



XML Tutorial

[XML HOME](#)[XML Introduction](#)[XML How to use](#)[XML Tree](#)[XML Syntax](#)[XML Elements](#)[XML Attributes](#)[XML Namespaces](#)[XML Display](#)[XML XSLT](#)[XML XPath](#)[XML XLink](#)[XML Doctypes](#)[XML Validator](#)[XML DTD](#)[XML Schema](#)[XML Server](#)[XML Applications](#)[XML Examples](#)[XML Quiz](#)

XML DTD

[« Previous](#)[Next Chapter »](#)

An XML document with correct syntax is called "Well Formed".

An XML document validated against a DTD is both "Well Formed" and "Valid".

Valid XML Documents

A "Valid" XML document is a "Well Formed" XML document, which also conforms to the rules of a DTD:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE note SYSTEM "Note.dtd">
<note>
```

XML Certificate

XML DOM

DOM Intro

DOM Nodes

DOM XMLHttpRequest

DOM Accessing

DOM Node Info

DOM Node List

DOM Traversing

DOM Navigating

DOM Get Values

DOM Change Nodes

DOM Remove Nodes

DOM Replace Nodes

DOM Create Nodes

DOM Add Nodes

DOM Clone Nodes

DOM Examples

DOM Reference

DOM Node Types

DOM Node

DOM NodeList

DOM NamedNodeMap

DOM Document

```
<to>Tove</to>
<from>Jani</from>
<heading>Reminder</heading>
<body>Don't forget me this weekend!</body>
</note>
```

The DOCTYPE declaration, in the example above, is a reference to an external DTD file. The content of the file is shown in the paragraph below.

XML DTD

The purpose of a DTD is to define the structure of an XML document. It defines the structure with a list of legal elements:

```
<!DOCTYPE note
[
  <!ELEMENT note (to,from,heading,body)>
  <!ELEMENT to (#PCDATA)>
  <!ELEMENT from (#PCDATA)>
  <!ELEMENT heading (#PCDATA)>
  <!ELEMENT body (#PCDATA)>
]>
```

The DTD above is interpreted like this:

- !DOCTYPE note defines that the root element of the document is note

DOM Element
DOM Attribute
DOM Text
DOM CDATA
DOM Comment
DOM XMLHttpRequest
DOM Parser

- !ELEMENT note defines that the note element must contain the elements: "to, from, heading, body"
- !ELEMENT to defines the to element to be of type "#PCDATA"
- !ELEMENT from defines the from element to be of type "#PCDATA"
- !ELEMENT heading defines the heading element to be of type "#PCDATA"
- !ELEMENT body defines the body element to be of type "#PCDATA"



#PCDATA means parse-able text data.

Web Services

XML Services
XML WSDL
XML SOAP
XML RDF
XML RSS

XML DTD

DTD Intro
DTD Building Blocks
DTD Elements
DTD Attributes
DTD Elements vs Attr
DTD Entities
DTD Examples

XSD Schema

Using DTD for Entity Declaration

A doctype declaration can also be used to define special characters and character strings, used in the document:

Example

```
<?xml version="1.0" encoding="UTF-8"?>

<!DOCTYPE note [
  <!ENTITY nbsp "&#xA0;">
  <!ENTITY writer "Writer: Donald Duck.">
  <!ENTITY copyright "Copyright: W3Schools.">
]>

<note>
  <to>Tove</to>
  <from>Jani</from>
```

XSD Intro
XSD Why Use
XSD How To
XSD <schema>

XSD Simple

XSD Elements
XSD Attributes
XSD Restrictions

XSD Complex

XSD Elements
XSD Empty
XSD Elements Only
XSD Text Only
XSD Mixed
XSD Indicators
XSD <any>
XSD <anyAttribute>
XSD Substitution
XSD Example

XSD Data

XSD String
XSD Date

```
<heading>Reminder</heading>
<body>Don't forget me this weekend!</body>
<footer>&writer;&nbsp;&copyright;</footer>
</note>
```

Try it yourself »



An entity has three parts: an ampersand (&), an entity name, and a semicolon (;).

Why Use a DTD?

With a DTD, independent groups of people can agree on a standard for interchanging data.

With a DTD, you can verify that the data you receive from the outside world is valid.

If you want to study DTD, please read our [DTD Tutorial](#).

« Previous

Next Chapter »

XSD Numeric

XSD Misc

XSD References

XSD Reference



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