Selfdocbook

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Selfdocbook
by Tim Waugh

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Chapter 1. The Selfdocbook itself

The *Selfdocbook* is a self-documenting introduction to DocBook DocBook book. It includes its own DocBook SGML source in the appendix, and so can be used to learn DocBook by example.

You can get a copy of the *Selfdocbook* in various ways; presumably you already know one of them since you are reading the *Selfdocbook* right now. Here are the choices:

- View it using a web browser, by pointing it to the *Selfdocbook* web page[1].
- Grab the PostScript version[2], ready to print out.
- Fetch the DocBook SGML source[3] and build it.

You can use the *Selfdocbook* to learn DocBook by example: if you see something that you want to know how to do, you can simply flip to Appendix A to find out how it is done.

I learned DocBook from the excellent book *DocBook: The Definitive Guide* by O'Reilly Associates, also available online[4]. It is probably a good idea to have a glance through that in order to get more of an overview than this book provides.

This *Selfdocbook* was built on 3 June 2001.

Notes

1. http://people.redhat.com/twaugh/docbook/selfdocbook/selfdocbook.html
2. http://people.redhat.com/twaugh/docbook/selfdocbook.ps
3. http://people.redhat.com/twaugh/docbook/selfdocbook.tar.gz
4. http://docbook.org/tdg/html/docbook.html

Chapter 2. Tools

The *Selfdocbook* is held together by magic **sed** glue, which is activated by some rules in the Makefile in Appendix A. So, in order to build the *Selfdocbook* you will need **make** and **sed** (and also **fold**). Note that **sed** and **fold** won't be necessary for all SGML projects, but using a `Makefile` is usually a good idea.

To have a functioning SGML environment, you will need to have various programs installed. On a Red Hat Linux 7.1 system, the `sgml-common`, `openjade`, `jadetex`, `docbook-style-dsssl`, `perl-SGMLSpm`, and `docbook-utils` packages should be installed, as well as the packages whose names begin with `docbook-dtd`.

I use an **emacs** package called `psgml` for editing SGML documents. The keybindings I find most useful are:

- **Tab** indents the current element to a level appropriate to its nesting depth.
- **Control** + **C** **Control** + **T** lists the valid tags for the current element.
- **Control** + **C** **/** closes the current element.

Chapter 3. Structure

DocBook documents are SGML documents. The SGML declaration at the top identifies it as a DocBook document, and it should look something like this:

```
<!DOCTYPE book PUBLIC "-//OASIS//DTD DocBook V3.1//EN"[
...
]>
<book>
...
</book>
```

The book here specifies the type of the top-level element of the document. This declaration also says that the document conforms to version 3.1 of the document type declaration (DTD). The book element is also shown (although without its content)—notice that it is opened with "`<book>`" and closed with "`</book>`", and everything in between is the content of that element.

Other files can be included by the top-level file by the use of entities. To include a file you first declare an entity and then use it:

```
<!DOCTYPE ...[
<!ENTITY includedfile SYSTEM "includedfile.sgml">
]>
...
&includedfile;
...
```

Because SGML tags (`<...>`) and entities (`&...;`) are interpreted specially, there are escapes provided to enable you to use these marker characters in your DocBook files. "`<`" gives "<"; "`>`" gives ">"; and "`&`" gives "&". There are many other predefined entities too.

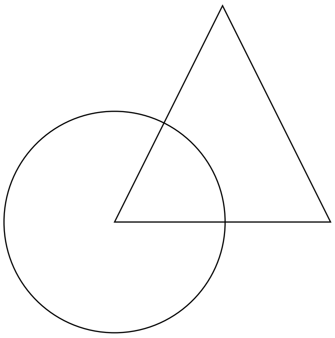
Chapter 4. Tips and examples

This document is an example of a book, and a book generally contains chapters, which may contain sections. A paragraph of text can be put in a para tag. There are lots of examples of that in this book (see Appendix A).

When you want text to appear with its layout intact (spaces and newlines kept where they are), you can use the literallayout tag. Note that **Tab** characters are *not* expanded. If you also would like a different font for the listed text, you might want to use the programlisting tag.

The following sections are for example only, and may not actually mean anything.

Images



This shows how to handle images for both print and web display; each format is included in one mediaobject so the stylesheet, when faced with a limited subset of formats for the current output media, can select the best fit.

Program listings

There are some things to watch out for when doing program listings. Let's say that we want to put the following fragment of code into DocBook:

```
#include <stdio.h>
int main ()
{
        int count = 3;
        while (count--)
                printf ("Count is now %d\n", count);
}
```

To do this you need to enclose it in a programlisting tag, and also make it into CDATA (i.e. literal text) so that `<stdio.h>` isn't interpreted as an SGML tag. The tags you need for this are:

```
<programlisting><![CDATA[
...
]]></programlisting>
```

The next thing to bear in mind is that **Tab** characters will not be expanded to spaces, so you will need to do all the indenting with spaces.

> **Warning**
>
> There seems to be a bug in `jade` at the moment that causes incorrect TeX output for “`--`” (i.e. two dashes). For the work-around that I’m using, see the source for this document.

Please send me examples

There are no more examples in this section yet, because I haven’t written any. If you would like to see a particular element of DocBook demonstrated here, feel free to send me an example, preferably demonstrated inside a section SGML element.

Appendix A. DocBook SGML source

How to build the Selfdocbook

Given a functioning SGML environment, all of the necessary files are shown in full in this appendix. All you have to do in order to build the *Selfdocbook* is:

1. Make sure you that have installed the necessary SGML tools.
2. Put all the files in the same directory and type **`make`**. The default target builds both PostScript and HTML output.

`selfdocbook.sgml`

```
<!-- -*- sgml -*- -->
<!DOCTYPE book PUBLIC "-//OASIS//DTD DocBook V3.1//EN"[
<!ENTITY builddate SYSTEM "builddate">
<!ENTITY intro SYSTEM "intro.sgml">
<!ENTITY tools SYSTEM "tools.sgml">
<!ENTITY structure SYSTEM "structure.sgml">
<!ENTITY tips SYSTEM "tips.sgml">
<!ENTITY source SYSTEM "source.sgml">
<!ENTITY fdl SYSTEM "fdl.sgml">
<!ENTITY makefile SYSTEM "Makefile.sed">
<!ENTITY selfdocbooksgml SYSTEM "selfdocbook.sgml.sed">
<!ENTITY introsgml SYSTEM "intro.sgml.sed">
<!ENTITY toolssgml SYSTEM "tools.sgml.sed">
<!ENTITY structuresgml SYSTEM "structure.sgml.sed">
<!ENTITY tipssgml SYSTEM "tips.sgml.sed">
<!ENTITY sourcesgml SYSTEM "source.sgml.sed">
<!ENTITY fdlsgml SYSTEM "fdl.sgml.sed">

<!ENTITY sdb "<citetitle>Selfdocbook</citetitle>">
]>

<book id="selfdocbook">
 <bookinfo>
  <title>
   Selfdocbook
  </title>

  <authorgroup>
   <author>
    <firstname>Tim</firstname>
    <surname>Waugh</surname>
    <affiliation>
     <orgname>
      Red Hat, Inc.
     </orgname>
     <address>
      <email>twaugh@redhat.com</email>
     </address>
    </affiliation>
   </author>
  </authorgroup>

  <copyright>
   <year>2000-1</year>
```

```
   <holder>Tim Waugh</holder>
  </copyright>

  <legalnotice>
   <para>
    Permission is granted to copy, distribute and/or modify this
    document under the terms of the GNU Free Documentation License,
    Version 1.1 or any later version published by the Free Software
    Foundation; with no Invariant Sections, with no Front-Cover Texts,
    and with no Back-Cover Texts.  A copy of the license is included
    in the section entitled "GNU Free Documentation License".
   </para>
  </legalnotice>
 </bookinfo>

&intro;
&tools;
&structure;
&tips;
&source;
&fdl;

</book>

<!-- Local Variables: -->
<!-- sgml-indent-step: 1 -->
<!-- sgml-indent-data: 1 -->
<!-- End: -->
```

intro.sgml

```
<!-- -*- sgml -*- -->
 <chapter id="index"> <!-- so generated HTML starts here -->
  <title>
   The Selfdocbook itself
  </title>

  <para>
   The &sdb; is a self-documenting introduction to DocBook DocBook
   book.  It includes its own DocBook SGML source in the <link
   linkend="source">appendix</link>, and so can be used to learn
   DocBook by example.
  </para>

  <para>
   You can get a copy of the &sdb; in various ways; presumably you
   already know one of them since you are reading the &sdb; right now.
   Here are the choices:
  </para>

  <itemizedlist>
   <listitem>
    <para>
     View it using a web browser, by pointing it to the <ulink
     url="http://people.redhat.com/twaugh/docbook/selfdocbook/selfdocboo
k.html"
     >&sdb; web page</ulink>.
    </para>
```

```
   </listitem>

   <listitem>
    <para>
     Grab the <ulink
     url="http://people.redhat.com/twaugh/docbook/selfdocbook.ps">PostSc
ript
     version</ulink>, ready to print out.
    </para>
   </listitem>

   <listitem>
    <para>
     Fetch the <ulink
     url="http://people.redhat.com/twaugh/docbook/selfdocbook.tar.gz">Do
cBook
     SGML source</ulink> and build it.
    </para>
   </listitem>
  </itemizedlist>

  <para>
   You can use the &sdb; to learn DocBook by example: if you see
   something that you want to know how to do, you can simply flip to
   <xref linkend="source"> to find out how it is done.
  </para>

  <para>
   I learned DocBook from the excellent book <citetitle>DocBook:
   The Definitive Guide</citetitle> by O'Reilly Associates,
   also <ulink url="http://docbook.org/tdg/html/docbook.html">available
   online</ulink>.  It is probably a good idea to have a glance
   through that in order to get more of an overview than this book
   provides.
  </para>

  <para>
   This &sdb; was built on &builddate;.
  </para>
 </chapter>

<!-- Local Variables: -->
<!-- sgml-indent-step: 1 -->
<!-- sgml-indent-data: 1 -->
<!-- sgml-parent-document: "selfdocbook.sgml" -->
<!-- End: -->
```

tools.sgml

```
<!-- -*- sgml -*- -->
 <chapter id="tools">
  <title>
   Tools
  </title>

  <para>
   The &sdb; is held together by magic <command>sed</command> glue,
   which is activated by some rules in the
```

```
 <link linkend="Makefile">Makefile</link> in <xref
 linkend="source">.  So, in order to build the &sdb; you will need
 <command>make</command> and <command>sed</command> (and also
 <command>fold</command>).  Note that <command>sed</command> and
 <command>fold</command> won't be necessary for all SGML projects,
 but using a <filename>Makefile</filename> is usually a good idea.
</para>

<para>
 To have a functioning SGML environment, you will need to have
 various programs installed.  On a Red Hat Linux 7.1 system, the
 <literal>sgml-common</literal>, <literal>openjade</literal>,
 <literal>jadetex</literal>, <literal>docbook-style-dsssl</literal>,
 <literal>perl-SGMLSpm</literal>, and <literal>docbook-utils</literal>
 packages should be installed, as well as the packages whose names
 begin with <literal>docbook-dtd</literal>.
</para>

<para>
 I use an <command>emacs</command> package called
 <literal>psgml</literal> for editing SGML documents.  The
 keybindings I find most useful are:
</para>

<itemizedlist>
 <listitem>
  <para>
   <keycap>Tab</keycap> indents the current element to a level
   appropriate to its nesting depth.
  </para>
 </listitem>

 <listitem>
  <para>
   <keycombo action=seq>
    <keycombo action=simul>
     <keycap>
      Control
     </keycap>
     <keycap>
      C
     </keycap>
    </keycombo>
    <keycombo action=simul>
     <keycap>
      Control
     </keycap>
     <keycap>
      T
     </keycap>
    </keycombo>
   </keycombo> lists the valid tags for the current element.
  </para>
 </listitem>

 <listitem>
  <para>
   <keycombo action=seq>
    <keycombo action=simul>
     <keycap>
      Control
     </keycap>
     <keycap>
```

```
         C
        </keycap>
       </keycombo>
       <keycap>
        /
       </keycap>
      </keycombo> closes the current element.
     </para>
    </listitem>
   </itemizedlist>
  </chapter>

<!-- Local Variables: -->
<!-- sgml-indent-step: 1 -->
<!-- sgml-indent-data: 1 -->
<!-- sgml-parent-document: "selfdocbook.sgml" -->
<!-- End: -->
```

structure.sgml

```
<!-- -*- sgml -*- -->
 <chapter id="structure">
  <title>
   Structure
  </title>

  <para>
   DocBook documents are SGML documents.  The SGML declaration at the
   top identifies it as a DocBook document, and it should look
   something like this:
  </para>

  <programlisting>
&lt;!DOCTYPE book PUBLIC "-//OASIS//DTD DocBook V3.1//EN"[
&hellip;
]&gt;
&lt;book&gt;
&hellip;
&lt;/book&gt;
  </programlisting>

  <para>
   The <sgmltag>book</sgmltag> here specifies the type of the
   top-level element of the document.  This declaration also says that
   the document conforms to version 3.1 of the document type
   declaration (DTD).  The <sgmltag>book</sgmltag> element is also
   shown (although without its content)---notice that it is opened
   with <quote><literal>&lt;book&gt;</literal></quote> and closed with
   <quote><literal>&lt;/book&gt;</literal></quote>, and everything in
   between is the content of that element.
  </para>

  <para>
   Other files can be included by the top-level file by the use of
   entities.  To include a file you first declare an entity and then
   use it:
  </para>
```

```
  <programlisting>
&lt;!DOCTYPE &hellip;[
&lt;!ENTITY includedfile SYSTEM "includedfile.sgml">
]&gt;
&hellip;
&amp;includedfile;
&hellip;
  </programlisting>

  <para>
   Because SGML tags (<literal>&lt;&hellip;&gt;</literal>) and
   entities (<literal>&amp;&hellip;;</literal>) are interpreted
   specially, there are escapes provided to enable you to use these
   marker characters in your DocBook files.
   <quote><literal>&amp;lt;</literal></quote> gives
   <quote>&lt;</quote>; <quote><literal>&amp;gt;</literal></quote>
   gives <quote>&gt;</quote>; and
   <quote><literal>&amp;amp;</literal></quote> gives
   <quote>&amp;</quote>.  There are many other predefined entities
   too.
  </para>
 </chapter>

<!-- Local Variables: -->
<!-- sgml-indent-step: 1 -->
<!-- sgml-indent-data: 1 -->
<!-- sgml-parent-document: "selfdocbook.sgml" -->
<!-- End: -->
```

tips.sgml

```
<!-- -*- sgml -*- -->
 <chapter id="tips">
  <title>
   Tips and examples
  </title>

  <para>
   This document is an example of a <sgmltag>book</sgmltag>, and a
   <sgmltag>book</sgmltag> generally contains
   <sgmltag>chapter</sgmltag>s, which may contain
   <sgmltag>section</sgmltag>s.  A paragraph of text can be put in a
   <sgmltag>para</sgmltag> tag.  There are lots of examples of that in
   this book (see <xref linkend="source">).
  </para>

  <para>
   When you want text to appear with its layout intact (spaces and
   newlines kept where they are), you can use the
   <sgmltag>literallayout</sgmltag> tag.  Note that
   <keycap>Tab</keycap> characters are <emphasis>not</emphasis>
   expanded.  If you also would like a different font for the listed
   text, you might want to use the <sgmltag>programlisting</sgmltag>
   tag.
  </para>

  <para>
   The following sections are for example only, and may not actually
```

```
   mean anything.
  </para>

  <section id="images">
   <title>
    Images
   </title>

   <mediaobject>
    <imageobject>
     <imagedata fileref="simple.eps" format="eps" align="center">
    </imageobject>
    <imageobject>
     <imagedata fileref="simple.jpeg" format="jpeg" align="center">
    </imageobject>
   </mediaobject>

   <para>
    This shows how to handle images for both print and web display;
    each format is included in one <sgmltag>mediaobject</sgmltag> so
    the stylesheet, when faced with a limited subset of formats for
    the current output media, can select the best fit.
   </para>
  </section>

  <section id="listing">
   <title>
    Program listings
   </title>

   <para>
    There are some things to watch out for when doing program
    listings.  Let’s say that we want to put the following fragment of
    code into DocBook:
   </para>

   <programlisting><![CDATA[
#include <stdio.h>
int main ()
{
        int count = 3;
        while (count]]>&mdash;<![CDATA[)
                printf ("Count is now %d\n", count);
}
    ]]>
    </programlisting>

   <para>
    To do this you need to enclose it in a
    <sgmltag>programlisting</sgmltag> tag, and also make it into
    <sgmltag>CDATA</sgmltag> (i.e. literal text) so that
    <literal>&lt;stdio.h&gt;</literal> isn’t interpreted as an SGML
    tag.  The tags you need for this are:
   </para>

   <programlisting>
&lt;programlisting&gt;&lt;!&lsqb;CDATA&lsqb;
&hellip;
&rsqb;&rsqb;&gt;&lt;/programlisting&gt;
   </programlisting>

   <para>
    The next thing to bear in mind is that <keycap>Tab</keycap>
```

```
     characters will not be expanded to spaces, so you will need to do
     all the indenting with spaces.
    </para>

    <warning>
     <para>
      There seems to be a bug in <application>jade</application> at the
      moment that causes incorrect TeX output for
      <quote><literal>&mdash;</literal></quote> (i.e. two dashes).  For
      the work-around that I'm using, see the source for this document.
     </para>
    </warning>
   </section>

   <section id="no-more">
    <title>
     Please send me examples
    </title>

    <para>
     There are no more examples in this section yet, because I haven't
     written any.  If you would like to see a particular element of
     DocBook demonstrated here, feel free to send me an example,
     preferably demonstrated inside a <sgmltag>section</sgmltag> SGML
     element.
    </para>
   </section>
  </chapter>

 <!-- Local Variables: -->
 <!-- sgml-indent-step: 1 -->
 <!-- sgml-indent-data: 1 -->
 <!-- sgml-parent-document: "selfdocbook.sgml" -->
 <!-- End: -->
```

source.sgml

```
<!-- -*- sgml -*- -->
 <appendix id="source">
  <title>
   DocBook SGML source
  </title>

  <section id="build">
   <title>
    How to build the &sdb;
   </title>

   <para>
    Given a functioning SGML environment, all of the necessary files
    are shown in full in this appendix.  All you have to do in order
    to build the &sdb; is:
   </para>

   <orderedlist>
    <listitem>
     <para>
      Make sure you that have installed the necessary SGML tools.
```

```
      </para>
     </listitem>

     <listitem>
      <para>
       Put all the files in the same directory and type
       <userinput>make</userinput>.  The default target builds both
       PostScript and HTML output.
      </para>
     </listitem>
    </orderedlist>
   </section>

   <section>
    <title>
     <filename>selfdocbook.sgml</filename>
    </title>

    <programlisting>
&selfdocbooksgml;
    </programlisting>
   </section>

   <section>
    <title>
     <filename>intro.sgml</filename>
    </title>

    <programlisting>
&introsgml;
    </programlisting>
   </section>

   <section>
    <title>
     <filename>tools.sgml</filename>
    </title>

    <programlisting>
&toolssgml;
    </programlisting>
   </section>

   <section>
    <title>
     <filename>structure.sgml</filename>
    </title>

    <programlisting>
&structuresgml;
    </programlisting>
   </section>

    <section>
    <title>
     <filename>tips.sgml</filename>
    </title>

    <programlisting>
&tipssgml;
    </programlisting>
   </section>
```

```
   <section>
   <title>
    <filename>source.sgml</filename>
   </title>

   <programlisting>
&sourcesgml;
   </programlisting>
  </section>

  <section>
   <title>
    <filename>fdl.sgml</filename>
   </title>

   <programlisting>
&fdlsgml;
   </programlisting>
  </section>

  <section id="Makefile">
   <title>
    <filename>Makefile</filename>
   </title>

   <programlisting>
&makefile;
   </programlisting>
  </section>
 </appendix>

<!-- Local Variables: -->
<!-- sgml-indent-step: 1 -->
<!-- sgml-indent-data: 1 -->
<!-- sgml-parent-document: "selfdocbook.sgml" -->
<!-- End: -->
```

fdl.sgml

```
<!-- -*- sgml -*- -->
 <appendix id="fdl">
  <title>
   GNU Free Documentation License
  </title>

  <literallayout class="monospaced">
                GNU Free Documentation License
                   Version 1.1, March 2000

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for automatic translation to a variety of formats suitable for input
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subsequent modification by readers is not Transparent.  A copy that is
not "Transparent" is called "Opaque".
```

```
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<!-- Local Variables: -->
<!-- sgml-indent-step: 1 -->
<!-- sgml-indent-data: 1 -->
<!-- sgml-parent-document: "selfdocbook.sgml" -->
<!-- End: -->
```

Makefile

```
DOC=selfdocbook
MAIN=$(DOC).sgml
SECTS=intro.sgml tools.sgml structure.sgml tips.sgml source.sgml fdl.sgm
l
FIGS=simple.fig
JPEGS=$(FIGS:.fig=.jpeg)
EPSS=$(FIGS:.fig=.eps)
GENERATED_IMG=$(JPEGS) $(EPSS)
SRC=$(MAIN) $(SECTS) $(MAIN).sed $(addsuffix .sed,$(SECTS)) Makefile.sed
 \
        builddate $(GENERATED_IMG)

all: $(DOC).ps $(DOC)

$(DOC).ps: $(SRC)
        db2ps $(MAIN)
```

```
$(DOC): $(SRC)
        -$(RM) -r $(DOC)
        db2html $(MAIN)
        (cd $@; for file in *.html; do \
           mv $$file $$file.tmp;\
           sed -e 's/&#8212;/--/g' $$file.tmp > $$file;\
           rm $$file.tmp;\
         done)
        cp $(JPEGS) $@

# Since this file would be parsed for SGML markup, we have to
# make a safe version (with &, < and > converted to SGML entities)
# In addition, tabs get ignored for some reason, so for the
# Makefile we have to convert them to spaces.
# Also, there seems to be a bug that causes -- to come out as -
# even inside <programlisting> elements, so we work around that.
%.sed: %
        fold -w 72 $< | \
                sed -e "s/$$(echo x | tr x \\t)/        /g" \
                    -e "s/&/\\&amp;/g" \
                    -e "s/</\\&lt;/g" \
                    -e "s/>/\\&gt;/g" \
                    -e "s/--/\\&mdash;/g" > $@

builddate:
        echo -n $$(date "+%e %B %Y") > $@

clean:
        -$(RM) *.log *.dvi *.aux *.tex *.sed *.ps builddate
        -$(RM) -r $(DOC) docbook
        -$(RM) $(GENERATED_IMG)

distclean: clean
        -$(RM) *~ selfdocbook.tar.gz docbook.tar.gz

selfdocbook.tar.gz: distclean
        (cd ..; tar zcf /tmp/selfdocbook.tar.gz selfdocbook)
        mv /tmp/selfdocbook.tar.gz .

docbook: all
        -$(RM) -r $@
        mkdir $@
        cp $(DOC).ps $@
        tar cf - $(DOC) | (cd $@; tar xf -)

docbook.tar.gz: selfdocbook.tar.gz docbook
        cp selfdocbook.tar.gz docbook
        tar zcf docbook.tar.gz docbook

# Make encapsulated PostScript from xfig
%.eps: %.fig
        fig2dev -Leps $< $@

# Make jpeg from xfig
%.jpeg: %.fig
        fig2dev -Ljpeg $< $@

.PHONY: distclean clean all builddate
```

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```
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