

# XML Schema - Kurzreferenz

## Schema

```

Root
<schema
  attributeFormDefault = (qualified | unqualified) : unqualified
  blockDefault = (#all | List of (extension | restriction | substitution)) : "
  elementFormDefault = (qualified | unqualified) : unqualified
  finalDefault = (#all | List of (extension | restriction)) : "
  id = ID
  targetNamespace = anyURI
  version = token
  xml:lang = language
  { foreign attributes }>
  Content: ((include | import | redefine | annotation)*, (((simpleType | complexType | group | attributeGroup) | element | attribute | notation), annotation*))
</schema>
  
```

<http://www.w3.org/TR/xmlschema-1/#declare-schema>



## Assembling of schemas

```

<include
  id = ID
  schemaLocation = anyURI
  { foreign attributes }>
  Content: (annotation?)
</include>

<redefine
  id = ID
  schemaLocation = anyURI
  { foreign attributes }>
  Content: (annotation | (simpleType | complexType | group | attributeGroup))*
</redefine>

<import
  id = ID
  namespace = anyURI
  schemaLocation = anyURI
  { foreign attributes }>
  Content: (annotation?)
</import>
http://www.w3.org/TR/xmlschema-1/#layer2
  
```

## Elements

```

<element
  abstract = boolean : false
  block = (#all | List of (extension | restriction | substitution))
  default = string
  final = (#all | List of (extension | restriction))
  fixed = string
  form = (qualified | unqualified)
  id = ID
  maxOccurs = (nonNegativeInteger | unbounded) : 1
  minOccurs = nonNegativeInteger : 1
  name = NCName
  nillable = boolean : false
  ref = QName
  substitutionGroup = QName
  type = QName
  { foreign attributes }>
  Content: (annotation?, ((simpleType | complexType)?, (unique | key | keyref)*))
</element>

http://www.w3.org/TR/xmlschema-1/#cElement\_Declarations
  
```

```

Element group
<group
  name = NCName
  Content: (annotation?, (all | choice | sequence))
</group>

http://www.w3.org/TR/xmlschema-1/#declare-namedModelGroup
  
```

## Attributes

```

<attribute
  default = string
  fixed = string
  form = (qualified | unqualified)
  id = ID
  name = NCName
  ref = QName
  type = QName
  use = (optional | prohibited | required) : optional
  { foreign attributes }>
  Content: (annotation?, simpleType?)
</attribute>

http://www.w3.org/TR/xmlschema-1/#declare-attribute

Attribute group
<attributeGroup
  id = ID
  name = NCName
  ref = QName
  { foreign attributes }>
  Content: (annotation?, ((attribute | attributeGroup)*, anyAttribute?))
</attributeGroup>

http://www.w3.org/TR/xmlschema-1/#declare-attributeGroup
  
```

## Types

```

Global complex type
<complexType
  abstract = boolean : false
  block = (#all | List of (extension | restriction))
  final = (#all | List of (extension | restriction))
  id = ID
  mixed = boolean : false
  name = NCName
  { foreign attributes }>
  Content:
  (annotation?,
  (simpleContent | complexContent |
  ((group | all | choice | sequence)?,
  ((attribute | attributeGroup)*,
  anyAttribute?))))
</complexType>

http://www.w3.org/TR/xmlschema-1/#declare-type
  Derivation

<restriction
  base = QName
  id = ID
  { foreign attributes }>
  Content: (annotation?, (simpleType?, (minExclusive | minInclusive | maxExclusive | maxInclusive | totalDigits | fractionDigits | length | minLength | maxLength | enumeration | whiteSpace | pattern)*), ((attribute | attributeGroup)*, anyAttribute?))
</restriction>

<list
  id = ID
  itemType = QName
  { foreign attributes }>
  Content: (annotation?, simpleType?)
</list>

<union
  id = ID
  memberTypes = List of QName
  { foreign attributes }>
  Content: (annotation?, simpleType*)
</union>

http://www.w3.org/TR/xmlschema-1/#declare-datatype

<extension
  base = QName
  id = ID
  { foreign attributes }>
  Content: (annotation?, ((attribute | attributeGroup)*, anyAttribute?))
</extension>
  
```

```

Global simple type
<simpleType
  final = (#all | List of (list | union | restriction))
  id = ID
  name = NCName
  { foreign attributes }>
  Content: (annotation?, (restriction | list | union))
</simpleType>

http://www.w3.org/TR/xmlschema-1/#declare-datatype
  Derivation

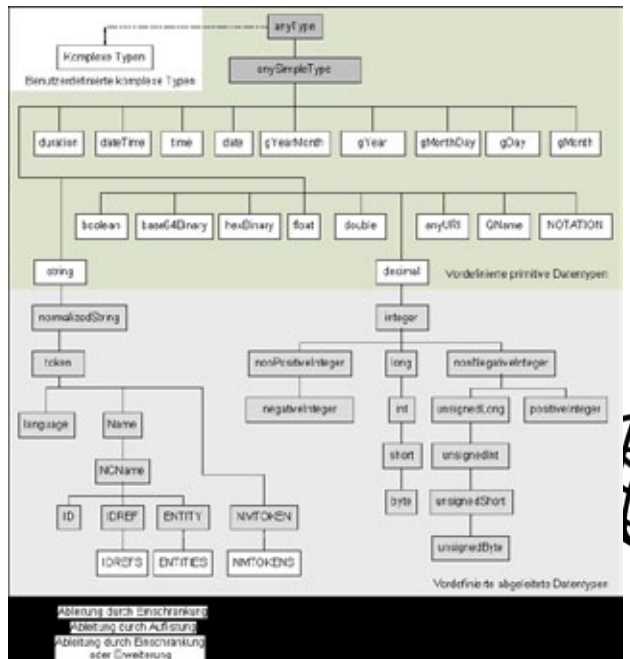
<restriction
  base = QName
  id = ID
  { foreign attributes }>
  Content: (annotation?, (simpleType?, (minExclusive | minInclusive | maxExclusive | maxInclusive | totalDigits | fractionDigits | length | minLength | maxLength | enumeration | whiteSpace | pattern)*))
</restriction>

<list
  id = ID
  itemType = QName
  { foreign attributes }>
  Content: (annotation?, simpleType?)
</list>

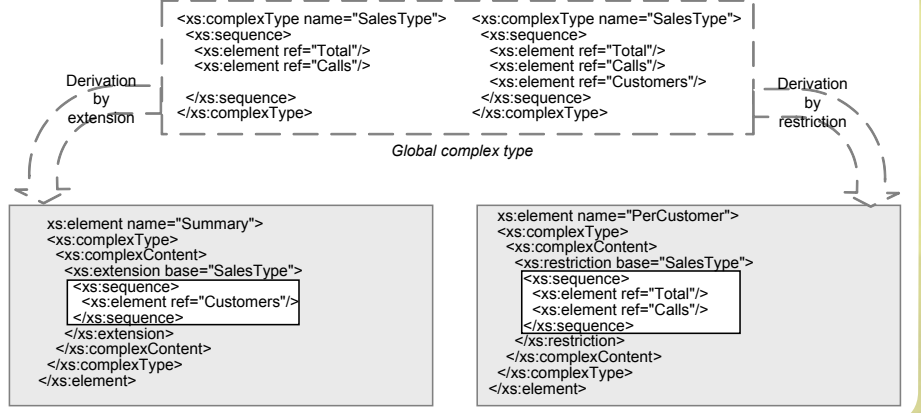
<union
  id = ID
  memberTypes = List of QName
  { foreign attributes }>
  Content: (annotation?, simpleType*)
</union>

http://www.w3.org/TR/xmlschema-1/#declare-datatype
  
```

## Datentypen



## Derivative



## Keys and references

### Definition

```
<unique
id = ID
name = NCName
{ foreign attributes }
Content: (annotation?, (selector, field+))
</unique>
```

```
<key
id = ID
name = NCName
{ foreign attributes }
Content: (annotation?, (selector, field+))
</key>
```

```
<keyref
id = ID
name = NCName
refer = QName
{ foreign attributes }
Content: (annotation?, (selector, field+))
</keyref>
```

### Field reference

```
<selector
id = ID
xpath = Subset of XPath
{ foreign attributes }
Content: (annotation?)
</selector>
```

```
<field
id = ID
xpath = Subset of XPath
{ foreign attributes }
Content: (annotation?)
</field>
```

### Any

```
<any
id = ID
maxOccurs = (nonNegativeInteger | unbounded) : 1
minOccurs = nonNegativeInteger : 1
namespace = ((##any | ##other) | List of (anyURI |
##targetNamespace | ##local)) : ##any
processContents = (lax | skip | strict) : strict
{ foreign attributes }
Content: (annotation?)
</any>
```

<http://www.w3.org/TR/xmlschema-1/#declare-openness>

### Notation

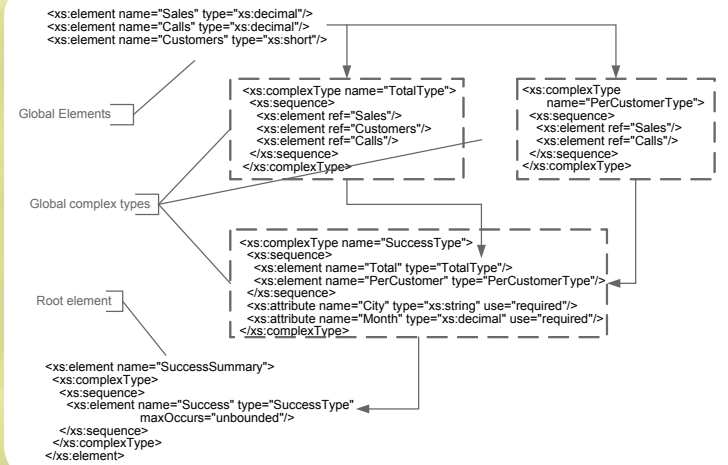
```
<notation
id = ID
name = NCName
public = anyURI
system = anyURI
{ foreign attributes }
Content: (annotation?)
</notation>
```

### Documentation

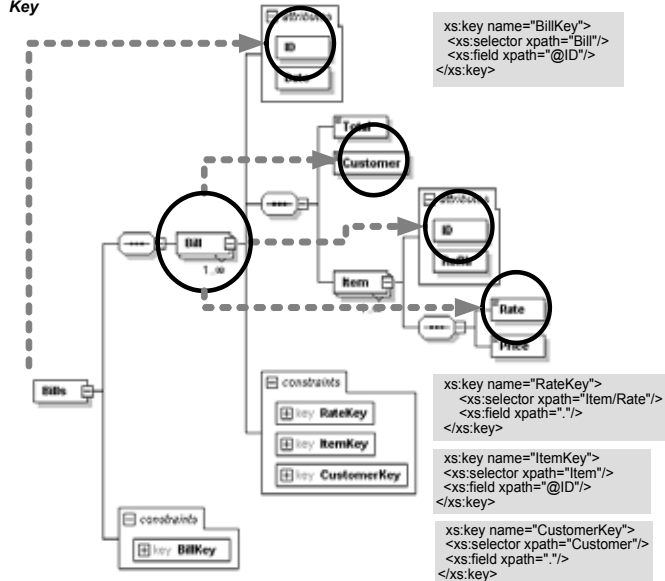
```
<annotation
id = ID
{ foreign attributes }
Content: (appinfo | documenta-
tion)*
</annotation>
```

```
<appinfo
source = anyURI
Content: ({any})*
</appinfo>
```

```
<documentation
source = anyURI
xml:lang = language
Content: ({any})*
</documentation>
```



### Key



### Content models

```
<all
id = ID
maxOccurs = 1 : 1
minOccurs = (0 | 1) : 1
{ foreign attributes }
Content: (annotation?, element*)
</all>
```

```
<choice
id = ID
maxOccurs = (nonNegativeInteger | unbounded) : 1
minOccurs = nonNegativeInteger : 1
{ foreign attributes }
Content: (annotation?, (element | group | choice |
sequence | any)*)
</choice>
```

```
<sequence
id = ID
maxOccurs = (nonNegativeInteger | unbounded) : 1
minOccurs = nonNegativeInteger : 1
{ foreign attributes }
Content: (annotation?, (element | group | choice |
sequence | any)*)
</sequence>
```

<http://www.w3.org/TR/xmlschema-1/#declare-content-Model>

### Overview

#### Primary components

1. Simple type definitions
2. Complex type definitions
3. Attribute declarations
4. Element declarations

#### Secondary components

5. Attribute group definitions
6. Identity-constraint definitions
7. Model group definitions
8. Notation declarations

#### Auxiliary components

9. Model groups
10. Particles
11. Wildcards
12. Attribute Uses
13. Annotations

### Facets

Facet	Description
length	String length
minLength	Minimum string length
maxLength	Maximum string length
pattern	Regular expression
enumeration	Enumeration of allowed values
whiteSpace	Whitespace treatment
maxInclusive	Upper inclusive limit
maxExclusive	Upper exclusive limit
minExclusive	Lower exclusive limit
minInclusive	Lower inclusive limit
totalDigits	Total digits of a (decimal) number
fractionDigits	Fraction digits of a (decimal) number

### Standard

Portal page of the W3C: <http://www.w3.org/XML/Schema>  
 Primer: <http://www.w3.org/TR/xmlschema-0/>  
 Structures: <http://www.w3.org/TR/xmlschema-1/>  
 Datatypes: <http://www.w3.org/TR/xmlschema-2/>

