

XML Schema

a very short introduction

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XML Schema

- Defines a document type
 - vocabulary definition (elements, attributes)
 - and grammar definition (what is allowed inside an element)
- Replaces DTDs
 - With more precision
 - Written in XML
 - Takes namespaces into account

Concepts

- simple element type definition
- complex element type definition
- element definition

Simple type

- the type of an element that has no sub-elements
- single values or lists of values
- based on a predefined type (integer, string, ...)
- with value restrictions

e.g. angle, coordinate, color

Example

```
<xsd:simpleType name="mySimpleDayOfMonth" >  
  <xsd:restriction base="xsd:positiveInteger" >  
    <!-- positiveInteger defines the minimum to be 1 -->  
    <xsd:maxInclusive value="31" />  
  </xsd:restriction >  
</xsd:simpleType >
```

Complex type

- types for complex elements
- indicates the authorized sub-elements
 - sequences or choices
 - number of occurrences
 - ...
- defines the attributes

Example

```
<complexType name="ModifiedLinearRingType">
  <complexContent>
    <extension base="gml:AbstractRingType"> <!-- re-use an existing type -->
      <sequence>
        <choice minOccurs="4" maxOccurs="unbounded">
          <element ref="gml:pos"/>
          <element ref="gml:pointProperty"/>
          <element ref="gml:pointRep"/>
        </choice>
        <element ref="gml:posList"/>
        <element ref="gml:coord" minOccurs="4" maxOccurs="unbounded">
          </element>
        </sequence>
      </extension>
    </complexContent>
  </complexType>
```

Element definition

```
<xsd:element name="month" type="xsd:string"/>
```

```
<xsd:element name="dom" type="xsd:string"/>
```

```
<xsd:element name="ring1"  
  type="ModifiedLinearRingType"/>
```

```
<xsd:element name="direction"  
  type="gml:DirectionPropertyType"/>
```