

DITA for the Impatient

Hussein Shafie

March 8, 2023

XMLmind Software

Table of Contents

1. Introduction	1
2. About topics and maps	1
3. The topic element	1
3.1. The structure of the topic element	2
3.2. The most commonly used “block elements”	3
3.3. The most commonly used “inline elements”	7
3.4. The xref and link elements	7
4. Specialized topic types	10
4.1. The concept element	10
4.2. The task element	11
4.3. The reference element	13
4.4. The glossentry element	14
5. Topic maps	15
5.1. The map element	15
5.2. The bookmap element	17
6. Conclusion	19

1. Introduction

By reading this short tutorial, you'll get acquainted with the [DITA](#) markup and after that, you'll be able to author your first DITA document⁽¹⁾ right away.

This short tutorial will not discuss the DITA "philosophy" or the advantages of the DITA vocabulary over other XML vocabularies (e.g. [DocBook](#)).

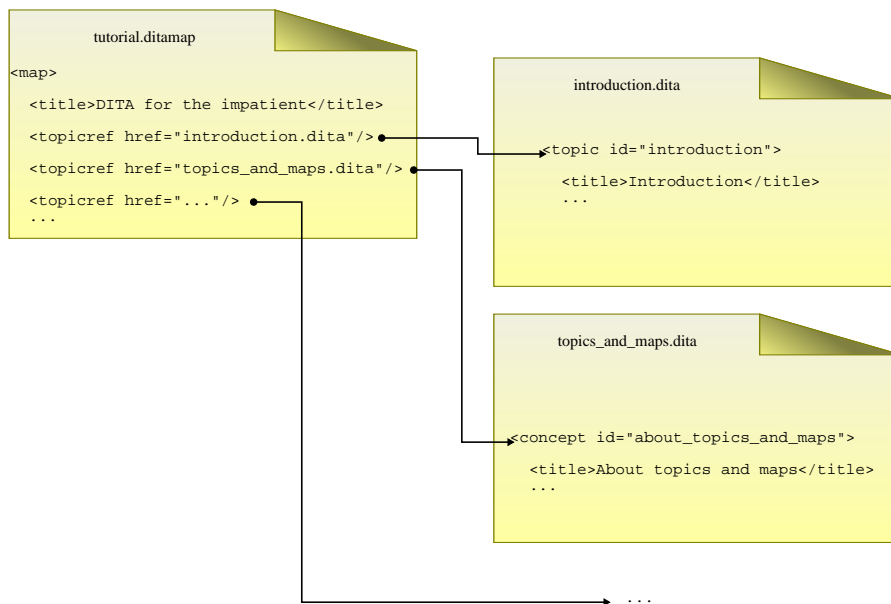
This article is published under the [Creative Commons "Attribution-Share Alike"](#) license.

2. About topics and maps

A DITA document is necessarily modular. The information unit used to compose a DITA document is called a *topic*. As its name suggests, a topic addresses a single subject.

The overall contents of a DITA document are specified using a *topic map* (also simply called a *map*). A map mainly contains a hierarchy of topic references.

Figure 1. File layout of this tutorial



Remember

- It is recommended to have a single topic per XML file.
- The recommended filename extension for a topic file is ".dita".
- The recommended filename extension for a map file is ".ditamap".
- Topic and map files may be contained in different directories. You are free to organize the contents of these directories as you wish.

3. The `<topic>` element

In this chapter,

⁽¹⁾Preferably using a DITA-aware XML editor such as [XMLmind XML Editor](#).

we'll first explain the structure of a `<topic>` element;
 then we'll list the most useful “block elements” (paragraph, table, list, etc);
 then we'll list the most useful “inline elements” (bold, italic, etc);
 finally, we'll explain how to create internal and external links. Note that creating internal links in DITA, which is inherently modular, is slightly harder than in other, generally-monolithic, document types. Therefore it is important to read this section carefully.

3.1. The structure of the `<topic>` element



Remember

A `<topic>` element must always be given an ID. Use the `@id` attribute to specify it.

The structure of the `<topic>` element is very simple:

1. A `<title>` element.
2. An optional `<shortdesc>` or `<abstract>` element.

The `<shortdesc>` element is longer and more descriptive than the `<title>` element. However, it is recommended to keep it short, approximately one paragraph long, because the contents of this element are often used during navigation (e.g. to generate a detailed table of contents).

The `<abstract>` element is intended to contain more information than the `<shortdesc>` element.

3. A `<body>` element⁽²⁾.
4. An optional `<related-links>` element.

This is a kind of “**See Also**” section containing a list of `<link>` elements. Topics being generally short, this section stands out clearly after the body of a topic. That's why it is often preferred to spreading links inside the body of a topic.

Example:

```

1 <topic id="docbook_or_dita">
2   <title>DITA or DocBook?</title>
3
4   <shortdesc>Both DITA and DocBook are both mature, feature rich, document types,
5   so which one to choose?</shortdesc>
6
7   <body>
8     <p>DocBook 5 is a mature document type. It is well-documented (DocBook:
9     The Definitive Guide, DocBook XSL: The Complete Guide), featuring decent
10    XSL stylesheets allowing conversion to a variety of formats, based on the
11    best schema technologies: RELAX NG and Schematron.</p>
12
13    <p>DITA concepts (topics, maps, specialization, etc) have an immediate
14    appeal to the technical writer, making this document type more attractive
15    than DocBook. However the DocBook vocabulary is comprehensive and very
16    well thought out. So choose DITA if its technical vocabulary is
```

⁽²⁾The `<body>` element is optional too. However creating a `<topic>` element having no `<body>` child element is mainly a trick which is more simply implemented by adding a `<topichead>` to a map.

```

17     sufficiently expressive for your needs or if, anyway, you intend to
18     specialize DITA.</p>
19 </body>
20
21 <related-links>
22     <link format="html" href="http://www.docbook.org/" scope="external">
23         <linktext>DocBook 5</linktext>
24     </link>
25
26     <link format="html"
27         href="http://www.oasis-open.org/committees/tc_home.php?wg_abbrev=dita"
28         scope="external">
29         <linktext>DITA</linktext>
30     </link>
31 </related-links>
32 </topic>

```

The above example is rendered as follows:

DITA or DocBook?

Both DITA and DocBook are both mature, feature rich, document types, so which one to choose?

DocBook 5 is a mature document type. It is well-documented (DocBook: The Definitive Guide, DocBook XSL: The Complete Guide), featuring decent XSL stylesheets allowing conversion to a variety of formats, based on the best schema technologies: RELAX NG and Schematron.

DITA concepts (topics, maps, specialization, etc) have an immediate appeal to the technical writer, making this document type more attractive than DocBook. However the DocBook vocabulary is comprehensive and very well thought out. So choose DITA if its technical vocabulary is sufficiently expressive for your needs or if, anyway, you intend to specialize DITA.

Related information

- DocBook 5
- DITA

3.2. The most commonly used “block elements”

The most commonly used block elements are borrowed from HTML and as such, should be immediately familiar to the reader.

Paragraphs and lists

A paragraph is represented by the `<p>` element.

A preformatted paragraph is represented by the `<pre>` element.

An itemized list is represented by the `` element. As expected, it contains `` list item elements.

An ordered list is represented by the `` element.

A variable list is represented by the `<dl>` element. Unlike HTML's `<dl>`, the `<dt>` (term being defined) and the `<dd>` (term definition) elements must be wrapped in a `<dlentry>` element.

Example:

```
1 <ul>
```

```

2  <li>First item.
3    <p>Continuation paragraph.</p>
4  </li>
5
6  <li>Second item. This item contains an ordered list.
7    <ol>
8      <li>First do this.</li>
9      <li>Then do that.</li>
10     <li>Finally do this.</li>
11   </ol>
12 </li>
13
14 <li>Third item. This item contains a variable list.
15   <dl>
16     <dentry>
17       <dt>Term #1</dt>
18       <dd>Definition of term #1.</dd>
19     </dentry>
20
21     <dentry>
22       <dt>Term #2</dt>
23       <dd>Definition of term #2.</dd>
24     </dentry>
25   </dl>
26 </li>
27 </ul>

```

The above example is rendered as follows:

- First item.
Continuation paragraph.
- Second item. This item contains an ordered list.
 1. First do this.
 2. Then do that.
 3. Finally do this.
- Third item. This item contains a variable list.

Term #1

Definition of term #1.

Term #2

Definition of term #2.

Sections

DITA has no <h1>, <h2>, <h3>, etc, heading elements. Instead it has the <section> element which generally always has a <title> child element. Note that <section> elements cannot nest. Example:

```

1  <section>
2    <title>The customary "hello word" program in Tcl/Tk</title>
3
4    <pre frame="all">button .hello -text "Hello, World!" -command { exit }

```

```
5     pack .hello</pre>
6 </section>
```

The above example is rendered as follows:

The customary “hello word” program in Tcl/Tk

```
button .hello -text "Hello, World!" -command { exit }
pack .hello
```

Figures and examples

Of course, DITA has also figure, table and example elements.

The `<example>` element is just a specialized kind of `<section>`.

The `<fig>` element generally has a `<title>` and generally contains an `<image>` element.

Like ``, its HTML counterpart, the `<image>` “inline element” may be contained in any “block element”. The graphics file to be displayed is specified using the `<href>` attribute. The `<image>` element also has `@width`, `@height`, `@scale` and `@align` attributes.

Example:

```
1 <example>
2   <title>Converting a color image to black and white</title>
3
4   <pre>$ convert -dither Floyd-Steinberg -monochrome photo.png bwphoto.gif</pre>
5
6   <fig>
7     <title>The photo converted to black and white</title>
8     <image href="bwphoto.gif" align="center"/>
9   </fig>
10 </example>
```

The above example is rendered as follows:

Converting a color image to black and white

```
$ convert -dither Floyd-Steinberg -monochrome photo.png bwphoto.gif
```

Figure 2. The photo converted to black and white



Tables

DITA has two kinds of table element: `<simpletable>` which is specific to DITA, and `<table>` which is in fact a CALS table (also know as a DocBook table).

`<Simpletable>` example:

```
1 <simpletable relcolwidth="1* 2* 3*">
2   <thead>
3     <stentry>A</stentry>
4     <stentry>B</stentry>
```

```

5     <stentry>C</stentry>
6 </sthead>
7
8 <strow>
9     <stentry>A,1</stentry>
10    <stentry>B,1</stentry>
11    <stentry>C,1</stentry>
12 </strow>
13
14 <strow>
15    <stentry>A,2</stentry>
16    <stentry>B,2</stentry>
17    <stentry>C,2</stentry>
18 </strow>
19 </simpletable>

```

A `<simpletable>` element contains an optional `<sthead>` element, followed by one or more `<strow>` elements. Both row elements, `<sthead>` and `<strow>`, contain `<stentry>` cell elements. The `@relcolwidth` attribute may be used to specify the relative width of each column.

The above example is rendered as follows:

A	B	C
A,1	B,1	C,1
A,2	B,2	C,2

Same as above example but using a CALS `<table>` this time:

```

1 <table>
2   <title>Sample CALS table</title>
3
4   <tgroup cols="3">
5     <colspec colwidth="1*" />
6     <colspec colwidth="2*" />
7     <colspec colwidth="3*" />
8
9     <thead>
10    <row>
11      <entry align="center">A</entry>
12      <entry align="center">B</entry>
13      <entry align="center">C</entry>
14    </row>
15  </thead>
16
17  <tbody>
18    <row>
19      <entry>A,1</entry>
20      <entry>B,1</entry>
21      <entry>C,1</entry>
22    </row>
23
24    <row>
25      <entry>A,2</entry>

```



```

26     <entry>B, 2</entry>
27     <entry>C, 2</entry>
28   </row>
29 </tbody>
30 </tgroup>
31 </table>

```

CALS tables are quite complex and explaining how they can be used is out of the scope of this tutorial. Our recommendation is to use CALS tables rather than `<simpletable>`s only when you want a cell to span more than one row and/or more than one column.

The above example is rendered as follows:

Table 1. Sample CALS table

A	B	C
A,1	B,1	C,1
A,2	B,2	C,2

3.3. The most commonly used “inline elements”

The most generic inline elements are also borrowed from HTML: `<i>` (italic), `` (bold), `<tt>` (teletype or monospaced text), `<sub>` (subscript), `<sup>` (superscript).

However like with any other document type, you should always try to use the most specific element for your needs. Examples:

- If you need to specify a filename, do not use `<tt>`, instead use `<filepath>`.
- If you need to specify a variable, do not use `<i>`, instead use `<varname>`.
- If you need to specify the name of a command, do not use ``, instead use `<cmdname>`.

DITA has dozens of such useful inline elements. In order to use them, we recommend authoring your documents with a DITA-aware XML editor and browsing through the element names suggested by the editor. Generally these names are very descriptive, so there is no real need to read the documentation.



Remember

Using the most specific elements rather than the generic `<i>`, ``, `<tt>` elements, means getting nicer deliverables.

Example: Let's suppose you want to refer to the "Open" item of the "File" menu. Do not type `<tt>File->Open</tt>` which would be rendered as: File->Open. Instead type `<menucascade><uicontrol>File</uicontrol><uicontrol>Open</uicontrol></menucascade>`, which will be rendered as: **File** → **Open**. Much nicer, isn't it?

See `<uicontrol>` and `<menucascade>`.

3.4. The `<xref>` and `<link>` elements

DITA has two elements which allow specification of internal or external links: `<xref>` and `<link>`.

The `<xref>` “inline element” may be contained in any “block element”.

The `<link>` element may be contained only in a `<related-links>` element.

Both elements may contain text, though in the case of the `<link>` element, this text must be wrapped in a `<linktext>` child element.

For both elements, the target of the link is specified by the value of the `@href` attribute, which is an absolute or relative URL, possibly ending with a fragment.

Examples:

```

1 <xref href="topic_structure.dita"/>
2
3 <xref href="http://www.xmlmind.com/xmlmind/"
4     format="html"
5     scope="external">XMLmind XML Editor</xref>
6
7 <link href="samples/sample_topic.dita#docbook_or_dita"/>
8
9 <link href="http://www.xmlmind.com/ditac/"
10    format="html"
11    scope="external">
12    <linktext>XMLmind DITA Converter</linktext>
13 </link>

```

External links

The target of an external link is any location outside the overall DITA document. This location may be an absolute or relative URL. This location is not intended to be transformed by the DITA processing software (e.g. DITA Open Toolkit or XMLmind DITA Converter).



Remember

- Always specify a text for an external link, as the DITA processing software has no way to automatically generate some text for such links.
- Always specify the `@format` attribute of the link element. Example: given an URL such as `"http://www.xmlmind.com/ditac/"`, the DITA processing software has no way to guess that this corresponds to an HTML file.
- Always specify attribute `scope="external"` for such links. By doing so, you instruct the DITA processing software to use the target location *as is* in the deliverable.

Internal links

The target of an internal link (`<xref>` or `<link>` element) is a DITA element belonging to the same DITA document. This target element may be found in the same XML file as the link element or, on the contrary, in a different XML file. The latter case is still considered to be an internal link because both the link and its target belong to the same overall DITA document.

Of course, in order to use a DITA element as the target of a link, this element must have an `@id` attribute.

The value of the `@href` attribute of a link element is:

`"URL_of_the_target_DITA_file#qualified_ID_of_the_target_element"`, where:

- `URL_of_the_target_DITA_file` may be omitted when both the link and its target are found in the same XML file.
- `#qualified_ID_of_the_target_element` may be omitted if you want to address the first topic contained in an XML file.

What is the *qualified ID* of the target element?

- It's simply the value of the @id attribute for a topic element (of any kind: <topic>, <concept>, <reference>, etc).
- It's the value of the @id attribute of the target element prefixed by "ID_of_the_topic_ancestor/" for any descendant element of a topic.

Example: Let's suppose you want to add an <xref> element to topic1.dita:

```

1 <topic id="t1">
2   <title>Title of topic 1</title>
3   <body>
4     <p id="p1">Paragraph inside topic 1.</p>
5     <p>More information in <xref href="???" />.</p>
6   </body>
7 </topic>

```

Let's suppose that you want to address elements contained in topic2.dita, this file being found in the same directory as topic1.dita.

```

1 <topic id="t2">
2   <title>Title of topic 2</title>
3   <body>
4     <p id="p2">Paragraph inside topic 2.</p>
5   </body>
6 </topic>

```

- If you want to address topic "t1", specify href="#t1".
- If you want to address paragraph "p1", specify href="#t1/p1".
- If you want to address topic "t2", specify href="topic2.dita#t2" or more simply href="topic2.dita".
- If you want to address paragraph "p2", specify href="topic2.dita#t2/p2".



Remember

- There is generally no need to specify the text of internal links, as the DITA processing software can automatically generate this text.

Example: converting the following paragraph to XHTML

```
<p>More information in <xref href="topic2.dita" />.</p>
```

may result in something like:

```
<p>More information in
  <a href="page-23.html#t2">Title of topic 2</a>.</p>
```

This probably works fine for any element having a title: <topic>, <section>, <table>, <fig>, etc. However this cannot work for the other elements.

For example, do not expect the DITA processing software to generate some text for:

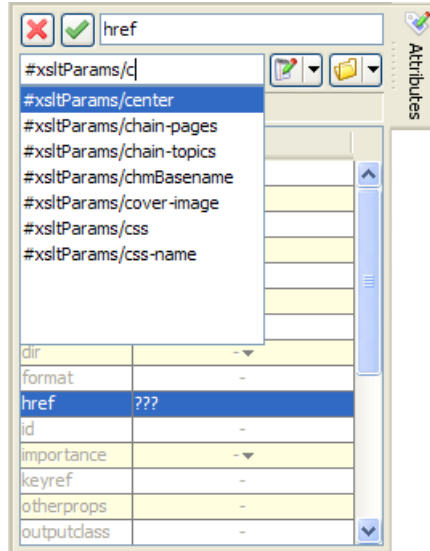
```
<xref href="topic2.dita#t2/p2" />
```

Instead explicitly specify some text:

```
<xref href="topic2.dita#t2/p2">this paragraph</xref>
```

- Link targets are tedious and error prone to specify by hand. Using a DITA-aware XML editor is therefore especially handy when it comes to inserting link elements.

Figure 3. XMLmind XML Editor "Attributes Tool" is DITA-aware: see its auto-completion feature in action



More information: [XMLmind XML Editor - Online Help](#)

4. Specialized topic types

The `<topic>` element is the most generic topic type. There are four more specialized topic types: `<concept>`, `<task>`, `<reference>`, `<glossentry>`. When appropriate, use a specialized topic type rather than a plain `<topic>`.

4.1. The `<concept>` element

Create a `<concept>` element when you need to provide your reader with background information which must be absorbed in order to understand the rest of the document.

Example:

```

1 <concept id="what_is_a_cache">
2   <title>What is a cache?</title>
3
4   <shortdesc>Everything you'll ever need to know about
5   <term>cache</term>s.</shortdesc>
6
7   <conbody>
8     <p>In computer science, a cache is a temporary storage area where
9     frequently accessed data can be stored for rapid access.</p>
10  </conbody>
11
12  <related-links>
13    <link format="html" href="http://en.wikipedia.org/wiki/Cache">
```

```

14     scope="external">
15     <linktext>Wikipedia definition of a cache</linktext>
16     </link>
17 </related-links>
18 </concept>

```

Notice how the structure of a `<concept>` element is similar to the structure of a `<topic>` element. Moreover, a `<conbody>` element has almost the same content model as a `<body>` element.

The above example is rendered as follows:

What is a cache?

Everything you'll ever need to know about *caches*.

In computer science, a cache is a temporary storage area where frequently accessed data can be stored for rapid access.

A *cache hit* occurs when the requested data can be found in a cache, while a *cache miss* occurs when it cannot.

To be cost-effective and to enable efficient use of data, caches must be relatively small.

Related information

- [Wikipedia definition of a cache](#)

4.2. The `<task>` element

Create a `<task>` element when you need to explain step by step which procedure is to be followed in order to accomplish a given task.

Example:

```

1 <task id="install_emacs">
2   <title>Installing GNU Emacs</title>
3
4   <taskbody>
5     <prereq>Windows NT 4.0 or any subsequent version of Windows. 5Mb of free
6     disk space.</prereq>
7
8     <steps>
9       <step>
10        <cmd>Unzip the distribution anywhere.</cmd>
11
12        <info>We recommend to use the free, open source, <xref format="html"
13        href="http://www.info-zip.org/" scope="external">Info-ZIP</xref>
14        utility to do so.</info>
15
16        <stepxmp><screen>C:\&gt; unzip emacs-21.3-bin-i386.zip</screen></stepxmp>
17
18        <stepresult><p>Doing this will create an
19        <filepath>emacs-21.3</filepath> directory.</p></stepresult>
20      </step>
21
22      <step>
23        <cmd>Go to the bin subdirectory.</cmd>
24

```

```

25     <stepxmp><screen>C:\&gt; cd emacs-21.3\bin</screen></stepxmp>
26     </step>
27
28     <step>
29         <cmd>Run <cmdname>addpm</cmdname> ./</cmd>
30
31     <stepxmp><screen>C:\emacs-21.3\bin&gt; addpm</screen></stepxmp>
32
33     <stepresult>A confirmation dialog box is displayed.<fig>
34         <image href="confirm_install_emacs.png"/>
35     </fig></stepresult>
36 </step>
37
38 <step>
39     <cmd>Click <uicontrol>OK</uicontrol> to confirm.</cmd>
40 </step>
41 </steps>
42 </taskbody>
43 </task>

```

Albeit being the most complex specialized topic type, the `<task>` element is also the most useful one. Its `<taskbody>` is mainly organized around the `<steps>` element. Other useful elements are `<prereq>` (prerequisite section of a task), `<context>` (background information for the task), `<result>` (expected outcome of a task).

The `<step>` element has several useful child elements other than the required `<cmd>` element: `<info>` (additional information about the step), `<stepxmp>` (example that illustrates a step), `<substeps>`, `<choices>` (the user needs to choose one of several actions), `<stepresult>` (expected outcome of a step).

The above example is rendered as follows:

Installing GNU Emacs

Before you begin

Windows NT 4.0 or any subsequent version of Windows. 5Mb of free disk space.

Procedure

1. Unzip the distribution anywhere.

We recommend to use the free, open source, [Info-ZIP](#) utility to do so.

```
C:\> unzip emacs-21.3-bin-i386.zip
```

Doing this will create an `emacs-21.3` directory.

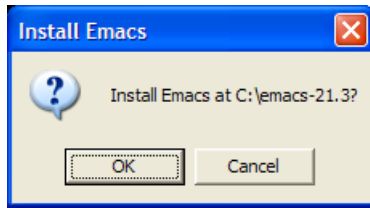
2. Go to the `bin` subdirectory.

```
C:\> cd emacs-21.3\bin
```

3. Run `addpm`.

```
C:\emacs-21.3\bin> addpm
```

A confirmation dialog box is displayed.



4. Click **OK** to confirm.

4.3. The <reference> element

Create a <reference> element when you need to add an entry to a reference manual. The <reference> element is typically used to document a command or a function.

Example:

```

1 <reference id="pwd_command">
2   <title>The <cmdname>pwd</cmdname> command</title>
3
4   <refbody>
5     <refsyn><cmdname>pwd</cmdname></refsyn>
6
7     <section><title>DESCRIPTION</title><p>Print the full filename of the
8     current working directory.</p><note>Your shell may have its own version of
9     <cmdname>pwd</cmdname>, which usually supersedes the version described
10    here.</note></section>
11
12    <section><title>AUTHOR</title><p>Written by John Doe. </p></section>
13  </refbody>
14
15  <related-links>
16    <link format="html" href="http://www.manpagez.com/man/3/getcwd/"
17          scope="external">
18      <linktext><cmdname>getcwd</cmdname>(3)</linktext>
19    </link>
20  </related-links>
21 </reference>

```

The <refbody> child element of a <reference> can contain the following generic elements: <section>s, <example>s, <simpletable>s and <table>s but also more specific elements: <refsyn> (contains the syntax of a command-line utility or the prototype of a function) and <properties> (a special kind of table having 3 columns: type, value and description).

The above example is rendered as follows:

The `pwd` command

`pwd`

DESCRIPTION

Print the full filename of the current working directory.

**Note**

Your shell may have its own version of `pwd`, which usually supersedes the version described here.

AUTHOR

Written by John Doe.

Related information

- `getcwd(3)`

4.4. The `<glossentry>` element

Create a `<glossentry>` element when you need to add entry to a glossary.

The following example shows *three* glossary entries having the following IDs: `ajax`, `dhtml`, `javascript`.

```
1 <glossgroup id="sample_glossary">
2   <title>Sample glossary</title>
3
4   <glossentry id="ajax">
5     <glossterm>AJAX</glossterm>
6
7     <glossdef><b>A</b>synchronous <b>Ja</b>vaScript and <b>X</b>ML. Web
8     development techniques used on the client-side to create interactive web
9     applications.</glossdef>
10  </glossentry>
11
12  <glossentry id="dhtml">
13    <glossterm>DHTML</glossterm>
14
15    <glossdef><b>D</b>ynameic <b>HTML</b>. Web development techniques used on
16    the client-side to create interactive web sites.</glossdef>
17  </glossentry>
18
19  <glossentry id="javascript">
20    <glossterm>JavaScript</glossterm>
21
22    <glossdef>JavaScript is an object-oriented scripting language supported by
23    all major web browsers. It allows the development of interactive web sites
24    and web applications.</glossdef>
25
26    <related-links>
27      <link format="html" href="https://developer.mozilla.org/en/JavaScript"
28        scope="external">
29        <linktext>Mozilla's Official Documentation on JavaScript</linktext>
30      </link>
31    </related-links>
32  </glossentry>
33 </glossgroup>
```


The `<glosentry>` element is the simplest specialized topic type. It contains a `<glossterm>` child element (the term being defined) followed by a `<glossdef>` (the definition of the term) child element, optionally followed by the `<related-links>` element common to all topic types.

In the above example, the `<glossgroup>` element is used as a container for the three `<glosentry>` elements.



Remember

- It is not recommended to create XML files containing several topics because if you do so, first this makes it harder reusing your topics in different documents and second, this makes the topic map slightly harder to specify.

However if you need to create multi-topic files, you'll have to use the `<dita>` element as a wrapper for your topics.

- A topic may contain other topics. The DITA grammar allows to add a topic child element after the `<body>` or `<related-links>` element (whichever is the last child) of the parent topic.

It is not recommended to use this nested topics facility which, in our opinion, is almost never useful. The hierarchy of topics (that is, chapters containing sections containing subsections, etc) is better expressed in a map using a hierarchy of `<topicref>`s⁽³⁾.

The above example is rendered as follows:

Sample glossary

AJAX

Asynchronous **JavaScript** and **XML**. Web development techniques used on the client-side to create interactive web applications.

DHTML

Dynamic **HTML**. Web development techniques used on the client-side to create interactive web sites.

JavaScript

JavaScript is an object-oriented scripting language supported by all major web browsers. It allows the development of interactive web sites and web applications.

Related information

- [Mozilla's Official Documentation on JavaScript](#)

5. Topic maps

5.1. The `<map>` element

A topic `<map>` mainly contains:

- A `<title>` child element.
- A `<topicmeta>` element where you can specify the author of the document, the date of publication, etc.
- A hierarchy of `<topicref>` elements.

⁽³⁾More about topic maps later in this tutorial.

The `<href>` attribute of a `<topicref>` element specifies the URL of a topic which is part of the DITA document. Example:

```
<topicref href="samples/sample_glossary.dita"/>
```

If the target XML file contains several topics (not recommended), you'll have to use a fragment to specify the ID of the referenced topic.

```
<topicref href="samples/sample_glossary.dita#javascript"/>
```

A map contains a *hierarchy* of `<topicref>` elements. What does this mean?

```
1 <topicref href="topic.dita">
2   <topicref href="topic_structure.dita">
3     <topicref href="samples/sample_topic.dita"/>
4   </topicref>
5 <topicref href="block_elements.dita"/>
6 <topicref href="inline_elements.dita"/>
7 <topicref href="link_elements.dita"/>
8 </topicref>
```

In the case of the above example, this means two things:

1. The overall DITA document contains this sequence of topics: `topic.dita`, `topic_structure.dita`, `samples/sample_topic.dita`, `block_elements.dita`, `inline_elements.dita`, `link_elements.dita`.
2. Topics `topic_structure.dita`, `block_elements.dita`, `inline_elements.dita`, `link_elements.dita` are *subsections* of topic `topic.dita`. Topic `samples/sample_topic.dita` is a subsection of topic `topic_structure.dita`.

If you instruct the DITA processing software to generate a Table of Contents for your document and/or to number the topics, the hierarchy of topics appears very clearly.

What follows is the topic map actually used for this tutorial (contents of file `tutorial.ditamap`):

```
1 <map>
2   <title>DITA for the Impatient</title>
3
4   <topicmeta>
5     <author>Hussein Shafie</author>
6     <publisher>Pixware</publisher>
7     <critdates>
8       <created date="October 7, 2009"/>
9     </critdates>
10  </topicmeta>
11
12  <topicref href="introduction.dita"/>
13  <topicref href="topics_and_maps.dita"/>
14  <topicref href="topic.dita">
15    <topicref href="topic_structure.dita">
16      <topicref href="samples/sample_topic.dita" toc="no"/>
17    </topicref>
18    <topicref href="block_elements.dita"/>
19    <topicref href="inline_elements.dita"/>
20    <topicref href="link_elements.dita"/>
```

```

21 </topicref>
22 .
23 .
24 .
25 <topichead navtitle="Topic maps">
26   <topicref href="map.dita"/>
27   <topicref href="bookmap.dita"/>
28 </topichead>
29 <topicref href="conclusion.dita"/>
30 </map>

```

The @toc attribute

Specifying attribute `toc="no"` for a `<topicref>` element prevents it from appearing in the generated Table of Contents.

```

1 <topicref href="topic_structure.dita">
2   <topicref href="samples/sample_topic.dita" toc="no"/>
3 </topicref>

```

The <topichead> element

The `<topichead>` element provides an author with a simple way to group several topics in the same HTML page and to give this HTML page a title⁽⁴⁾.

```

1 <topichead navtitle="Topic maps">
2   <topicref href="map.dita"/>
3   <topicref href="bookmap.dita"/>
4 </topichead>

```

5.2. The <bookmap> element

A `<bookmap>` element is just a more elaborate form of `<map>`. We recommend using a `<bookmap>` for anything more complex than an article.



Tip

You don't need to create a `<map>` for the screen media and a `<bookmap>` for the print media. If you follow the “one topic per XML file” rule, a *single topic map* (`<map>` or `<bookmap>` depending on the complexity of the contents) is all you need.

- A `<bookmap>` may have a `<booktitle>` rather than a `<title>`.
- Its metadata wrapper element, `<bookmeta>`, may contain richer information than the `<topicmeta>` element.
- A bookmap may contain specializations of the `<topicref>` element having stronger semantics: `<part>`, `<chapter>`, `<appendix>`.
- The hierarchy of references to topic elements which makes up the body of the document may be preceded by a `<frontmatter>` element and followed by a `<backmatter>` element.

⁽⁴⁾A less convenient alternative would be to use an actual `<topic>` having no `<body>` at all, just a `<title>`.

These wrapper elements can contain references to actual, hand-written, topics: `bookabstract`, `<preface>`, `<dedication>`, `<colophon>`, etc.

However the most common use of `<frontmatter>` and `<backmatter>` is to contain the following, empty placeholder elements: `<toc>`, `<figurelist>`, `<tablelist>`, `<indexlist>`. These placeholders instructs the DITA processing software to automatically generate: a Table of Contents, a List of Figures, a List of Tables, an Index.

What follows is a possible `<bookmap>` for this tutorial (contents of file `tutorial-book.ditamap`):

```

1 <bookmap>
2   <booktitle>
3     <mainbooktitle>DITA for the Impatient</mainbooktitle>
4   </booktitle>
5
6   <bookmeta>
7     <authorinformation>
8       <personinfo>...</personinfo>
9       <organizationinfo>...</organizationinfo>
10    </authorinformation>
11    <critdates>
12      <created date="October 7, 2009"/>
13    </critdates>
14  </bookmeta>
15
16  <frontmatter>
17    <booklists>
18      <toc/>
19      <figurelist/>
20      <tablelist/>
21    </booklists>
22  </frontmatter>
23
24  <chapter href="introduction.dita"/>
25  <chapter href="topics_and_maps.dita"/>
26  <chapter href="topic.dita">
27    <topicref href="topic_structure.dita">
28      <topicref href="samples/sample_topic.dita" toc="no"/>
29    </topicref>
30    <topicref href="block_elements.dita"/>
31    <topicref href="inline_elements.dita"/>
32    <topicref href="link_elements.dita"/>
33  </chapter>
34  .
35  .
36  .
37  <chapter navtitle="Topic maps">
38    <topicref href="map.dita"/>
39    <topicref href="bookmap.dita"/>
40  </chapter>
41  <chapter href="conclusion.dita"/>
42 </bookmap>

```

6. Conclusion

This tutorial has just scratched the surface of DITA. We didn't discuss:

- The `<troubleshooting>` topic.
- A lot of useful elements such as: `<screen>`, `<codeph>`, `<note>`, `<fn>` (footnote), `<lq>` (long quote), `<q>` (quote), etc.
- The `<reltable>` child element of topic maps which allows to link different topics without explicitly adding a `<related-links>` section to each of them.
- Document meta-data: `<topicmeta>`, `<prolog>`, etc.
- Conditional processing.
- The conref transclusion mechanism which allows to reuse fine-grained content.

However we believe that what you have learned here is sufficient to start authoring your first DITA document.

Related information

- Darwin Information Typing Architecture (DITA) Version 1.3 Part 2: Technical Content Edition (OASIS specification)
- DITA Open Toolkit, the de facto reference DITA implementation
- XMLmind DITA Converter, an alternative to using the DITA Open Toolkit