# **Book Title**



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## **Book Title**

by

## Printing History:

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## **Preface**

## Conventions Used in This Book

The following typographical conventions are used in this book:

Italic

Indicates new terms, URLs, email addresses, filenames, and file extensions.

#### Constant width

Used for program listings, as well as within paragraphs to refer to program elements such as variable or function names, databases, data types, environment variables, statements, and keywords.

#### Constant width bold

Shows commands or other text that should be typed literally by the user.

#### Constant width italic

Shows text that should be replaced with user-supplied values or by values determined by context.



This icon signifies a tip, suggestion, or general note.



This icon indicates a warning or caution.

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## **Markup Demo**

This is a chapter.

This file illustrates some of the most common elements used in O'Reilly books.



Section titles can be in either of two formats: "underlined" or delimited.

Note that the levels described in the AsciiDoc User Guide (http://www.methods.co.nz/asciidoc/userguide.html) can be confusing: in asciidoc, the document (book) is considered level 0; generally a chapter will be at asciidoc level 1 (unless you're dividing the book into parts), and sections within chapters start at asciidoc level 3 (which is equivalent to DocBook <sect1>).

## **Top-Level Section Title (Underlined Style)**

Narrative text here.

## Second-Level Section Title (Underlined Style)

More text here.

Third-Level Section Title (Underlined Style)

And some more here.

## **Top-Level Section (Delimited Style)**

This one designates asciidoc level 2 (DocBook <sect1>).

## Second-Level Section (Delimited Style)

This one designates asciidoc level 3 (DocBook <sect2>). Also note that you can have the delimiter just on the left as in this one, or on both sides as in "Top-Level Section (Delimited Style)" on page 1.

#### Third-Level Section (Delimited Style)

This one designates asciidoc level 4 (DocBook <sect3>).

## **Cross-References**

To generate a cross-reference, use this syntax:

<<ID>>

where ID is the anchor or BlockID of the target, which you place in double square-brackets above that block.

The O'Reilly build system will transform this into a standard xref> for you: the rendered text will adjust automatically if you later move the target or reword its title, and it will work as a hyperlink in online versions. Any time you refer to another component of your book, please be sure to use xref markup, not hardcoded text.

Table 1-1 shows the standard text generated from xrefs in PDF builds.

Table 1-1. Standard Cross-Reference Formats

Target	Generated Cross-Reference Text
chapter	Chapter 17
table	Table 4-1
figure	Figure 2-3
example	Example 3-5
sidebar	"Fooing the Bar" on page 23
section	"Inline Macros" on page 14

Here are some live examples (hover over the text in the PDF to locate the hyperlink):

- See "Block Elements" on page 5 for details.
- The results is shown in Figure 1-1.
- Flip ahead to Chapter 2 for a preview.

generated from this source:

- \* See <<BLOCKS>> for details.
- \* The results is shown in <<FIG1>>.
- \* Flip ahead to <<chapid\_2>> for a preview.



Please do not use asciidoc's optional xreflabel and caption features on anchors and xrefs, as these interfere with our standard generated xref formats (and will likely be stripped on intake). Your production editor has some flexibility in using alternate xref formats later in production where appropriate. If you have questions about xref formats or want customizations, please contact toolsreq@oreilly.com (mailto:toolsreq@ oreilly.com)

### **Inline Elements**

Here's some some italic and some monospaced (aka "constant-width" or "CW") text. Backticks can also be used for literal (CW) text, for example: 1s -al

Using inlines in asciidoc can be tricky:

- Delimiters may not be interpreted as intended if they don't abut whitespace on both sides; the fix for this is to double them up, as explained under "Constrained and Unconstrained Quotes" (http://www.methods.co.nz/asciidoc/userguide.html #X52) in the AsciiDoc User Guide. For example, compare how these render in the PDF: +foo+ bar vs. foo bar
- Attempting to nest inlines within each other may result in invalid DocBook (because the content model of one may not include the other). For example, foo requires the asterisk (\*) pair outside and the plus-symbol (+) pair inside. If you try the other way around, the build will fail and you'll find a message like this in pdf/.dcpsgen.buildlog:

Element emphasis is not declared in literal list of possible children

 For more precise semantics, you can always use "passthroughs" to embed DocBook markup as is, e.g. foo, foo, and foo are fairly common in O'Reilly books, rendered as CWI, CWB, and CWBI, respectively (constant-width with italic, bold, and bold +italic).



While it's easy to apply **bold** and it's one of our standard conventions in code (to denote user input), please note that it's rarely used for body text in O'Reilly books (for general emphasis, our style is to use *italics*). Please discuss with your editor if you have questions about whether or when boldface is appropriate.

For generic emphasis, you can also surround a string with single, straight quotation marks (apostrophes): i.e., this is equivalent to that. As an enhancement for finer-tuned semantic distinctions downstream, the ORM config supports the following variants, via @role attributes:

• to indicate a filename or path, use /path/to/file.ext or /path/to/file.ext

• for a book title, use This Book Needs No Title or This Book Needs No Title

To get curly quotes you can use asciidoc's mechanism for 'singles' and "doubles" (or you can always use Unicode like so: "quote me"). Note that it's also fine to leave straight quotes in running text; part of our intake process curls quotes in body, while leaving them unchanged in literal and code contexts.

Subscripts and superscripts work like so:  $H_2O$  and  $2^5 = 32$  (but if you're doing math, you'd probably want to italicize the variables, like so:  $x^2 + y^2 = z^2$ ). For more on math see !!ORMTODO!!.

Standard O'Reilly font conventions are as follows:

```
emphasis (italic)
literal (constant width)
userinput (constant-width bold)
replaceable (constant-width italic)
userinput+replaceable (constant-width bold+italic)
```

These are usually explained in a **variablelist** (asciidoc's "labeled list") in the preface, but note that expressing inlines in the "item label" (<term>) as opposed to the text description (<listitem>) can be tricky, as shown in the first item below. If you have questions about how to do these, please ask...

#### Plain

Body text.

#### Italic

*Ital* indicates new terms, URLs, email addresses, filenames, and file extensions.

#### Constant width

CW is used for program listings, as well as within paragraphs to refer to program elements such as variable or function names, databases, data types, environment variables, statements, and keywords.

#### Constant width bold

**CWB** shows commands or other text that should be typed literally by the user.

#### Constant width italic

CWI shows text that should be replaced with user-supplied values or by values determined by context.



Please do not use asciidoc's mechanisms for forcing linebreaks, page breaks, or "ruler" lines, as these don't mesh with our production process. (Your production editor will handle linebreaks and pagebreaking at appropriate stages of the production process.)

If using footnotes, please place the macro\* directly after the text, with no space between (otherwise you'll introduce extra space † before the in-text mark); footnotes at the end of a sentence belong after the period.<sup>‡</sup>

## **Block Elements**

#### **Sidebars**

Here's a <sidebar>:

#### Titled vs. Untitled Blocks

O'Reilly house style generally uses titles only on formal blocks (figures, tables, examples, and sidebars in particular). Although asciidoc supports optional titles on many other blocks, these generally are not appropriate for O'Reilly books.

Conversely, *omitting* a title from a sidebar is generally not conformant to O'Reilly style. If you have questions about whether content belongs in an sidebar vs. admonition vs. quote or other element, please consult with your editor.

## Code ("Listing" Blocks and Examples)

Here's a code block:

Hello world!

Standard line length for code is 85 in an "Animal" book:

40 1234567890123456789012345678901234567890123456789012345678901234567890123456789012345

Anything longer than the above will spill into the margin and have to be broken before the book goes to print. It's most efficient for you to keep an eye on code lengths and adjust linebreaks yourself before submitting the book for production.

Note that the maximum length within a formal example is slightly longer (as shown in Example 1-1); within other elements such as notes and sidebars, it will be slightly smaller. (If your book is a "small Animal" (6x9) or a different series, its width constraints will be different; more extensive examples can be found at https://prod.oreilly.com/ex ternal/tools/docbook/prod/trunk/samples/code\_lengths/ but please check with your editor or toolsreq@oreilly.com (mailto:toolsreq@oreilly.com) if you are unsure which applies to your book.)

- \* This is a standard footnote.
- † This one has extraneous space before the in-text mark (although the footnote itself is fine).
- ‡ If your footnote text includes [square brackets], you can escape them with a passthrough macro.

Contrast the code block above with Example 1-1, which is a formal code example (titled and cross-referenced).

```
Example 1-1. An Example
Hello world!
Note that the line length is a bit longer here (90 in an Animal):
                                60
                                      70
                           50
```

#### Inline Formatting within Code

In asciidoc, there is no built-in mechanism for inline formatting within code. If you want to use inline formatting—in particular, for standard O'Reilly font conventions such as **<userinput>** (CW+bold) and **<replaceable>** (CW+italic) or if you want to include line annotations—you can do so by using a passthrough block, like so:

```
hostname $ date
    Sun Apr 1 12:34:56 GMT 1984
or this:
    from future import with statement # This isn't required in Python 2.6
                                 Above is a comment in the code, while this is an "annotation" for the book
    with open("hello.txt") as f:
         for line in f:
                                 (note regular italic here vs. constant-width in "hello.txt" on line above)
             print line
```

#### Notes:

- code blocks in asciidoc convert to <screen> by default; when using a passthrough block, you can choose whether to make it <screen> or or programlisting> (they'll render the same in the PDF).
- all whitespace in programlisting>s and s is significant, including leading or trailing blank lines, as shown below

To avoid extra vertical space in layout when using passthrough blocks for code, do them like this:

```
class C:
        def method(self):
             pass
not like this:
    class C:
        def method(self):
             pass
```

#### **External Code Files**

To include an external code file that is text-only (no markup), use the include:: macro inside of a delimited code block, as shown here:

```
package com.marakana;
import android.app.Activity;
import android.os.Bundle;
public class HelloWorld extends Activity {
        /** Called when the activity is first created. */
        @Override
        public void onCreate(Bundle savedInstanceState) {
                super.onCreate(savedInstanceState);
                setContentView(R.layout.main);
}
```

To include an external file that contains inline markup (e.g., for callouts, line annotations, or inline font formatting), skip the code block delimiters around the include:: macro, and instead place passthrough delimiters within the included file, like so:

```
int GetCustLastOrder(DatabaseHandle db, string customer id, Order* order) {
  string customer name;
 LOOKUP_OR_RETURN("names", customer_id, &customer_name);  
 order->set customer name(customer name);
 string last order id; 2
 LOOKUP OR RETURN("recent orders", customer id, &last order id); lineannotation...
 string order_data; 3
 LOOKUP_OR_RETURN("orders", last_order_id, &order_data);
 order->set_order_data(order_data);
 return SUCCESS;
}
#define LOOKUP OR RETURN(table id, row id, data ptr) { \
 Table table; \
 int err = OpenTable(db, table_id, &table); \
 if (err != SUCCESS) return err;
 err = RetrieveRow(db, table, row_id, data_ptr); \
 if (err != SUCCESS) return err; \
```

- When using this approach to include code from an external file, you'll have to escape special XML characters such as & (&), > (>), and < (&gt;).
- 2 Inline markup here: <replaceable>
- 3 Inline markup here: <userinput>

#### **Code Callouts**

In DocBook, code callouts are used to mark specific lines of code with icons keyed to explanatory text outside the code block. These icon pairs function as bidirectional links in electronic PDF and downstream formats (i.e., you can click on the icon in the code to jump to the explanation, and vice versa).

The built-in asciidoc mechanism (shown in Example 1-2) is somewhat more limited; for one thing, icons are hyperlinked from text to code, but not vice versa. However, you can always use a passthrough block for full functionality, as shown in Example 1-3.

If you have a need to refer to the same bit of explanatory text from more than one line of code, see "Yet More on Code Callouts" on page 13 (in Chapter 2).

Example 1-2. Built-in Callout Mechanism (Unidirectional Callouts)

10/17/97	9:04	<dir></dir>	bin	
10/16/97	14:11	<dir></dir>	DOS	0
10/16/97	14:40	<dir></dir>	Program Files	
10/16/97	14:46	<dir></dir>	TEMP	
10/17/97	9:04	<dir></dir>	tmp	
10/16/97	14:37	<dir></dir>	WINNT	
10/16/97	14:25	119	AUTOEXEC.BAT	2
2/13/94	6:21	54,619	COMMAND.COM	
10/16/97	14:25	115	CONFIG.SYS	
11/16/97	17:17	61,865,984	pagefile.sys	
2/13/94	6:21	9,349	WINA20.386	3

- This directory holds MS-DOS.
- 2 System startup code for DOS.
- 3 Some sort of Windows 3.1 hack.

Example 1-3. Bidirectional Callouts, via Passthrough Markup

```
class C: 0
   def method(self):
```

• The benefits of bidirectional callouts are more evident on longer listings...



If using passthroughs for callouts, please use the paired markup as shown above (not <areaspec>, which our toolchain does not support). For more on DocBook callout markup, see "Annotating Your Code in DocBook" in our DocBook authoring docs (https://prod.oreilly.com/ex ternal/tools/docbook/docs/authoring/html/docbookguidelines.html #id2557661).

## Admonitions (Notes and Warnings)

Here are some admonitions:



O'Reilly Animal books traditionally make no distinction between the DocBook <note>, <tip>, and <important> elements.



#### **Titled Admonition**

We do support optional titles in admonitions (in most series).



O'Reilly Animal books traditionally make no distinction between the DocBook <warning> and <caution> elements.



O'Reilly Animal books traditionally make no distinction between the DocBook <warning> and <caution> elements.

## Figures and Other Images

Somewhere nearby is Figure 1-1 (a figure, titled and cross-referenced). Unlike other block elements, figures "float" by default (after the book enters production, your production editor will adjust their placement as needed). While asciidoc permits you to specify various image-related attributes for scaling/alignment/etc., generally these sorts of adjustments are not necessary for production (and some of them are only for its HTML output, not DocBook). As part of the production process, your images will be processed by a professional illustrator to ensure their size, resolution, color, and fonts are appropriate for the printed page as well as online channels.

However, if you find that any of your images overflow the PDF page as is, then you can you can force-scale them by setting a width attribute as shown in the markup for Figure 1-2; note that this is strictly for your own convenience while reviewing the PDFs; it's not necessary for production. (When the manuscript is submitted for production, our "intake" process will strip out any tweaks you've made to image-related attributes, instead using standardized markup along with reprocessed versions of your images prepared by illustration staff.)



For general guidelines on preparing illustrations—along with how and when to get in touch with our illustration staff—see https://prod.oreilly .com/external/illustrations/. Thanks for your attention to these details.

§ http://www.methods.co.nz/asciidoc/userguide.html#X9



Figure 1-1. A Figure

## When Does an Image Not Belong in a Figure?

O'Reilly books generally use informal figures (standalone images without captions) sparingly; please consult first with your editor.

Inline images (such as icons) are appropriate on occasion, but may cause problems downstream, in addition to requiring additional processing by illustration staff (for sizing relative to text) and manual placement during production (to ensure that they align appropriately). If you plan to use inline images, please discuss the rationale early on with your editor and the illustration staff, and call our attention to them when the book is submitted to production so we can handle them properly.

Here's some dummy around an inline image to demonstrate why these can be problematic. Even if were sized appropriately relative to the text height in the printed book and PDF, that might not work so well for other downstream channels.

### Lists

#### Labeled (aka Variable or Term-Definition) Lists

Definition/description Term 2 Something else

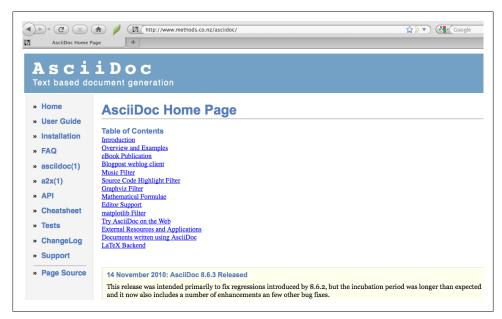


Figure 1-2. Another Figure

#### **Bulleted (aka Itemized) Lists**

- lions
- tigers
  - -sabre-toothed
  - —teapotted
- bears

#### Ordered (aka Numbered) Lists

- 1. Preparation
- 2. Assembly
  - a. Measure
  - b. Combine
  - c. Bake
- 3. Applause

#### **Tables**

O'Reilly table styles vary slightly between series; those styles are supplied by our stylesheets. Please don't use asciidoc markup to change the gridlines and so forth, as such alterations may be stripped out once the book moves into production. Similarly, don't bother fine-tuning things like column widths, as that will be handled by your production editor for the print version (and may not carry over for downstream channels). If your material warrants something other than the default style as shown in Table 1-2, please consult with your editor and be sure to communicate what you intend when the book is submitted for production.

Table 1-2. A Table

P	Q	P^Q
T	T	T
T	F	F
F	T	F
F	F	F

#### Other Block Elements

Here's a <quote> attributed to Benjamin Disraeli (by Wilfred Meynell, according to Frank Muir):

Many thanks; I shall lose no time in reading it.

Finally, keep in mind that there may be situations where it's hard to get asciidoc to format something the way you want. Sometimes there's a trick to get around it; sometimes it's better to use a passthrough block to embed a bit of DocBook; and sometimes there may be a different formatting approach that will mesh better with our production systems. If you need to do something not illustrated in this chapter, please ask toolsreq@oreilly.com (mailto:toolsreq@oreilly.com)...

# **Extras/Experiments**

This is another chapter, with some more esoteric/experimental things...

## **Yet More on Code Callouts**

If you want to refer to the same explanation from more than one line of code, please *do not* use the built-in mechanism (Example 2-1), which does not conform to house style. Instead, use either Example 2-2 or Example 2-3.

Example 2-1. Built-in Mechanism (Vertical Layout Bad)

bin	<dir></dir>	9:04	10/17/97
DOS	<dir></dir>	14:11	10/16/97
Program Files	<dir></dir>	14:40	10/16/97
TEMP	<dir></dir>	14:46	10/16/97
tmp	<dir></dir>	9:04	10/17/97
WINNT	<dir></dir>	14:37	10/16/97
AUTOEXEC.BAT	119	14:25	10/16/97
COMMAND.COM	54,619	6:21	2/13/94
CONFIG.SYS	115	14:25	10/16/97
pagefile.sys	61,865,984	17:17	11/16/97
WINA20.386	9,349	6:21	2/13/94
	DOS Program Files TEMP tmp WINNT AUTOEXEC.BAT COMMAND.COM CONFIG.SYS pagefile.sys	<pre> <dir>    ODR     ODR     ODR     DOS     ODR     TEMP     ODR&gt;    tmp     ODR&gt;    WINNT      119 AUTOEXEC.BAT     54,619 COMMAND.COM     115 CONFIG.SYS  61,865,984 pagefile.sys </dir></pre>	14:11

- **1** This directory holds MS-DOS.
- 2 System startup code for DOS. [Too much whitespace; confusing to readers]
- 3
- 4
- **5** Some sort of Windows 3.1 hack.

Example 2-2 uses the **<coref>** element to refer to the same **<callout>** from multiple code lines.

Example 2-2. Alternate Approach 1: Repeat Icon in Code

10/17/97 9:04 <DIR> bin

```
10/16/97 14:11
                       <DIR>
                                DOS
10/16/97 14:40
                       <DIR>
                                Program Files
10/16/97 14:46
                       <DIR>
                                TEMP
                       <DIR>
10/17/97
         9:04
                                tmp
10/16/97 14:37
                       <DIR>
                                WINNT
10/16/97
         14:25
                           119
                                AUTOEXEC.BAT
                                COMMAND.COM
2/13/94
         6:21
                        54,619
10/16/97
                                CONFIG.SYS
         14:25
                           115
11/16/97 17:17
                    61,865,984
                                pagefile.sys
2/13/94
                         9,349
                                WINA20.386
          6:21
```

- **1** This directory holds MS-DOS.
- 2 System startup code for DOS.
- 3 Some sort of Windows 3.1 hack.

Example 2-3 uses a different mechanism for several code lines to point to the same <callout>. In this case, each one gets a uniquely numbered icon. This is done by placing multiple values in a single <callout arearefs=...> while duplicating the @linkends value in the corresponding <co> elements in code. Note also the use of <?dbfo...> markup below the **<calloutlist>** opener; this adjusts the alignment for side-by-side icons.

Example 2-3. Alternate Approach 2: Unique Icons; Align Side-by-Side in Explanation

```
10/17/97
          9:04
                       <DIR>
                                bin
                                DOS
10/16/97 14:11
                       <DIR>
                                Program Files
10/16/97 14:40
                       <DIR>
                       <DIR>
10/16/97
                                TEMP
         14:46
10/17/97
                       <DIR>
         9:04
                                tmp
                                WINNT
10/16/97
        14:37
                       <DIR>
10/16/97
         14:25
                           119
                                AUTOEXEC.BAT
2/13/94
          6:21
                        54,619
                                COMMAND.COM
10/16/97
         14:25
                           115
                                CONFIG.SYS
11/16/97 17:17
                    61,865,984
                                pagefile.sys
                                WINA20.386
2/13/94
         6:21
                         9,349
```

- This directory holds MS-DOS.
- **23** System startup code for DOS.
- Some sort of Windows 3.1 hack.

## **Experiments**

## Literal Blocks (asciidoc terminology)

Following the general asciidoc cheatsheat/samples; many of these don't behave under our toolchain (or relative to house style), so please ask before using anything here...

Consul \*necessitatibus\* per id, consetetur, eu pro everti postulant homero verear ea mea, qui.

Consul **necessitatibus** per id, consetetur, eu pro everti postulant homero verear ea mea, qui.

Consul \*necessitatibus\* per id, consetetur, eu pro everti postulant homero verear ea mea, qui.

Consul \*necessitatibus\* per id, consetetur, eu pro everti postulant homero verear ea mea, qui.

To see a world in a grain of sand, And a heaven in a wild flower, Hold infinity in the palm of your hand, And eternity in an hour.

— William Blake from Auguries of Innocence

