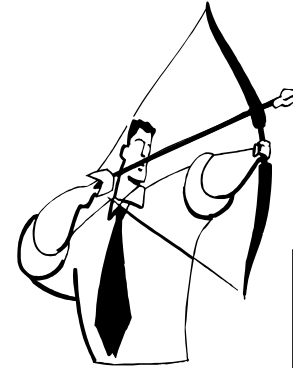


# XMLSchema Reference

The Net Objectives



## Quick Reference



**From *An Introduction to XML*  
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### XMLSchema: Element/Attribute Declaration

```
<element name="element name" type="element type" [options]/>
-or-
<element name="element name" type="element type" [options]
  <attribute name="attribute name", type="attribute type" [options]/>
</element>
```

### XMLSchema: Primitive Types

binary	raw binary data
boolean	logical true/false
decimal (Integer)	signed integer (+/-)
double	64-bit floating point
float	32-bit floating point
recurringInstant (date, time)	specific date/time to be scheduled
string (NMTOKEN, language)	characters
timeDuration	a span of time
timeInstant	date/time combined to define an instant
uri	A Uniform Resource Indicator

### XMLSchema: User-Defined Element Types

```
<complexType name="complexType name">
  element specification
  element specification
  ...
</complexType>
```

### XML Schema: User-Defined Attribute Types

```
<simpleType base = "type">
  <enumeration value="1st choice"/>
  <enumeration value="2nd choice"/>
  ...
</simpleType>
```

### XMLSchema: Element Cardinality

minOccurs: the minimum number of times the element must occur

maxOccurs: the maximum number of times the element may occur

### XMLSchema: Namespace

<http://www.w3.org/1999/XMLSchema>

# XML Language Reference

## XML: Rules for a well-formed document

1. Each non-empty element must have an opening and closing tag
2. Each empty element must have a forward-slash (whack) before the closing angle-bracket
3. A closing tag must match the most recently opened, non-closed tag. In other words, elements must be nested in order
4. Attribute values must be enclosed in double quotes.
5. Markup characters are not allowed in text. < & > “ ’ must use entity references, even in a quoted attribute value. Example: &lt; for the < symbol.
6. Unconstrained documents (those without a DTD or Schema) will default to CDATA attribute types

## XML: Element and Attribute Naming Rules

1. Must begin with a letter or underscore
2. May contain only letters, numbers, hyphens, periods, underscores thereafter May not begin with xml in any case
4. Are case-sensitive
5. May use international symbols such as umlauts and accents.

## XML: Entity References and Unparsed Data

&lt;	<
&gt;	>
&amp;	&
&quot;	“
&apos;	‘

<![CDATA[Don't worry, this "text" is legal & will <not> be parsed at all.]]>

## XML: Processing Instruction

<? xml version = "1.0" [encoding="encoding type"] [standalone="yes|no"]?>

**version:** required attribute, currently 1.0 is standard.

**encoding:** optional attribute. Examples are "US-ASCII" and "UTF-8".

**standalone:** optional attribute. "no" indicates that a DTD will be used, and must therefore be specified in a <!DOCTYPE> instruction. "yes" indicates that no DTD will be used.

## XML: <!DOCTYPE> declaration

<!DOCTYPE root-element SYSTEM|PUBLIC ["name"] "uri">

examples:

<!DOCTYPE Catalog SYSTEM "DTD/Catalog.dtd">

<!DOCTYPE Catalog PUBLIC "Catalog" "http://www.catcorp.com/dtd/Catalog.dtd">

## XML: Reserved Attributes

xml:lang  
xml:space  
xml:link  
xml:attribute

# DTD Reference

## DTD: Element Declaration

<!ELEMENT name contents>

**name:** Must follow xml element name conventions, should not include < > characters.

**contents:** May be a data rule or a list of other elements contained by this element.

## DTD: Element Contents Definition

**ANY** The element may contain anything.

**PCDATA** The element contains parsed character data, that is, general characters, excluding < > & “ ‘ which require an entity reference.

**(e1, e2, ...)** The element contains other elements, in the order and with the cardinality indicated

**EMPTY** The element must be empty

## DTD: Multiple Contained Elements (Examples)

**(division, district)** – contains exactly 1 division followed by exactly 1 district

**(division|company, district)** – contains either exactly 1 division or exactly 1 company, followed by exactly 1 district.

**(division, district\*)** – contains exactly 1 division followed by zero, 1 or more districts.

**(division?, district)** – contains zero or 1 division followed by exactly 1 district

**(division+|district+)** – contains 1 or more divisions followed by one or more districts.

## DTD Attribute Declaration

<!ATTLIST element name type default>

**element:** The element that this attribute is found within

**name:** Name of the attribute. Must follow the Element and Attribute Naming Ruled

**type:** The data type of this attribute

**default:** The default value of this attribute, if any, preceded by a default modifier, if any.

## DTD: Attribute Data Types

**CDATA** Character data

**Enumerated** A series of values, one of which is chosen, such as (Monday | Tuesday)

**ENTITY** A custom entity reference

**ID** An identifier that can be used to refer to this element from another.

**IDREF(S)** The value of one or more other attributes, referred to by ID

**NMTOKEN(S)** One or more XML name tokens

**NOTATION** A notation

## DTD: Element Cardinality

<default>	1
+	1+
?	0,1
*	0+

## DTD: Attribute Default Modifiers

#REQUIRED  
#IMPLIED  
#FIXED