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XML Namespaces

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XML Namespaces provide a method to avoid element name conflicts.

Name Conflicts

In XML, element names are defined by the developer. This often results in a conflict when trying to mix XML documents from different XML applications.

This XML carries HTML table information:

```
Apples
```

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```
>Bananas
```

This XML carries information about a table (a piece of furniture):

```
<name>African Coffee Table</name>
<width>80</width>
<length>120</length>
```

If these XML fragments were added together, there would be a name conflict. Both contain a element, but the elements have different content and meaning.

A user or an XML application will not know how to handle these differences.

Solving the Name Conflict Using a Prefix

Name conflicts in XML can easily be avoided using a name prefix.

This XML carries information about an HTML table, and a piece of furniture:

```
<h:table>
<h:tr>
```

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In the example above, there will be no conflict because the two elements have different names.

XML Namespaces - The xmlns Attribute

When using prefixes in XML, a **namespace** for the prefix must be defined.

The namespace can be defined by an **xmlns** attribute in the start tag of an element.

The namespace declaration has the following syntax. xmlns:prefix="URI".

```
<noot>
<h:table xmlns:h="http://www.w3.org/TR/html4/">
  <h:tr>
    <h:td>Apples</h:td>
    <h:td>Bananas</h:td>
```

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XSD <schema>

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XSD Elements Only

XSD Text Only

XSD Mixed

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XSD <any>

XSD <anyAttribute>

XSD Substitution

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XSD String

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In the example above:

The xmlns attribute in the first element gives the h: prefix a qualified namespace.

The xmlns attribute in the second element gives the f: prefix a qualified namespace.

When a namespace is defined for an element, all child elements with the same prefix are associated with the same namespace.

Namespaces can also be declared the XML root element:

XSD Numeric XSD Misc

XSD References

XSD Reference

Note: The namespace URI is not used by the parser to look up information.

The purpose of using an URI is to give the namespace a unique name.

However, companies often use the namespace as a pointer to a web page containing namespace information.

Uniform Resource Identifier (URI)

A **Uniform Resource Identifier** (URI) is a string of characters which identifies an Internet Resource.

The most common URI is the **Uniform Resource Locator** (URL) which identifies an Internet domain address. Another, not so common type of URI is the **Universal Resource Name** (URN).

Default Namespaces

Defining a default namespace for an element saves us from using prefixes in all the child elements. It has the following syntax:

```
xmlns="namespaceURI"
```

This XML carries HTML table information:

This XML carries information about a piece of furniture:

```
    <name>African Coffee Table</name>
    <width>80</width>
    <length>120</length>
```

Namespaces in Real Use

XSLT is a language that can be used to transform XML documents into other formats.

The XML document below, is a document used to transform XML into HTML.

The namespace "http://www.w3.org/1999/XSL/Transform" identifies XSLT elements inside an HTML document:

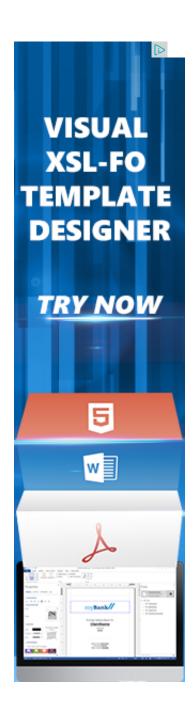
```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0"</pre>
xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
<xsl:template match="/">
<html>
<body>
 <h2>My CD Collection</h2>
 Title
    Artist
  <xsl:for-each select="catalog/cd">
   <xsl:value-of select="title"/>
    <xsl:value-of select="artist"/>
  </xsl:for-each>
```

```
</body>
</html>
</xsl:template>
</xsl:stylesheet>
```

If you want to learn more about XSLT, please read our XSLT Tutorial.

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