**Syntax Summary: Document Cross-referencing Meta-Language**

Version G.1 – Ben Weiss – 6/13/15

There are two kinds of tag phrases (meta-data enclosed with the < and > characters): “Definition” phrases, which create tags associated with specific bits of the document, and the “Reference” phrase, which refers to content defined and tagged elsewhere in the document(s).

**"Defnition" Phrases:**

<chapter:*MyChapterTag=1*>

<figure:*MyFigureTag*>

<listing:*MyListTag*>

<table:*MyTableTag*>

<text:*MyTextTag*>Text to grab</text>

**“Reference” Phrase:**

<ref:[*MyChapterTag*:]*MyTag*>

Details of each kind of phrase are provided below. At the end of the document is a page with a sample chapter, which shows the implementation of the tagging markup in a real-world context.

**Definition Phrases:**

**<chapter:*MyChapterTag*=*#ChNumber#*> -**

Defines a Chapter, which is used for scoping and referencing the chapter number within the document (this is a new change). Referencing tags from another document will require using their chapter identifier in the <ref> block (see below), and all listing, figure, and table tags will automatically incorporate the chapter number.

*Parameters:*

chapter: - reserved word identifying the kind of tag

*MyChapterTag*: Tag for this chapter. This is both a tag that references the chapter number and a scope for accessing tags in this document within others.

*#ChNumber#*: Chapter number. This should be a single number.

*Example:*

<chapter:Intro=1> defines the chapter named “Intro” to be the current file, and gives it the chapter number 1. The phrase is replaced with the text “1” in number mode.

*Replaced With:*

The chapter number (1 in the example above)

*Notes:*

There can be only one chapter tag per document (TODO: consider relaxing this?). Generally, make this tag the top line in your document.

**<figure:*MyFigTag*[=*#FigNum#*]>**

**<listing:*MyListTag*[=*#ListNum#*]>**

**<table:*MyTableTag*[=*#TableNum#*]>**

The <figure>, <list> and <table> tags behave in identical manners, but represent three different auto-numbered sequences that run through the document in parallel. Only <figure> is documented in detail here; <list> and <table> are identical but refer to Listings and Tables, respectively.

Defines a Figure. This tag is used generally in the caption of a figure to associate the figure number (which is auto-generated) with a human-readable Tag for referencing elsewhere in the document.

*Parameters:*

figure: - reserved word identifying the kind of tag

*MyFigTag* - Tag for this figure. This will be used to refer to this figure number in <ref> tags.

*#FigNum#* - (optional) Figure number override. Including this field will explicitly specify the number to be used for this figure, independent of the auto-numbering scheme used elsewhere. This also restarts the numbering of figures, so that subsequent figure tags will be #FigNum# + 1, #FigNum# + 2, etc.

*Example:*

<figure:CoolPic> defines a figure number with the tag CoolPic. This phrase is replaced with the chapter number, a period, and a number signifying its figure number (which starts at 1 at the top of the file).

*Replaced With:*

#ChapterNo#.#FigureNo#. If this is chapter 2 and the third figure in the chapter, it would replace the phrase with “2.3”.

*Notes:*

If no chapter number has been defined (there is no <chapter> phrase at the top of the file), then the figure phrase is replaced with just the figure number.

**<text:*MyTextTag*> …</text>**

Defines a Text tag. This phrase is used to capture text already present within the document. Whatever text lies between the <text> and </text> blocks will be associated with the tag *MyTextTag*.

*Parameters:*

text: - reserved word identifying the kind of tag

*MyTextTag* - Tag for this figure. This will be used to refer to this text in <ref> tags.

</text> - Signifies the end of the region of text being associated with this tag.

*Example:*

<text:MyTitle>2001: A Space Odyssey</text> defines a text tag, *MyTitle*, which is associated with the text “2001: A Space Odyssey”.

*Replaced With:*

Nothing. The <text> and </text> blocks are removed and the text between them remains visible.

*Notes:*

Note that text is captured without formatting.

**Reference Phrase:**

**<ref:[*MyChapterTag*:]*MyTag*>**

The Reference phrase is used to refer to a Tag defined with one of the Definition Phrases described above. It is replaced with the value associated with the Tag (Figure/Table/Listing number, chapter number, or text block) when in number mode.

*Parameters:*

ref: - reserved word identifying the kind of tag

*[MyChapterTag:]* (optional) - For referencing tags outside the current chapter, explicitly specify the Tag of the chapter which contains the tag you want to use. See Example, below.

*MyTag* - Name of the tag referenced. This must be defined in the current chapter (unless a chapter tag is included, in which case it must be defined in the chapter specified).

*Example:*

<ref:MyTitle> Refers to the tag named “MyTitle” (a Text tag defined above). The phrase would be replaced with “2001: A Space Odyssey” were this document’s tags converted to number mode.

<ref:CoolPic> Refers to the tag named “CoolPic” (a Figure tag defined above). The phrase would be replaced with the chapter number specified in the <chapter> tag and the figure number defined by the position of the <figure> phrase in the document. If this was Chapter 2 and the third figure, the reference would be rendered as “2.3”

<ref:ChAppendix:ReferenceTable> Refers to a Table tag named “ReferenceTable” which is located in the document tagged “ChAppendix”. This would be replaced with an automatically defined chapter and table number, based on the location of the ReferenceTable tag in the appendix document, in a manner identical to the Figure tag in the previous example.

<ref:MyChapterTag:MyChapterTag> Refers to the tag named “MyChapterTag” (a Chapter tag defined above). This would be replaced with the chapter number. The repetition of the chapter tag is required to avoid ambiguity and enable internal checks of local tags within a document (<ref:MyChapterTag> is ambiguous – is this a tag in the current document named MyChapterTag, or a reference to another chapter?)

*Replaced With:*

The text/number associated with the relevant tag. See the examples above.

*Notes:*

Note that text is captured without formatting.

In order to reference the chapter number of a different chapter, the use the syntax <ref:ChOther:ChOther>. This appears redundant, but keeps the things consistent.

**Example Document:**

**Becomes “3”**

**Chapter <chapter:ChExpos=3>**

**An Exposition**

**Becomes the chapter number of ChIntro**

As mentioned in Chapter <ref:ChIntro:ChIntro>, “<ref:ChIntro:Title>”, this is not a trivially-easy affair. In this chapter, we will describe in more detail how to process widgets effectively through an exposition using the CUDA programming language.

**Becomes the value of tag Title in chapter ChIntro**

**Defines a Listing tag CodeSnippet. Replaced with 3.1 (chapter=3, first listing)**

**Listing <listing:CodeSnippet>***Listing some code I want to talk about*

**Defines a tag, “Header”, associated with the text “cuda\_runtime.h”**

1 #include "<text:Header>cuda\_runtime.h</text>"

**References the Listing tag above. Will be replaced with “3.1”, which is the listing number.**

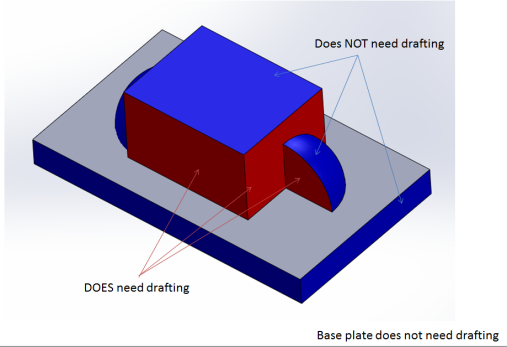
As can be seen in Listing <ref:CodeSnippet>, we can do awesome things with CUDA! The first step, however, is to include the CUDA library, <ref:Header>.

**References the Text tag in the code snippet. Note that no formatting from the definition of the tag (code styling) is retained here when it is referenced.**

In this paragraph, which will constitute the end of Chapter <ref:ChExpos>, I will talk very briefly about about Figure <ref:LastPic>.

**References the figure, which is defined below. Tags can refer to content located anywhere within the document. This will be replaced with “3.1”, since this is Chapter 3 and the first figure.**

**References the chapter number, “3”**



**Defines a figure tag, LastPic. This will be replaced with “3.1”, since this is Chapter 3 and the first figure.**

Figure <figure:LastPic>. An interesting picture.

# Version History

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| Version | Changes |
| A, 3/3/2015 | Initial Release |
| D, 3/10/2015 | Added Field Codes instead of hidden text to better preserve tag information |
| G, 6/13/2015 | * GUI redesign * Added ability to convert and recover single documents in the whole book context * Removed functionality for current document only * Added better handling of closed/resaved documents in book. If the user does a "Save As" on an active chapter, the chapter follows and uses the new file. * Bug fixes, including allowing "0" as a valid tag name character |
| I, 7/27/2015 | Fixed incorrect flagging of invalid tags when tags had been deleted. |
| J, 9/1/2015 | Implemented Erase Tags; bug fixes. |