XSL stands for EXtensible Stylesheet Language, and is a style sheet language for XML documents.

CSS = Style Sheets for HTML

XSL = Style Sheets for XML

HTML uses predefined tags, and the meaning of each tag is well understood.

XML does not use predefined tags (we can use any tag-names we like), and therefore the meaning of each tag is not well understood.

The <table> tag in HTML defines a table - and a browser knows how to display it.

A <table> tag could mean an HTML table, a piece of furniture, or something else - and a browser does not know how to display it.

Adding styles to HTML elements are simple. Telling a browser to display an element in a special font or color, is easy with CSS.

XSL describes how the XML document should be displayed!

XSL originally consisted of three parts:

XSLT - a language for transforming XML documents

XPath - a language for navigating in XML documents

XSL-FO - a language for formatting XML documents

Later, W3C added XQuery (a language for querying XML documents), to the XSL family.

XSLT stands for XSL Transformations.

XSLT is the most important part of XSL. It transforms an XML document into another XML document

XSLT uses XPath to navigate in XML documents

XSLT is a W3C Recommendation

All major browsers have support for XML and XSLT.

XSLT is used to transform an XML document into another XML document, or another type of document that is recognized by a browser, like HTML and XHTML.

Normally XSLT does this by transforming each XML element into an (X)HTML element.

With XSLT you can add/remove elements and attributes to or from the output file. You can also rearrange and sort elements, perform tests and make decisions about which elements to hide and display, and a lot more.

A common way to describe the transformation process is to say that XSLT transforms an XML source-tree into an XML result-tree.

In the transformation process, XSLT uses XPath to define parts of the source document that should match one or more predefined templates. When a match is found, XSLT will transform the matching part of the source document into the result document.

Start with a Raw XML Document

<?xml version="1.0" encoding="UTF-8"?>  
<catalog>  
  <cd>  
    <title>Empire Burlesque</title>  
    <artist>Bob Dylan</artist>  
    <country>USA</country>  
    <company>Columbia</company>  
    <price>10.90</price>  
    <year>1985</year>  
  </cd>  
.  
.  
</catalog>

Create an XSL Style Sheet - cdcatalog.xsl with a transformation template

<?xml version="1.0" encoding="UTF-8"?>  
  
<xsl:stylesheet version="1.0"  
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">  
  
<xsl:template match="/">  
  <html>  
  <body>  
  <h2>My CD Collection</h2>  
  <table border="1">  
    <tr bgcolor="#9acd32">  
      <th>Title</th>  
      <th>Artist</th>  
    </tr>  
    <xsl:for-each select="catalog/cd">  
    <tr>  
      <td><xsl:value-of select="title"/></td>  
      <td><xsl:value-of select="artist"/></td>  
    </tr>  
    </xsl:for-each>  
  </table>  
  </body>  
  </html>  
</xsl:template>  
  
</xsl:stylesheet>

Linking the XSL Style Sheet to the XML Document

<?xml version="1.0" encoding="UTF-8"?>  
<?xml-stylesheet type="text/xsl" href="cdcatalog.xsl"?>  
<catalog>  
  <cd>  
    <title>Empire Burlesque</title>  
    <artist>Bob Dylan</artist>  
    <country>USA</country>  
    <company>Columbia</company>  
    <price>10.90</price>  
    <year>1985</year>  
  </cd>  
.  
.  
</catalog>

XSLT can be used to transform the document to XHTML in your browser.

XSLT can be used to transform a document from XML to XHTML. This is done by adding an XSL style sheet to the XML file and let the browser do the transformation.

Even if this works fine, it is not always desirable to include a style sheet reference in an XML file (e.g. it will not work in a non XSLT aware browser.)

A more versatile solution would be to use a JavaScript to do the transformation.

By using a JavaScript, we can:

do browser-specific testing

use different style sheets according to browser and user needs

That is the beauty of XSLT! One of the design goals for XSLT was to make it possible to transform data from one format to another, supporting different browsers and different user needs.

Notice that the XML file does not have a reference to the XSL file.

IMPORTANT: The above sentence indicates that an XML file could be transformed using many different XSL style sheets.

XSLT - On the Server : A Cross Browser Solution

To make XML data available to all kind of browsers, we can transform the XML document on the server and send back to the browser as XHTML.

That's another beauty of XSLT. One of the design goals for XSLT was to make it possible to transform data from one format to another on a server, returning readable data to all kinds of browsers.