Document Type Declarations

According to HTML standards, each HTML document requires a *document type declaration* (DTD). Such a declaration specifies which version of HTML the document uses and can help enable a browser to correctly render your code. Such a declaration also allows the use of a validator to check the accuracy of your HTML code (and there are also validators to check CSS stylesheets, test for broken links on a webpage, etc). Note that the World Wide Web Consortium's (W3C) validator can be found at this address: `http://validator.w3.org/`

There are many different DTDs which vary in the elements that they support. Lots of information can be found here:

`http://www.w3.org/QA/2002/04/valid-dtd-list.html`

I will concentrate solely on the ones that I would like you to use in this course, namely ones for the Strict XHTML standards or for the HTML 5 standards.

As I have mentioned in class, XHTML stands for "Extensible HyperText Markup Language" and is a reformulation of the HTML 4 standards as an XML (Extensible Markup Language) application.
(See `http://www.w3.org/TR/2000/REC-xhtml1-20000126/`.)

The first XHTML standard (version 1.0) was proposed in 2000 in an effort to increase interoperability between agents and users (read this as "providers and clients" if you like). It was also felt there was a need to reformulate standards for content presentation, and that reformulating the language using XML would remove certain complex features that were otherwise difficult to implement in HTML.

There are three DTDs for XHTML 1.0 standards, one being "Transitional" (porting the HTML 4 standards to XML), a "Frameset" type (approximating the HTML Frameset document type, but it's still frames :( ) and a "Strict" standard. The DTD for the strict standard is given below:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
```

So a small example of a webpage that would use this DTD is as follows:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">

  <head>
    <meta http-equiv="Content-type" content="text/html; charset=utf-8" />
    <title>Welcome to my Home Page</title>
  </head>

  <body>
    <p>Hello! Greetings! Hope you are well.</p>
```

```
  </body>

</html>
```

Note that the HTML structure is evident, i.e. the `<html>` tag starts the main part of the document, which includes the `<head> ... </head>` and `<body> ... </body>` sections. The first two lines are the document type declaration (which could certainly be placed on a single line in the HTML document), and the third line is the `<html>` tag to start the document, together with specifications for the XML namespace, and language to use. The `<head>` element also contains a `<meta>` tag to specify the character encoding of the document. Again, if not specified, the browser could assume a default value, but this might end up causing problems for some users. (Consider an Asian user looking at an English language website, and their browser might be assuming the website is in Chinese or Japanese, or vice-versa.)

You can, if you like, just use this as a template for your documents that you write. One of the main points is that with this kind of specification, validators (such as the one provided by the W3C at `http://validator.w3.org/`) will then know what type of document you intend to write and can therefore provide guidance for parts of your document that don't meet the specified standards. Checking your code with such a validator is one way of testing that you have written correct HTML code that should then be rendered correctly on browsers that conform to the W3C standards.

The pages that I have written use the XHTML 1.0 strict standard and I've passed them through the validator at the address given above to ensure that they comply with the standards. I encourage you to do the same as I will likely be using such a validator when I assess your code.

To throw another wrench in the works, there is an XHTML 1.1 standard, a more "modularized" version of XHTML 1.0. As you might expect, there is a different DTD to use XHTML 1.1 (but is similar to those you have seen already). Also, as if you haven't heard enough, there is a proposed XHTML2 specification, but this hasn't been formally adopted yet (the eighth public working draft is dated July 26, 2006). For anyone interested, you can certainly find out more information about these things online (the W3C is a good place to start).

Finally, there is the HTML 5 standards that have been proposed. This is complicated by the fact that there are two different groups that are working on this standard, the W3C being one of the groups, and the Web Hypertext Application Technology Working Group (WHATWG) being the other one.

The Document Type Declaration has been simplified for the HTML 5 (proposed) standards. This DTD is

```
<!DOCTYPE HTML>
```

Here's a very simple HTML 5 webpage. Not the DTD declaration up top, and the `<meta>`tag as above, one that declares the character set used. Since HTML 5 is not based on the XML language, you should not include the additional properties in the `<html>` tag that were present in the XHTML webpage given above.

```
<!DOCTYPE HTML>
<html>

  <head>
    <meta http-equiv="Content-type" content="text/html; charset=utf-8" />
    <title>Welcome to my Home Page</title>
  </head>

  <body>
    <p>Hello! Greetings! Hope you are well.</p>
  </body>

</html>
```

You need not have a complete understanding of all of these esoteric details to use can use these DTDs. Basically, you should keep in mind that they are used to direct the browser that it should be using certain rules to render your webpages, and they direct an HTML code validator to apply a certain rule set to your document as it tries to check if you are satisfying the web programming standards you strive to achieve.

Note that if you're using the HTML 5 specification, and testing it on the W3C validator, it will give you a warning saying that you're using an "experimental feature". This is because HTML 5 hasn't been adopted as a standard yet. So this "warning error" is to be expected, and shouldn't cause you any concern, but pay attention to the other error messages and/or warning messages you receive. (Some predictions mention 2022 as a target date for the adoption of HTML 5 as a "Recommended standard"...)