index entries where `name` is a `\macro`.

```
134 \newcommand*\DTXD@cmdmargintagindex}[5]{%
135 \@bsphack%
```

Create a margin tag with the name of the macro:

```
136 \@ifundefined{@capttype}{% not float?
137 \leavevmode%
138 \marginpar{%
139 \DTXD@printtype{%
140 #3% margin tag
141 \ifblank{#1}{\{ [ #1]}% class
142 }% Desc@Type
143 \cmd{#2}% name
144 }% marginpar
145 }{\}% not float?
```

Create an index entry sorted by the name without its leading backslash, followed by the macro name with the backslash, and the tag. Prepend with the class if given.

Write (class):>name=csname (indextag) |usage

```

146 \begingroup%
147 \DTXD@origwindex{%
148 \ifblank{#1}{\actualchar[#1]:\levelchar}% class
149 \DTXD@macroname{#2}\actualchar\DTXD@verbatimcmd{#2} % name
150 (#4)% index tag
151 \encapchar #5}%

```

Create an index entry grouped by the tag, then printed and sorted by the macro name with the backslash, and the tag.

Write `indextag;>(class):>csname|usage`

```

152 \begingroup%
153 \DTXD@origwindex{%
154 #4:\levelchar% index tag
155 \ifblank{#1}{\actualchar[#1]:\levelchar}% class
156 \DTXD@verbatimcmd{#2}% name
157 \encapchar #5}%
158 \@esphack%
159 \ignorespaces%
160 }

```

6.4 \DescribeMacro and \DescribeEnvironment

`\DescribeMacro` [*class*] {`\name`}

Redefined to allow hyperlinked index entries and an optional class:

```

161 \renewcommand*\DescribeMacro[2][{}]{%
162 \@bsphack%

```

Create the margin tag with the macro's name:

```

163 \@ifundefined{@capttype}{% not float?
164 \leavevmode%
165 \marginpar{%
166 \raggedleft%
167 \ifblank{#1}{\scriptsize\textsf{[#1]}} % class
168 \cmd{#2}% name
169 }% marginpar
170 }{% not float?

```

Write the index sorted by the name without the backslash, followed by the actual name with the backslash. Append the class if given.

Write `name=csname>(class)|usage`

```

171 \begingroup%
172 \DTXD@origwindex{%
173 \DTXD@macroname{#2}\actualchar\DTXD@verbatimcmd{#2}% name
174 \ifblank{#1}{\levelchar[#1]}% class
175 \encapchar usage}%

```

Only if a class was given:

```

176 \ifblank{#1}%
177 {}% no class
178 {% class given
179 % Again, and prepend the class:
180 %
181 % Write class=(class):>name=csname\verb+|usage+
182 %   \begin{macrocode}
183 \begingroup%
184 \DTXD@origwindex{%
185 #1\actualchar[#1]:\levelchar%
186 \DTXD@macroname{#2}\actualchar\DTXD@verbatimcmd{#2}%
187 \encapchar usage}%
188 }% class given
189 \@esphack%
190 \ignorespaces%
191 }

```

`\DescribeEnv` [*class*] {*environment name*}

Redefined to allow hyperlinked index entries:

```

192 \renewcommand*\DescribeEnv}[2][
193 {\DTXD@margin@index{#1}{#2}{Env}{environment}{usage}}

```

6.5 New `\Describe...` macros

`\DTX@filename` Stores the filename with a sanitized underscore.

```

194 \newcommand*\DTX@filename{}

```

`\DTXD@filemarginparindex` {*class*} {*name*} {*margin tag*} {*index tag*} {*main/usage*}

The name may have underscores.

```

195 \newcommand*\DTXD@filemarginparindex}[5]{%

```

Create a detokenized version of the filename...

```
196 \renewcommand{\DTXD@filename}{\detokenize{#2}}%
```

... then replace any underscores with a detokenized `_`, which will print as an underscore when read back from the index file:

```
197 \StrSubstitute{\DTXD@filename}%
198 {\detokenize{\_}}{\detokenize{\_}}[\DTXD@filename]%
```

The original filename is printed in the margin. Any underscore characters have already been disabled by the `\catcode` change.

```
199 \DTXD@margintag{#1}{#2}{#3}%
```

The detokenized and sanitized version is sent to the index file:

```
200 \DTXD@index{#1}{\DTXD@filename}{#3}{#4}{#5}%
```

End the group with the disabled underscore, and clean up the extra space from the `\catcode` command:

```
201 \endgroup%
202 \ignorespaces%
203 }
```

```
\DTXD@DescribeFile [class] {name}
```

The name may have underscores.

```
204 \newcommand*\DTXD@DescribeFile[2][]{%
205 \DTXD@filemarginparindex{#1}{#2}{File}{file}{usage}%
206 }
```

```
\DescribeFile {name}
```

The underscore character is temporarily disabled, then the name is passed directly to `\DTXD@DescribeFile`.

```
207 \newcommand*\DescribeFile{%
208 \begingroup\catcode'\_ =12 \DTXD@DescribeFile%
209 }
```

```
\DTXD@DescribeProgram [class] {name}
```

The name may have underscores.

```
210 \newcommand*\DTXD@DescribeProgram[2][]{%
```

```
211 \DTXD@filemarginparindex{#1}{#2}{Prog}{program}{usage}%
212 }
```

`\DescribeProgram` {*<name>*}

The underscore character is temporarily disabled, then the name is passed directly to `\DTXD@DescribeProgram`.

```
213 \newcommand*{\DescribeProgram}{%
214 \begingroup\catcode'\_ =12 \DTXD@DescribeProgram%
215 }
```

`\DTXD@DescribeCommand` [*<class>*] {*<name>*}

The name may have underscores.

```
216 \newcommand*{\DTXD@DescribeCommand}[2][{}]{%
217 \DTXD@filemarginparindex{#1}{#2}{Cmd}{command}{usage}%
218 }
```

`\DescribeCommand` {*<name>*}

The underscore character is temporarily disabled, then the name is passed directly to `\DTXD@DescribeCommand`.

```
219 \newcommand*{\DescribeCommand}{%
220 \begingroup\catcode'\_ =12 \DTXD@DescribeCommand%
221 }
```

`\DTXD@DescribePackage` [*<class>*] {*<name>*} The name may have underscores.

```
222 \newcommand*{\DTXD@DescribePackage}[2][{}]{%
223 \DTXD@filemarginparindex{#1}{#2}{Pkg}{package}{usage}%
224 }
```

`\DescribePackage` {*<name>*}

The underscore character is temporarily disabled, then the name is passed directly to `\DTXD@DescribePackage`.

```
225 \newcommand*{\DescribePackage}{%
226 \begingroup\catcode'\_ =12 \DTXD@DescribePackage%
227 }
```

`\DTXD@DescribeClass` [*<class>*] {*<name>*}

The name may have underscores.

```
228 \newcommand*{\DTXD@DescribeClass}[2][]{%
229 \DTXD@filemarginparindex{#1}{#2}{Cls}{class}{usage}%
230 }
```

`\DescribeClass` [*<name>*]

The underscore character is temporarily disabled, then the name is passed directly to `\DTXD@DescribeClass`.

```
231 \newcommand*{\DescribeClass}{%
232 \begingroup\catcode'\_ =12 \DTXD@DescribeClass%
233 }
```

`\DescribeOption` [*<class>*] [*<name>*]

```
234 \newcommand*{\DescribeOption}[2][{}
235 {\DTXD@margintagindex{#1}{#2}{Opt}{option}{usage}}
```

`\DescribeArgument` [*<class>*] [*<name>*]

The `class` may be used to categorize arguments by their macro or environment name.

```
236 \newcommand*{\DescribeArgument}[2][{}
237 {\DTXD@margintagindex{#1}{#2}{Arg}{argument}{usage}}
```

`\DescribeBoolean` [*<class>*] [*<name>*]

```
238 \newcommand*{\DescribeBoolean}[2][{}
239 {\DTXD@margintagindex{#1}{#2}{Bool}{boolean}{usage}}
```

`\DescribeLength` [*<class>*] [*<name>*]

```
240 \newcommand*{\DescribeLength}[2][{}
241 {\DTXD@cmdmargintagindex{#1}{#2}{Len}{length}{usage}}
```

`\DescribeCounter` [*<class>*] [*<name>*]

```
242 \newcommand*{\DescribeCounter}[2][{}
243 {\DTXD@margintagindex{#1}{#2}{Ctr}{counter}{usage}}
```

`\DescribeKey` [*<class>*] [*<name>*]

The `class` may be used to categorize keys by their key/value group.

```
244 \newcommand*\DescribeKey}[2][
245 {\DTXD@margin@index{#1}{#2}{Key}{key}{usage}}
```

`\DescribeObject` [*class*] {*name*}

May be used to describe an arbitrary piece of code. Creates a margin tag and index entries with `\ttfamily`.

```
246 \newcommand*\DescribeObject}[2][[%
247 \ifundefined{@capttype}{% not float?
248 \@bsphack%
249 \leavevmode%
250 \marginpar{%
251   \ifblank{#1}{\raggedleft{\scriptsize[#1]} }
252   \texttt{#2}%
253 }%
254 }]{% not float?
255 \ifblank{#1}%
256 {\begingroup%
257 \DTXD@origw@index{%
258 #2\actualchar{\protect\ttfamily#2}%
259 \encapchar usage%
260 }%
261 }%
262 {%
263 \begingroup%
264 \DTXD@origw@index{%
265 #2\actualchar{\protect\ttfamily#2} [#1]%
266 \encapchar usage%
267 }%
268 \begingroup%
269 \DTXD@origw@index{%
270 #1\actualchar[#1]:\levelchar#2\actualchar{\protect\ttfamily#2}%
271 \encapchar usage%
272 }%
273 }%
274 \@esphack%
275 % \ignorespaces%
276 }
```

`\DescribeOther` [*class*] {*name*}

May be used to describe an arbitrary non-programming object. Creates a margin tag and index entries with roman type.

```
277 \newcommand*\DescribeOther}[2][[%
```

```

278 \ifundefined{@capttype}{% not float?
279 \@bsphack%
280 \leavevmode%
281 \marginpar{%
282   \ifblank{#1}{}{\raggedleft{\scriptsize[#1]} }%
283   #2%
284 }%
285 }{}% not float?
286 \ifblank{#1}%
287 {%
288 \begingroup%
289 \DTXD@origwindex{#2\encapchar usage}%
290 }%
291 {%
292 \begingroup%
293 \DTXD@origwindex{#2 [#1]\encapchar usage}%
294 \begingroup%
295 \DTXD@origwindex{#1\actualchar[#1]:\levelchar#2\encapchar usage}%
296 }%
297 \@esphack%
298 % \ignorespaces%
299 }

```

6.6 \DescribeDefault

`\DescribeDefaultcolor` The color of the margin tag used to show the default value.

```
300 \newcommand*{\DescribeDefaultcolor}{green!50!black}
```

`\DescribeDefault` $\{ \langle value \rangle \}$

Creates a colored margin tag showing the booleandefault value.

```

301 \newcommand{\DescribeDefault}[1]{%
302   \marginpar{%
303     \footnotesize%
304     \textcolor{\DescribeDefaultcolor}{%
305       Default: \texttt{#1}%
306     }%
307   }%
308 }

```

6.7 \ItemDescribeMacro, etc.

The following are for use inside a description.

```

\ItemDescribeMacro [class] {\name}

309 \newcommand{\ItemDescribeMacro}[2][]{%
310 \item[\cmd{#2}:]%
311 \setlength{\parskip}{1.5ex}%
312 \DescribeMacro[#1]{#2}%
313 }

\ItemDescribeEnv [class] {name}

314 \newcommand{\ItemDescribeEnv}[2][]{%
315 \item[\env{#2}:]%
316 \setlength{\parskip}{1.5ex}%
317 \DescribeEnv[#1]{#2}%
318 }

\ItemDescribeArgument [class] {argument}

319 \newcommand{\ItemDescribeArgument}[2][]{%
320 \item[\texttt{#2}:]%
321 \setlength{\parskip}{1.5ex}%
322 \DescribeArgument[#1]{#2}%
323 }

\ItemDescribeBoolean [class] {name}

324 \newcommand{\ItemDescribeBoolean}[2][]{%
325 \item[\texttt{#2}:]%
326 \setlength{\parskip}{1.5ex}%
327 \DescribeBoolean[#1]{#2}%
328 }

\ItemDescribeLength [class] {name}

329 \newcommand{\ItemDescribeLength}[2][]{%
330 \item[\cmd{#2}:]%
331 \setlength{\parskip}{1.5ex}%
332 \DescribeLength[#1]{#2}%
333 }

\ItemDescribeCounter [class] {name}

```

```

334 \newcommand{\ItemDescribeCounter}[2][]{%
335 \item[\texttt{#2}:]%
336 \setlength{\parskip}{1.5ex}%
337 \DescribeCounter[#1]{#2}%
338 }

```

`\ItemDescribeKey` [*class*] {*name*}

```

339 \newcommand{\ItemDescribeKey}[2][]{%
340 \item[\texttt{#2}:]%
341 \setlength{\parskip}{1.5ex}%
342 \DescribeKey[#1]{#2}%
343 }

```

`\ItemDescribePackage` [*class*] {*name*}

```

344 \newcommand{\DTXD@ItemDescribePackage}[2][]{%
345 \item[\texttt{#2}:]%
346 \setlength{\parskip}{1.5ex}%
347 \DescribePackage[#1]{#2}%
348 \endgroup
349 }
350
351 \newcommand{\ItemDescribePackage}{%
352 \begingroup\catcode'\_ =12 \DTXD@ItemDescribePackage%
353 }

```

`\ItemDescribeClass` [*class*] {*name*}

```

354 \newcommand{\DTXD@ItemDescribeClass}[2][]{%
355 \item[\texttt{#2}:]%
356 \setlength{\parskip}{1.5ex}%
357 \DescribeClass[#1]{#2}%
358 \endgroup
359 }
360
361 \newcommand{\ItemDescribeClass}{%
362 \begingroup\catcode'\_ =12 \DTXD@ItemDescribeClass%
363 }

```

`\ItemDescribeOption` [*class*] {*name*}

```

364 \newcommand{\ItemDescribeOption}[2][]{%
365 \item[\texttt{#2}:]%
366 \setlength{\parskip}{1.5ex}%
367 \DescribeOption[#1]{#2}%
368 }

```

`\ItemDescribeFile` [*class*] {*name*}

```
369 \newcommand{\DTXD@ItemDescribeFile}[2][]{%
370 \item[\texttt{#2}:]%
371 \setlength{\parskip}{1.5ex}%
372 \DescribeFile[#1]{#2}%
373 \endgroup
374 }
375
376 \newcommand{\ItemDescribeFile}{%
377 \begingroup\catcode'\_ =12 \DTXD@ItemDescribeFile%
378 }
```

`\ItemDescribeProgram` [*class*] {*name*}

```
379 \newcommand{\DTXD@ItemDescribeProgram}[2][]{%
380 \item[\texttt{#2}:]%
381 \setlength{\parskip}{1.5ex}%
382 \DescribeProgram[#1]{#2}%
383 \endgroup
384 }
385
386 \newcommand{\ItemDescribeProgram}{%
387 \begingroup\catcode'\_ =12 \DTXD@ItemDescribeProgram%
388 }
```

`\ItemDescribeCommand` [*class*] {*name*}

```
389 \newcommand{\DTXD@ItemDescribeCommand}[2][]{%
390 \item[\texttt{#2}:]%
391 \setlength{\parskip}{1.5ex}%
392 \DescribeCommand[#1]{#2}%
393 \endgroup
394 }
395
396 \newcommand{\ItemDescribeCommand}{%
397 \begingroup\catcode'\_ =12 \DTXD@ItemDescribeCommand%
398 }
```

`\ItemDescribeObject` [*class*] {*name*}

```
399 \newcommand{\ItemDescribeObject}[2][]{%
400 \item[\texttt{#2}:]%
401 \setlength{\parskip}{1.5ex}%
402 \DescribeObject[#1]{#2}%
403 }
```

`\ItemDescribeOther` [*⟨class⟩*] {*⟨name⟩*}

```
404 \newcommand{\ItemDescribeOther}[2][]{%
405 \item[\texttt{#2}:]%
406 \setlength{\parskip}{1.5ex}%
407 \DescribeOther[#1]{#2}%
408 }
```

6.8 `\margintag`, `\watchout`

`\margintagcolor` The color of the `\margintag`.

```
409 \newcommand*{\margintagcolor}{blue!70!black}
```

`\margintag` {*⟨text⟩*}

Prints a colored margin tag.

```
410 \newcommand{\margintag}[1]{%
411 \@ifundefined{@capttype}{% not float?
412 \marginpar{\raggedleft\textcolor{\margintagcolor}{#1}}%
413 \ignorespaces%
414 }{}% not float?
415 }
```

`\watchoutcolor` The color of the `\watchout`.

```
416 \newcommand*{\watchoutcolor}{red!50!black}
```

`\watchout` [*⟨text⟩*]

Prints a warning sign and optional text.

```
417 \newcommand{\watchout}[1][]{%
418 \@ifundefined{@capttype}{% not float?
419   \marginpar{%
420     \raggedleft%
421     \textcolor{\watchoutcolor}{\warningsign\normalsize\quad#1}%
422   }%
423   \ignorespaces%
424 }{}% not float?
425 }
```

6.9 The `dtxexample` environment

Also see example 13 on page page 24.

File `dtxexample_cut.tex` Used to store then `\input` example code.

[color] The color of the middle rule in the `dtxexample`.

DTXD@examplerulecolor

```
426 \definecolor{DTXD@examplerulecolor}{rgb}{.9,.9,.9}
```

`\dtxexamplecodename` The text name of the code section.

```
427 \newcommand*{\dtxexamplecodename}{Code: }
```

`\dtxampleresultname` The text name of the result section.

```
428 \newcommand*{\dtxampleresultname}{Result: }
```

Env `dtxexample` * [`\notes/cross-references`] [`\caption & label`]

Reads the code listing as a verbatim input using the `fancybox` package, then displays the code listing as a verbatim output, and also executes the code and displays the result. A title caption is specified, along with optional cross-referencing commands or notes to refer to the results. The unstarred version places the code inside a minipage, forbidding a page break in the middle of the code listing. The starred version does not use a minipage. This is required when the code is too large to fit on a single page.

```
429 \NewDocumentEnvironment{dtxexample}{s +0{} m}
```

```
430 {% start dtxexample
```

Copy the environment's contents to the file `dtxexample_cut.tex`:

```
431 \VerbatimOut[gobble=2,tabsize=4]{dtxexample_cut.tex}%
```

```
432 }% start dtxexample
```

When the environment closes:

```
433 {% end dtxexample
```

Finish the verbatim output:

```
434 \endVerbatimOut
```

```
435 \par
```

```
436 \addvspace{\bigskipamount}
```

If unstarred, typeset the example in a minipage:

```
437 \IfBooleanTF{#1}{\vspace{\bigskipamount}}{\minipage{\linewidth}}%
```

Emulated a float of type “example”:

```
438 \captionsetup{type=dtxdexample}%  
439 \hrule\medskip  
440 \caption{#3}
```

Typeset the contents as verbatim:

```
441 \textcolor{DTXD@examplerulecolor}{\smallskip\hrule}  
442 \smallskip  
443 {\scriptsize\itshape\dtxexamplecodename}  
444 \VerbatimInput[tabsize=4]{dtxexample_cut.tex}  
445 \unskip  
446 \textcolor{DTXD@examplerulecolor}{\hrule}  
447 \smallskip  
448 {\scriptsize\itshape\dtxexampleresultname}  
449
```

Possible add the optional cross-references or notes:

```
450 \ifstrempy{#2}  
451 {}  
452 {{\itshape\small #2}}
```

If unstarred, close the \minipage.

```
453 \IfBooleanTF{#1}{}{\endminipage}%  
454 } % end dtxexample
```

Outside of the environment’s scope, input the example to generate its output and labels:

```
455 \AfterEndEnvironment{dtxexample}  
456 {%
```

Execute the code:

```
457 \par\unskip\input{dtxexample_cut.tex}%
```

Closing rule::

```
458 \medskip\hrule%  
459 }
```

[dtxexample] A new float type for the examples.
`\DeclareFloatingEnvironment`

```
460 \DeclareFloatingEnvironment[
461 fileext=lox,
462 listname={List of Examples},
463 name=Example,
464 placement=hbp
465 ]{dtxdexample}
```

[dtxexample] `\captionsetup` Caption setup for the examples.

```
466 \captionsetup*[dtxdexample]{
467 format=hang,
468 font=bf,
469 justification=raggedright,
470 singlelinecheck=false,
471 skip=0pt,
472 position=top,
473 }
```

[dtxexample] `\crefname` Name for cleveref.

```
474 \AtBeginDocument{
475 \ifpackageloaded{cleveref}{\crefname{dtxdexample}{example}{examples}}{}
476 }
```

6.10 noindmacro and noindenvironment

Similar to macro and environment, but not indexed.

Env `noindmacro` $\{\langle name \rangle\}$

```
477 \newenvironment{noindmacro}[1]
478 {
479   \setlength{\parskip}{\marginparpush}
480   \leavevmode\par\DTXD@margintag{ }\cmd{#1}{ }
481 }
482 {\unskip}
```

Env `noindenvironment` $\{\langle name \rangle\}$

```
483 \newenvironment{noindenvironment}[1]
484 {
485   \setlength{\parskip}{\marginparpush}
486   \leavevmode\par\DTXD@margintag{ }{#1}{Env}
```

```
487 }
488 {\unskip}
```

6.11 sourcedisplay, UIdisplay, docsidebar

For use in a `sourcedisplay`:

`\fquad` Forces a quad indent.

```
489 \newcommand*\fquad{\hspace*{1em}}
```

`\fqquad` Forces a double-quad indent.

```
490 \newcommand*\fqquad{\hspace*{2em}}
```

`\fqqqquad` Forces a triple-quad indent.

```
491 \newcommand*\fqqqquad{\hspace*{3em}}
```

Env `sourceverb` To typeset a block of source code, verbatim.

```
492 \DefineVerbatimEnvironment{sourceverb}{Verbatim}
493   {gobble=2, tabsize=4, xleftmargin=2em}
494 \BeforeBeginEnvironment{sourceverb}{\vspace*{-.5\parskip}}
```

Env `fsourceverb` To typeset a framed block of source code, verbatim.

```
495 \DefineVerbatimEnvironment{fsourceverb}{Verbatim}
496   {gobble=2, tabsize=4, xleftmargin=2em, frame=lines}
497 \BeforeBeginEnvironment{fsourceverb}{\vspace*{-.5\parskip}}
```

Env `sourcedisplay` To typeset a block of source code, allowing direct formatting.

```
498 \newenvironment{sourcedisplay}
499 {
500   \leavevmode
501   \par
502   \fqquad\minipage{\linewidth-4em}
503   \ttfamily
504 }
505 {%
506   \endminipage
507   \par
508 }
```

Env UIdisplay To typeset a user interface display.

```

509 \newenvironment{UIdisplay}
510 {
511   \leavevmode
512   \par
513   \fqquad\minipage{\linewidth-4em}
514   \sffamily\bfseries
515 }
516 {
517   \endminipage
518   \par
519 }

```

\userentryname Text to tell the user to enter the following item.

```

520 \newcommand*{\userentryname}{Enter~$\Rightarrow$}

```

\userentry {*⟨text to enter⟩*}

Typesets text to be entered by the users.

```

521 \newcommand{\userentry}[1]{%
522 \par
523 \fqquad%
524 \begin{minipage}{\linewidth-2em}
525   {\footnotesize \userentryname}\quad\cmds{#1}
526 \end{minipage}
527 \par
528 }

```

Env docsidebar To typeset a sidebar in the documentation.

```

529 \newenvironment{docsidebar}[1][]
530 {%
531   \quote\unskip\medskip
532   \setlength{\parskip}{1.5ex}%
533   \ifblank{#1}{}{\textit{#1}\newline}%
534   \rule[.5\bigskipamount]{\linewidth}{.4pt}%
535   \newline%
536 }
537 {%
538   \leavevmode\par
539   \rule[\bigskipamount]{\linewidth}{.4pt}
540   \endquote\unskip
541 }

```

6.12 Formatted objects

Macros to format references to various kinds of objects.

6.12.1 L^AT_EX objects

`\pkg` or class

```
542 \providerobustcmd*{\pkg}[1]{\mbox{\textsf{#1}}}
```

`\env`

```
543 \providerobustcmd*{\env}[1]{\mbox{\texttt{#1}}}
```

`\ctr`

```
544 \providerobustcmd*{\ctr}[1]{\mbox{\texttt{#1}}}
```

`\bool`

```
545 \providerobustcmd*{\bool}[1]{\mbox{\texttt{#1}}}
```

`\optn`

```
546 \providerobustcmd*{\optn}[1]{\mbox{\texttt{#1}}}
```

`\TOC`

```
547 \providerobustcmd*{\TOC}{\acro{TOC}}
```

`\LOF`

```
548 \providerobustcmd*{\LOF}{\acro{LOF}}
```

`\LOT`

```
549 \providerobustcmd*{\LOT}{\acro{LOT}}
```

6.12.2 Programs and commands

`\cmds`

```
550 \providerobustcmd*{\cmds}[1]{\mbox{\textbf{\texttt{#1}}}}
```

`\procode`

```
551 \providerobustcmd*{\procode}[1]{\mbox{\texttt{#1}}}
```

`\prog`

```
552 \newcommand*\DTXD@prog[1]{%
553   \mbox{\textsf{\textsl{\detokenize{#1}}}}%
554   \endgroup%
555 }
556
557 \providerobustcmd*{\prog}{%
558   \begingroup%
559   \catcode'\_ =12%
560   \DTXD@prog%
561 }
```

`\filenm`

```
562 \newcommand*\DTXD@filenm[1]{%
563   \mbox{\texttt{\detokenize{#1}}}%
564   \endgroup%
565 }
566
567 \providerobustcmd*{\filenm}{%
568   \begingroup%
569   \catcode'\_ =12%
570   \DTXD@filenm%
571 }
```

`\UI` General user-interface text.

```
572 \providerobustcmd*{\UI}[1]{\textbf{\textsf{#1}}}
```

6.12.3 File types

`\ODT`

```
573 \providerobustcmd*{\ODT}{\acro{ODT}}
```

\SVG

574 \providerobustcmd*{\SVG}{\acro{SVG}}

\PNG

575 \providerobustcmd*{\PNG}{\acro{PNG}}

\GIF

576 \providerobustcmd*{\GIF}{\acro{GIF}}

\JPG

577 \providerobustcmd*{\JPG}{\acro{JPG}}

\EPS

578 \providerobustcmd*{\EPS}{\acro{EPS}}

\PDF

579 \providerobustcmd*{\PDF}{\acro{PDF}}

\DVI

580 \providerobustcmd*{\DVI}{\acro{DVI}}

6.12.4 Internet

\UTF

581 \providerobustcmd*{\UTF}{\acro{UTF}}

\URL

582 \providerobustcmd*{\URL}{\acro{URL}}

\element

583 \providerobustcmd*{\element}[1]{\texttt{<#1>}}

\attribute

```
584 \providerobustcmd*{\attribute}[1]{\mbox{\texttt{#1}}}
```

\HTML

```
585 \providerobustcmd*{\HTML}{\acro{HTML}}
```

\HTMLfive

```
586 \providerobustcmd*{\HTMLfive}{\HTML\textsc{5}}
```

\CSS

```
587 \providerobustcmd*{\CSS}{\acro{CSS}}
```

\CSSthree

```
588 \providerobustcmd*{\CSSthree}{\CSS\textsc{3}}
```

\EPUB

```
589 \providerobustcmd*{\EPUB}{\acro{EPUB}}
```

6.12.5 Specific programs

\tikz

```
590 \providerobustcmd*{\tikz}{Ti\textit{k}z}
```

\MathML

```
591 \providerobustcmd*{\MathML}{Math\acro{ML}}
```

\CTAN

```
592 \providerobustcmd*{\CTAN}{\acro{CTAN}}
```

\TDS

```
593 \providerobustcmd*{\TDS}{\acro{TDS}}
```

6.12.6 Acronyms, brand names, trademarks

`\brand`

```
594 \providerobustcmd*{\brand}[1]{\textsc{#1}}
```

`\acro`

```
595 \providerobustcmd*{\acro}[1]{\textsc{\lowercase{#1}}}
```

`\supregistered` Superscript trademark symbol.

```
596 \providerobustcmd*{\supregistered}{\textsuperscript{\textregistered}}
```

6.13 Logos

`\LuaTeX` LuaTeX

```
597 \providerobustcmd*{\LuaTeX}{\mbox{LuaTeX}}
```

`\LuaLaTeX` LuaLaTeX

```
598 \providerobustcmd*{\LuaLaTeX}{\mbox{LuaLaTeX}}
```

`\XeTeX` XeTeX, XeLaTeX
`\XeLaTeX`

```
599 \providerobustcmd*{\XeTeXrevE}
600   {\hspace{-.1667em}\raisebox{-.5ex}{E}\hspace{-.125em}}
601
602 \AtBeginDocument{
603 \ifpackageloaded{graphics}{
604   \renewrobustcmd*{\XeTeXrevE}
605     {\hspace{-.1667em}\raisebox{-.5ex}{\reflectbox{E}}\hspace{-.125em}}
606 }{}}
607 }
608
609 \providerobustcmd*{\XeTeX}{\mbox{X\XeTeXrevE\TeX}}
610 \providerobustcmd*{\XeLaTeX}{\mbox{X\XeTeXrevE\LaTeX}}
```

`\AmS` AMS

```
611 \providerobustcmd*{\AmS}{%
```

```

612 \leavevmode\hbox{$\mathcal A\kern-.2em\lower.376ex%
613 \hbox{$\mathcal M$}\kern-.2em\mathcal S$}%
614 }

```

`\LyX` **LyX**

```
615 \providerobustcmd*{\LyX}{\textsf{LyX}}
```

`\BibTeX` **B_BT_EX**

```
616 \providerobustcmd*{\BibTeX}{\mbox{B\textsc{ib}\TeX}}
```

`\MakeIndex` ***MakeIndex***

```
617 \providerobustcmd*{\MakeIndex}{\prog{MakeIndex}}
```

`\ConTeXt` **ConT_EXt**

```
618 \providerobustcmd*{\ConTeXt}{\mbox{Con\TeX{t}}}
```

`\MiKTeX` **MiK_TE_X**

```
619 \providerobustcmd*{\MiKTeX}{\mbox{MiK\TeX}}
```

6.14 Dashes and slashes

`\thinspace` A breakable thin skip.

```
620 \DeclareRobustCommand{\thinspace}{\hskip 0.16667em\relax}
```

`\endash` An endash: –

```
621 \def\endash{--}
```

`\emdash` An emdash: —

```
622 \def\emdash{---}
```

`\thinbrspace` A thin space which allows a line break.

```
623 \newcommand{\thinbrspace}{\hspace{.16667em}\penalty\exhyphenpenalty\hspace{0pt}}
```

`\thinthinbrspace` A thin space which allows a line break.

```
624 \newcommand{\thinthinbrspace}{\hspace{.08333em}\penalty\exhyphenpenalty\hspace{0pt}}
```

`\Dash` An unbreakable thin space, emdash, and breakable thin space.

```
625 \newrobustcmd{\Dash}{\unskip\thinspace\emdash\thinbrspace}
```

`\dash` An unbreakable thin space, endash, and breakable thin space.

```
626 \newrobustcmd{\dash}{\unskip\thinspace\endash\thinbrspace}
```

`\Slash` An unbreakable very thin space, a slash, and a breakable thin space.

```
627 \newrobustcmd{\Slash}{\unskip\hspace{.08333em}/\thinthinbrspace}
```

Change History and Index

Change History

vo.10		\dtxexamplecodename: Added.	46
General: 2016/12/08 Initial ver	1	\dtxampleresultname: Added.	46
vo.11		\fqquad: Added.	49
\DTXD@cmdmarginindex: Index tag		\fqquad: Added.	49
no longer plural.	35	\quad: Added.	49
\DTXD@index: Index tag no longer		\margin: Uses \marginacolor.	45
plural.	33	\marginacolor: Added.	45
\watchout: Changed to \raggedleft.	45	\userentry: Added.	50
General: 2018/03/30	1	\userentryname: Added.	50
v1.00		\watchoutcolor: Added.	45
\DTXD@cmdmarginindex: Sans tag		General: 2019/01/11	1
font.	34	Added formatted objects.	51
\DTXD@filemarginindex: Fix: File		Added logos.	55
class.	37	Cut file name changed to	
\DTXD@printtype: Sans tag font.	31	dtxexample_cut.tex	46
\DescribeClass: Fix: Allow		UIdisplay: Added.	50
underscore.	39	docsidebar: Added.	50
\DescribeDefault: Added.	41	noindentenvironment: Added.	48
\DescribeDefaultcolor: Added.	41	noindentmacro: Added.	48
\DescribeMacro: Sans tag font.	35	sourcedisplay: Added.	49
\DescribePackage: Fix: Allow		sourceverb: Added.	49
underscore.	38	fsourceverb: Added.	49
\ItemDescribeArgument: Added.	42	v1.01	
\ItemDescribeBoolean: Added.	42	\DTXD@cmdmarginindex: Put	
\ItemDescribeClass: Added.	43	margin tag class in brackets.	34
\ItemDescribeCommand: Added.	44	\DTXD@marginindex: Put margin tag	
\ItemDescribeCounter: Added.	42	class in brackets.	32
\ItemDescribeEnv: Added.	42	\DescribeMacro: Put margin tag class	
\ItemDescribeFile: Added.	44	in brackets.	35
\ItemDescribeKey: Added.	43	\DescribeObject: Put margin tag	
\ItemDescribeLength: Added.	42	class in brackets.	40
\ItemDescribeMacro: Added.	42	\DescribeOther: Put margin tag class	
\ItemDescribeObject: Added.	44	in brackets.	40
\ItemDescribeOption: Added.	43	General: 2019/03/22	1
\ItemDescribeOther: Added.	45	Sanitize PDF bookmarks.	29
\ItemDescribePackage: Added.	43	UIdisplay: Reduced width.	50
\ItemDescribeProgram: Added.	44	sourcedisplay: Reduced width.	49

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Numbers written in italic refer to the page where the corresponding entry is described; numbers underlined refer to the code line of the definition; numbers in roman refer to the code lines where the entry is used.

Symbols	
[H] (argument) [figure]	<i>21</i>
[M] (argument) [figure]	<i>21</i>
\mymacro:	
bold (argument)	<i>21</i>
A	
\acro	<i>14</i> , <u>595</u>
Additional Item [otherclass]	<i>22</i>
\AmS	<i>15</i> , <u>611</u>
another_big_file.txt (file) [bigfiles] .	<i>19</i>
argument:	
[\mymacro]:	
bold	<i>21</i>
[figure]:	
[H]	<i>21</i>
[M]	<i>21</i>
\attribute	<i>14</i> , <u>584</u>
B	
Before myenvironment	<i>22</i>
\BibTeX	<i>15</i> , <u>616</u>
[bigfiles]:	
another_big_file.txt (file)	<i>19</i>
really_big_file.txt (file)	<i>19</i>
bold (argument) [\mymacro]	<i>21</i>
\bool	<i>13</i> , <u>545</u>
boolean:	
[descexamples]:	
booleanname	<i>23</i>
[examples]:	
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