XML Schema Reference

Dans ce document vous trouverez la liste d'éléments XML Schema ainsi que la description des éléments suivants : element, attribute, simpleType, complexType et sequence.

Vous trouverez la référence complète de XML Schema à l'adresse suivante : http://www.w3schools.com/Schema/schema_elements_ref.asp

XSD Elements

Element	Explanation
all	Specifies that the child elements can appear in any order. Each child element can occur 0 or 1 time
annotation	Specifies the top-level element for schema comments
any	Enables the author to extend the XML document with elements not specified by the schema
anyAttribute	Enables the author to extend the XML document with attributes not specified by the schema
appInfo	Specifies information to be used by the application (must go inside annotation)
attribute	Defines an attribute
attributeGroup	Defines an attribute group to be used in complex type definitions
choice	Allows only one of the elements contained in the <choice> declaration to be present within the containing element
complexContent	Defines extensions or restrictions on a complex type that contains mixed content or elements only
complexType	Defines a complex type element
documentation	Defines text comments in a schema (must go inside annotation)
element	Defines an element
extension	Extends an existing simpleType or complexType element
field	Specifies an XPath expression that specifies the value used to define an identity constraint
group	Defines a group of elements to be used in complex type definitions
import	Adds multiple schemas with different target namespace to a document
include	Adds multiple schemas with the same target namespace to a document
key	Specifies an attribute or element value as a key (unique, non-nullable, and always present) within the containing element in an instance document

keyref	Specifies that an attribute or element value correspond to those of the specified key or unique element
list	Defines a simple type element as a list of values
notation	Describes the format of non-XML data within an XML document
redefine	Redefines simple and complex types, groups, and attribute groups from an external schema
restriction	Defines restrictions on a simpleType, simpleContent, or a complexContent
schema	Defines the root element of a schema
selector	Specifies an XPath expression that selects a set of elements for an identity constraint
sequence	Specifies that the child elements must appear in a sequence. Each child element can occur from 0 to any number of times
simpleContent	Contains extensions or restrictions on a text-only complex type or on a simple type as content and contains no elements
simpleType	Defines a simple type and specifies the constraints and information about the values of attributes or text-only elements
union	Defines a simple type as a collection (union) of values from specified simple data types
unique	Defines that an element or an attribute value must be unique within the scope

XSD Restrictions/Facets for Datatypes

Look at XSD Restrictions!

Constraint	Description
enumeration	Defines a list of acceptable values
fractionDigits	Specifies the maximum number of decimal places allowed. Must be equal to or greater than zero
length	Specifies the exact number of characters or list items allowed. Must be equal to or greater than zero
maxExclusive	Specifies the upper bounds for numeric values (the value must be less than this value)
maxInclusive	Specifies the upper bounds for numeric values (the value must be less than or equal to this value)
maxLength	Specifies the maximum number of characters or list items allowed. Must be equal to or greater than zero

minExclusive	Specifies the lower bounds for numeric values (the value must be greater than this value)
minInclusive	Specifies the lower bounds for numeric values (the value must be greater than or equal to this value)
minLength	Specifies the minimum number of characters or list items allowed. Must be equal to or greater than zero
pattern	Defines the exact sequence of characters that are acceptable
totalDigits	Specifies the exact number of digits allowed. Must be greater than zero
whiteSpace	Specifies how white space (line feeds, tabs, spaces, and carriage returns) is handled

XML Schema element Element

Complete XML Schema Reference

Definition and Usage

The element element defines an element.

Element Information

- **Parent elements:** schema, choice, all, sequence, group

Syntax

```
<element
id=ID
name=NCName
ref=QName
type=QName
substitutionGroup=QName
default=string
fixed=string
form=qualified|unqualified
maxOccurs=nonNegativeInteger|unbounded
minOccurs=nonNegativeInteger
nillable=true|false
abstract=true|false
block=(#all|list of (extension|restriction))
final=(#all|list of (extension|restriction))
any attributes
>

annotation?,((simpleType|complexType)?,(unique|key|keyref)*))
```

```
</element>
```

(The ? sign declares that the element can occur zero or one time, and the * sign declares that the element can occur zero or more times inside the element element)

Attribute	Description
id	Optional. Specifies a unique ID for the element
name	Optional. Specifies a name for the element. This attribute is required if the parent element is the schema element
ref	Optional. Refers to the name of another element. The ref attribute can include a namespace prefix. This attribute cannot be used if the parent element is the schema element
type	Optional. Specifies either the name of a built-in data type, or the name of a simpleType or complexType element
substitutionGroup	Optional. Specifies the name of an element that can be substituted with this element. This attribute cannot be used if the parent element is not the schema element
default	Optional. Specifies a default value for the element (can only be used if the element's content is a simple type or text only)
fixed	Optional. Specifies a fixed value for the element (can only be used if the element's content is a simple type or text only)
form	Optional. Specifies the form for the element. "unqualified" indicates that this attribute is not required to be qualified with the namespace prefix. "qualified" indicates that this attribute must be qualified with the namespace prefix. The default value is the value of the elementFormDefault attribute of the schema element. This attribute cannot be used if the parent element is the schema element
maxOccurs	Optional. Specifies the maximum number of times this element can occur in the parent element. The value can be any number >= 0, or if you want to set no limit on the maximum number, use the value "unbounded". Default value is 1. This attribute cannot be used if the parent element is the schema element
minOccurs	Optional. Specifies the minimum number of times this element can occur in the parent element. The value can be any number >= 0. Default value is 1. This attribute cannot be used if the parent element is the schema element
nillable	Optional. Specifies whether an explicit null value can be assigned to the element. True enables an instance of the element to have the null attribute set to true. The null attribute is defined as part of the XML Schema namespace for instances. Default is false
abstract	Optional. Specifies whether the element can be used in an instance document. True indicates that the element cannot appear in the instance document. Instead, another element whose substitutionGroup attribute contains the qualified name (QName) of this element must appear in this element's place. Default is false
block	Optional. Prevents an element with a specified type of derivation from being used in place of this element. This value can contain #all or a list that is a subset of extension, restriction, or equivClass: • extension - prevents elements derived by extension • restriction - prevents elements derived by restriction • substitution - prevents elements derived by substitution

	• #all - prevents all derived elements
final	Optional. Sets the default value of the final attribute on the element element. This attribute cannot be used if the parent element is not the schema element. This value can contain #all or a list that is a subset of extension or restriction: • extension - prevents elements derived by extension • restriction - prevents elements derived by restriction • #all - prevents all derived elements
any attributes	Optional. Specifies any other attributes with non-schema namespace

Example 1

The following example is a schema with four simple elements named "fname", "lname", "age", and "dateborn", which are of type string, nonNegativeInteger, and date:

```
<?xml version="1.0"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">

  <xs:element name="fname" type="xs:string"/>
  <xs:element name="lname" type="xs:string"/>
  <xs:element name="age" type="xs:nonNegativeInteger"/>
  <xs:element name="dateborn" type="xs:date"/>

</xs:schema>
```

XML Schema attribute Element

Complete XML Schema Reference

Definition and Usage

The attribute element defines an attribute.

Element Information

- **Parent elements:** attributeGroup, schema, complexType, restriction (both simpleContent and complexContent), extension (both simpleContent and complexContent)

Syntax

```
<attribute
default=string
fixed=string
form=qualified|unqualified
id=ID
```

name=NCName
ref=QName
type=QName
use=optional|prohibited|required
any attributes
>

(annotation?,(simpleType?))

</attribute>

(The ? sign declares that the element can occur zero or one time inside the attribute element)

Attribute	**Description**
default	Optional. Specifies a default value for the attribute. Default and fixed attributes cannot both be present
fixed	Optional. Specifies a fixed value for the attribute. Default and fixed attributes cannot both be present
form	Optional. Specifies the form for the attribute. The default value is the value of the attributeFormDefault attribute of the element containing the attribute. Can be set to one of the following: • "qualified" - indicates that this attribute must be qualified with the namespace prefix and the no-colon-name (NCName) of the attribute • unqualified - indicates that this attribute is not required to be qualified with the namespace prefix and is matched against the (NCName) of the attribute
id	Optional. Specifies a unique ID for the element
name	Optional. Specifies the name of the attribute. Name and ref attributes cannot both be present
ref	Optional. Specifies a reference to a named attribute. Name and ref attributes cannot both be present. If ref is present, simpleType element, form, and type cannot be present
type	Optional. Specifies a built-in data type or a simple type. The type attribute can only be present when the content does not contain a simpleType element
use	Optional. Specifies how the attribute is used. Can be one of the following values: • optional - the attribute is optional (this is default) • prohibited - the attribute cannot be used • required - the attribute is required
any attributes	Optional. Specifies any other attributes with non-schema namespace

Example 1

<xs:attribute name="code">

<xs:simpleType>

```
  <xs:restriction base="xs:string">
    <xs:pattern value="[A-Z][A-Z]"/>
  </xs:restriction>
</xs:simpleType>

</xs:attribute>
```

XML Schema simpleType Element

Complete XML Schema Reference

Definition and Usage

The simpleType element defines a simple type and specifies the constraints and information about the values of attributes or text-only elements.

Element Information

- **Parent elements:** attribute, element, list, restriction, schema, union

Syntax

```
<simpleType
id=ID
name=NCName
any attributes
>

(annotation?,(restriction|list|union))

</simpleType>
```

(The ? sign declares that the element can occur zero or one time inside the simpleType element)

Attribute	Description
id	Optional. Specifies a unique ID for the element
name	Specifies a name for the element. This attribute is required if the simpleType element is a child of the schema element, otherwise it is not allowed
any attributes	Optional. Specifies any other attributes with non-schema namespace

Example 1

This example defines an element called "age" that is a simple type with a restriction. The value of age can NOT be lower than 0 or greater than 100:

```
<xs:element name="age">
  <xs:simpleType>
    <xs:restriction base="xs:integer">
      <xs:minInclusive value="0"/>
      <xs:maxInclusive value="100"/>
    </xs:restriction>
  </xs:simpleType>
</xs:element>
```

XML Schema complexType Element

Complete XML Schema Reference

Definition and Usage

The complexType element defines a complex type. A complex type element is an XML element that contains other elements and/or attributes.

Element Information

- **Parent elements:** element, redefine, schema

Syntax

```
<complexType
id=ID
name=NCName
abstract=true|false
mixed=true|false
block=(#all|list of (extension|restriction))
final=(#all|list of (extension|restriction))
any attributes
>

(annotation?,(simpleContent|complexContent|((group|all|
choice|sequence)?,((attribute|attributeGroup)*,anyAttribute?))))

</complexType>
```

(The ? sign declares that the element can occur zero or one time, and the * sign declares that the element can occur zero or more times inside the complexType element)

Attribute	Description
id	Optional. Specifies a unique ID for the element
name	Optional. Specifies a name for the element
abstract	Optional. Specifies whether the complex type can be used in an instance document. True indicates that an element cannot use this complex type directly but must use a complex type derived from this complex type. Default is false
mixed	Optional. Specifies whether character data is allowed to appear between the child elements of this complexType element. Default is false. If a simpleContent element is a child element, the mixed attribute is not allowed!
block	Optional. Prevents a complex type that has a specified type of derivation from being used in place of this complex type. This value can contain #all or a list that is a subset of extension or restriction: • extension - prevents complex types derived by extension • restriction - prevents complex types derived by restriction • #all - prevents all derived complex types
final	Optional. Prevents a specified type of derivation of this complex type element. Can contain #all or a list that is a subset of extension or restriction. • extension - prevents derivation by extension • restriction - prevents derivation by restriction • #all - prevents all derivation
any attributes	Optional. Specifies any other attributes with non-schema namespace

Example 1

The following example has an element named "note" that is of a complex type:

```
<xs:element name="note">
  <xs:complexType>
    <xs:sequence>
  <xs:element name="to" type="xs:string"/>
  <xs:element name="from" type="xs:string"/>
  <xs:element name="heading" type="xs:string"/>
  <xs:element name="body" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

Annexe

A Reference to an XML Schema

This XML document has a reference to an XML Schema:

```
<?xml version="1.0"?>
<note <--!Root of the document -->
xmlns=http://www.mynamespace.com <--!Default name space declaration. This declaration tells
the schema-validator that all the elements used in this XML document are declared in the
"http://www.w3schools.com" namespace. -->
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:schemaLocation="http://www.mynamespace.com note.xsd">
  <to>Tove</to>
  <from>Jani</from>
  <heading>Reminder</heading>
  <body>Don't forget me this weekend!</body>
</note>
```

Another type of reference to an XML Schema

```
<biblio xsi:noNamespaceSchemaLocation="livres.xsd"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
</biblio>
```