XML DTD



Next >

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

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

What is a DTD?

DTD stands for Document Type Definition.

A DTD defines the structure and the legal elements and attributes of an XML document.

Valid XML Documents

A "Valid" XML document is "Well Formed", as well as it conforms to the rules of a DTD:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE note SYSTEM "Note.dtd">
<note>
<to>Tove</to>
<from>Jani
<heading>Reminder</heading>
<body>Don't forget me this weekend!</body>
</note>
```

The DOCTYPE declaration above contains a reference to a DTD file. The content of the DTD file is shown and explained below. Dark mode







The purpose of a DTD is to define the structure and the legal elements and attributes of an XML document:

Note.dtd:

```
<!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
- !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"

Tip: #PCDATA means parseable character data.

Using DTD for Entity Declaration

A DOCTYPE declaration can also be used to define special characters or strings, used in the document:

Example

<!DOCTYPE note [

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







```
<!ENTITY copyright "Copyright: W3Schools.">
]>

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

Try it Yourself »

Tip: An entity has three parts: it starts with an ampersand (&), then comes the entity name, and it ends with a semicolon (;).

When to Use a DTD?

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

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

You can also use a DTD to verify your own data.

If you want to study DTD, please read our <u>DTD Tutorial</u>.

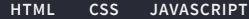
When NOT to Use a DTD?

XML does not require a DTD.

When you are experimenting with XML, or when you are working with small XML files, creating DTDs may be a waste of time.

If you develop applications, wait until the specification is stable before you add a DTD. Otherwise, your software might stop working because of validation errors.











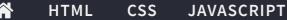


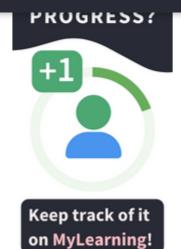
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