DTD - XML Building Blocks

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The main building blocks of both XML and HTML documents are elements.

The Building Blocks of XML Documents

Seen from a DTD point of view, all XML documents are made up by the following building blocks:

- Elements
- Attributes
- Entities
- PCDATA
- CDATA

Elements

Elements are the **main building blocks** of both XML and HTML documents.

Examples of HTML elements are "body" and "table". Examples of XML elements could be "note" and "message". Elements can contain text, other elements, or be empty. Examples of empty HTML elements are "hr", "br" and "img".

Examples:

```
<body>some text</body>
```

Attributes

Attributes provide **extra information about elements**.

Attributes are always placed inside the opening tag of an element. Attributes always come in name/value pairs. The following "img" element has additional information about a source file:

```
<img src="computer.gif" />
```

The name of the element is "img". The name of the attribute is "src". The value of the attribute is "computer.gif". Since the element itself is empty it is closed by a " /".

Entities

Some characters have a special meaning in XML, like the less than sign (<) that defines the start of an XML tag.

Most of you know the HTML entity: " ". This "no-breaking-space" entity is used in HTML to insert an extra space in a document. Entities are expanded when a document is parsed by an XML parser.

&lt;	<
&gt;	>
&amp;	&
&quot;	"
&apos;	'

PCDATA

PCDATA means parsed character data.

Think of character data as the text found between the start tag and the end tag of an XML element.

PCDATA is text that WILL be parsed by a parser. **The text will be examined by the parser for entities and markup**.

Tags inside the text will be treated as markup and entities will be expanded.

However, parsed character data should not contain any &, <, or > characters; these need to be represented by the < and > entities, respectively.

CDATA

CDATA means character data.

CDATA is text that will NOT be parsed by a parser. Tags inside the text will NOT be treated as markup and entities will not be expanded.

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