XML Spy Tutorial Lab 1

An XML Schema is similar to DTD and created by Microsoft. It describes the structure of an XML document. If an XML document follows the XML Schema, it is said to be **valid**; otherwise it is **invalid**.

The structure and syntax of an XML Schema document is complex, and being an XML document itself, an XML Schema must be valid according to the rules of the XML Schema specification. In XMLSpy, Schema View enables you to easily build valid XML Schemas by using graphical drag-and-drop techniques. The XML Schema document you construct is also editable in Text View and Grid View, but is much easier to create and modify in Schema View.

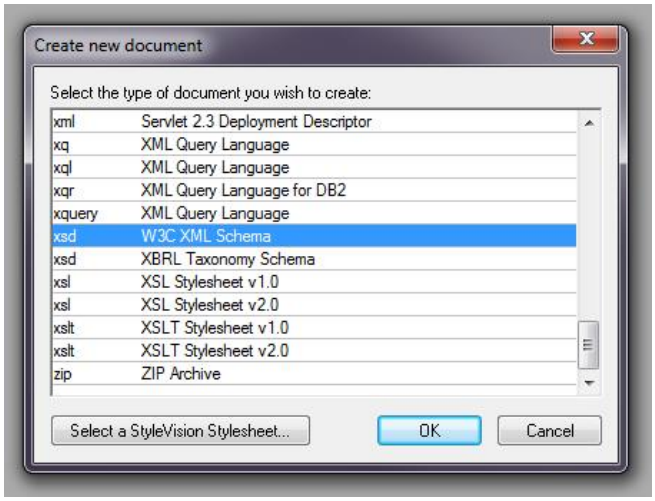
Contents

Objective

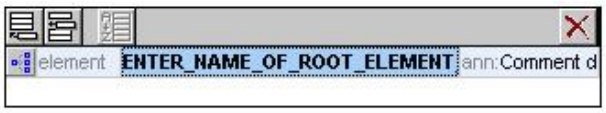
- Create a new schema file
- Define namespaces for the schema
- Define a basic content model
- Add elements to the content model using context menus and drag-and-drop
- Configure the Content Model View

Creating a new XML Schema file

1. [File] > [New] >xsd



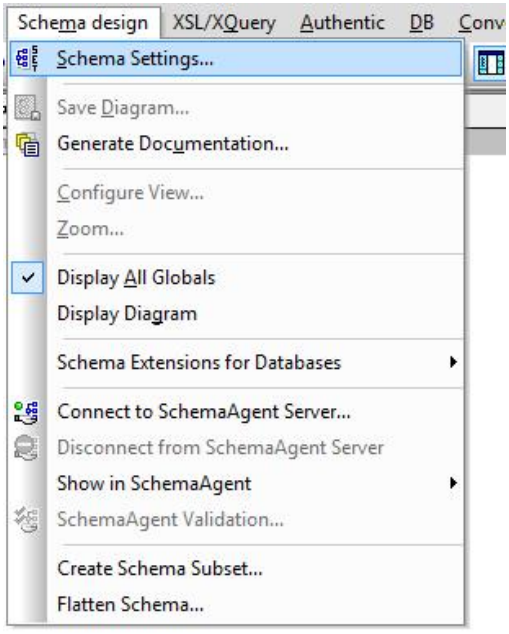
2. Enter in **Company** in ENTER_NAME_OF_ROOT_ELEMENT_HERE



3. Save as `AddressFirst.xsd in a new folder`

Defining Namespaces

1. [Schema Design] > [Schema Setting]

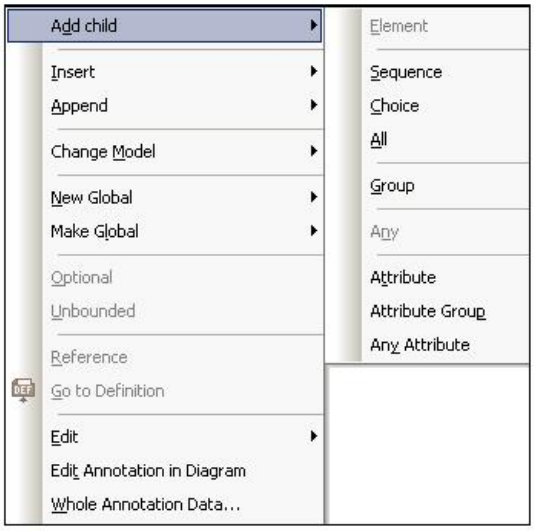


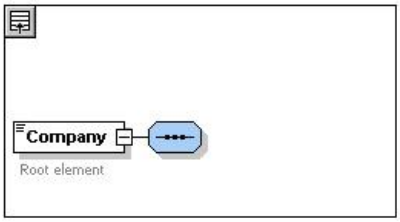
Defining a Content Model

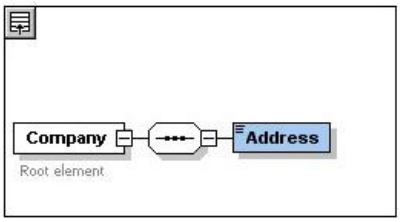
1. Click Display Diagram icon 
2. Right click the root element (Company)
3. [Add child] > [Sequence]
4. [Add child] > [Element]
5. Rename the element as **Address**
6. [Add child] > [Element]
7. Rename the element as **Person**
8. Right click Person and select **Unbounded**

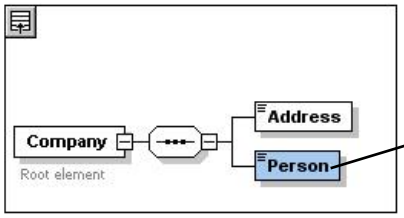
Adding additional level

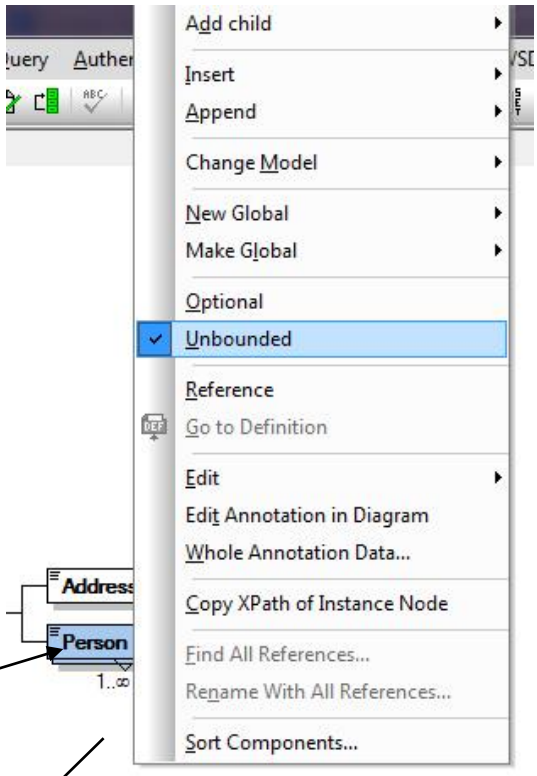
9. Right-click the Address element to open the context menu, and select [Add Child] > [Sequence].
10. Right-click the Sequence compositor, and select [Add Child] > [Element]. Name the newly created element component Name.
11. Click the Name element to select it, from the dropdown menu of the Enter combo box, select the xs:string entry. It will change from complex type to Simple type
12. Switch and observe the text view and grid view

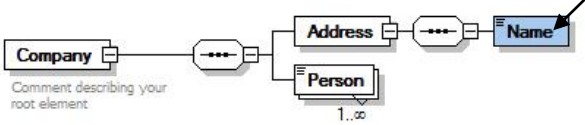






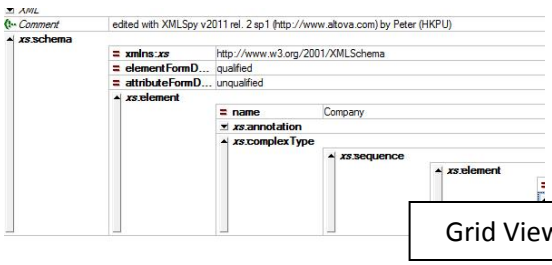







```
      <xs:element name="Address">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Name"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="Person"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

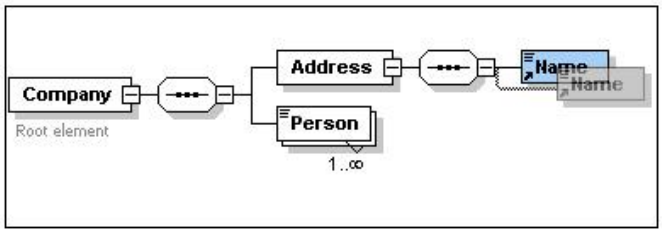
Text View

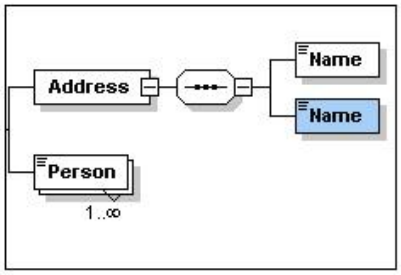


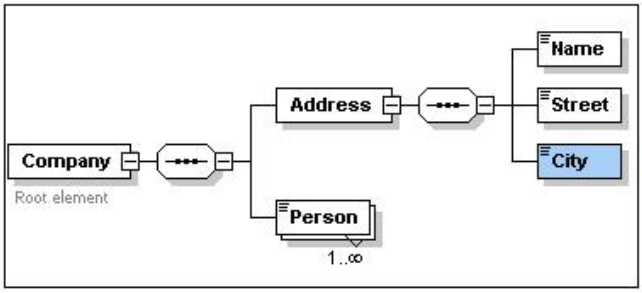
Grid View

Adding Elements with Drag-and-Drop

1. Click the Name element of the Address element,
2. Hold down the Ctrl key, and drag the element box with the mouse. A small "plus" icon appears in the element box, indicating that you are about to copy the element. A copy of the element together with a connector line also appears, showing where the element will be created.
3. Release the mouse button to create the new element in the Address sequence. If the new element appears at an incorrect location, drag it to a location below the Name element.
4. Double-click in the element box, and Enter in Street to change the element name.
5. Use the same method to create a third element called City. The content model should now look like this:

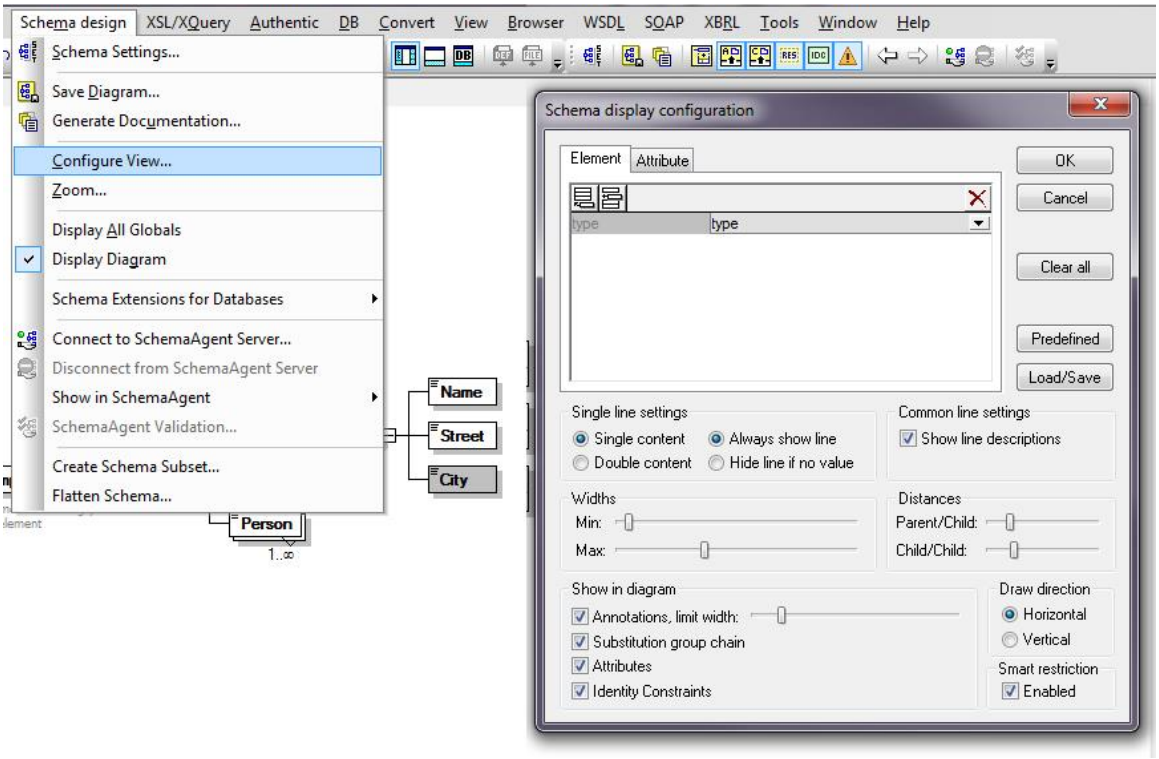


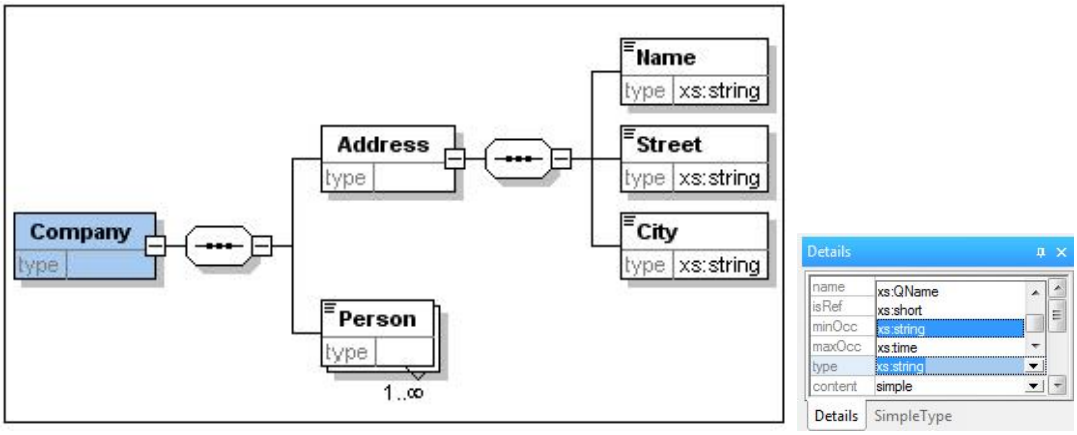




Configuring the Content Model View

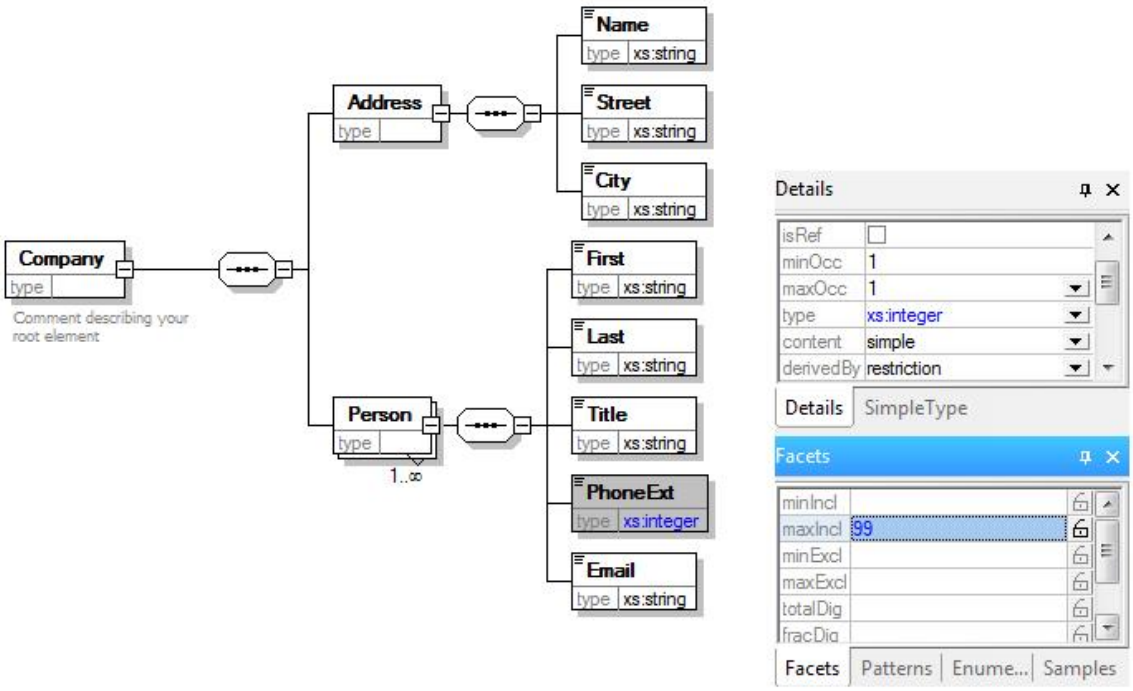
1. [Schema Design] > [Configure view]
2. Click Append icon
3. From the dropdown menu, select Enter (or double-click in the line and enter "Enter").





[Exercise]

Try to create the xsd as following:

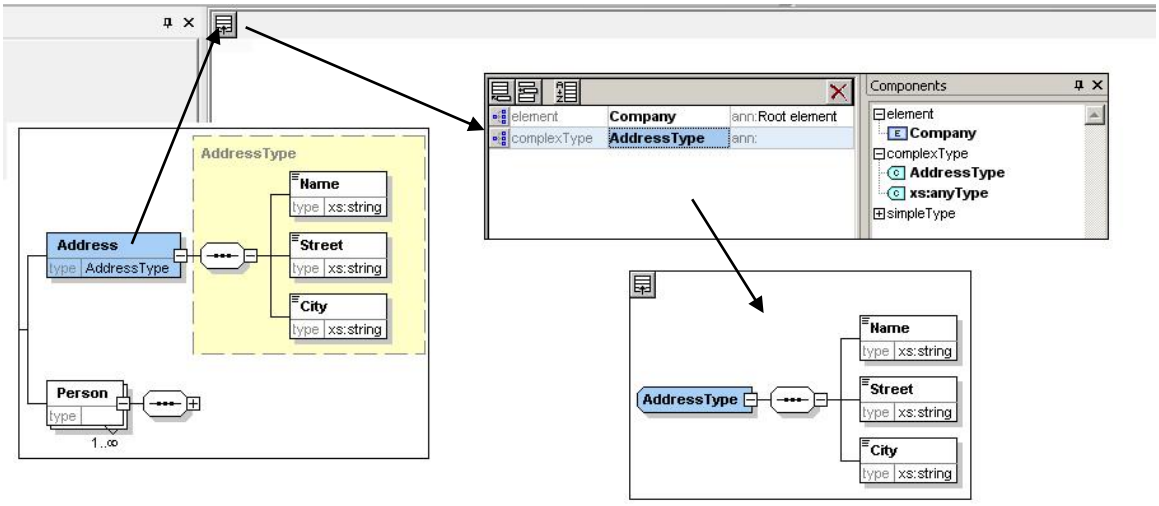


Working with Complex types and Simple types

[Extra] Complex types allow elements in their content and may carry attributes, and Simple type which cannot have element content and cannot carry attributes.

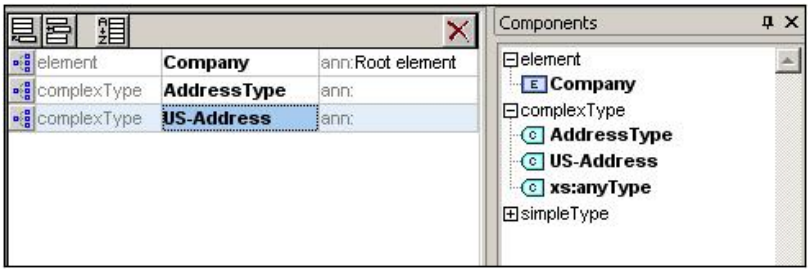
Creating a global complex type

1. Right-click the Address element.
2. Select [Make Global] > [Complex type]. A global complex type called AddressType is created, and the Address element in the Company content model is assigned this Enter.
3. Click the Display All Global icon.
4. Click the expand icons for the element and complex type entries in the Components entry helper, to see the respective schema constructs.
5. The Schema Overview now displays two global components: the Company element and the complex type AddressType. The Components Entry Helper also displays the AddressType complex type.

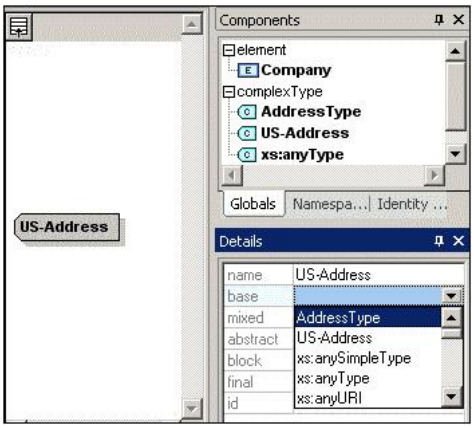


Extending a complex type definition

1. Click the Append icon at the top left of the component window.
2. Select Complex type from the menu. A new line appears in the component list
3. 4. Enter US-Address and confirm with Enter.

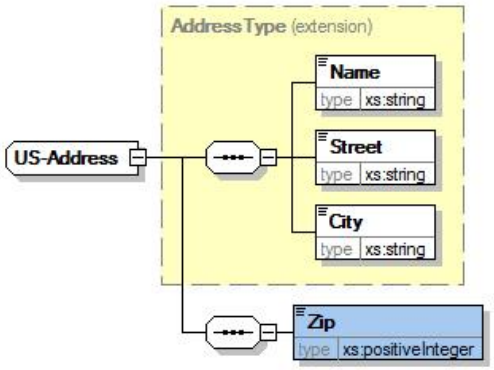


4. Click the Content Model View icon of US-Address to see the content model of the new
5. In the Details entry helper, click the base combo box and select the AddressType entry.



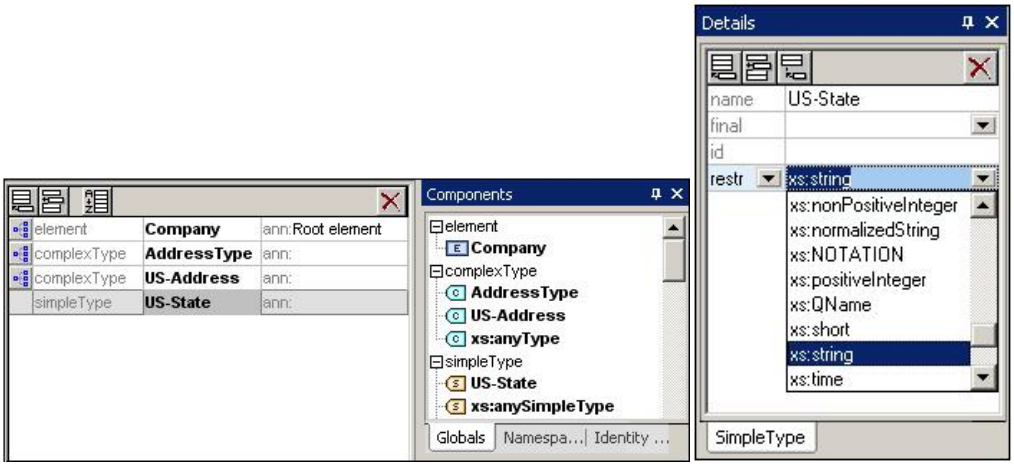
6. Right click the US-Address
7. Select [Add-Child] > [Sequence]

8. Select [Add Child] > [Element]
9. Enter in Zip
10. Change the Enter to positive integer

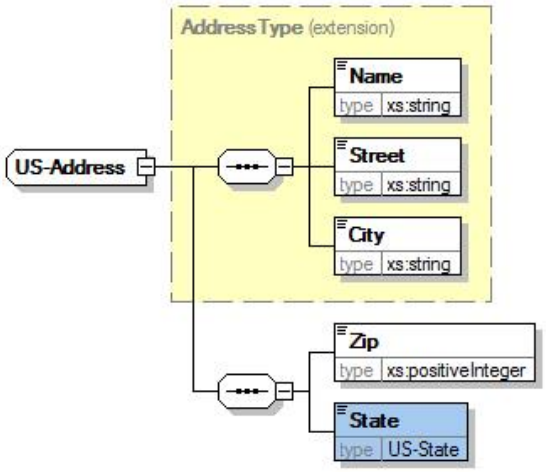


Creating a global Simple type

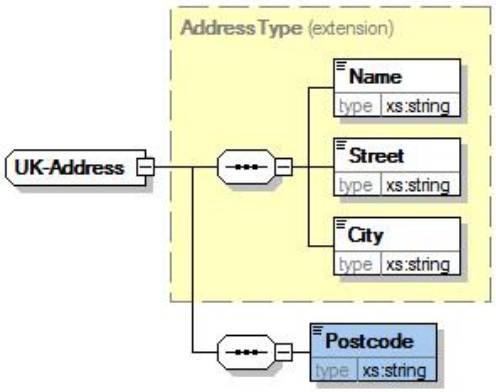
1. Click the Append icon, and in the context menu that appears, select Simple type
2. Enter US-State
3. In the Details Entry Helper, enter xs:string in the restr value field.



4. In Schema Overview, click the Component Model View icon of US-Address.
5. Right-click the lower sequence compositor and select [Add Child] >[Element]
6. Enter State for the element name.
7. Press the Tab key to place the cursor in the value field of the type descriptor line.
8. From the drop-down menu of this combo box, select US-State.

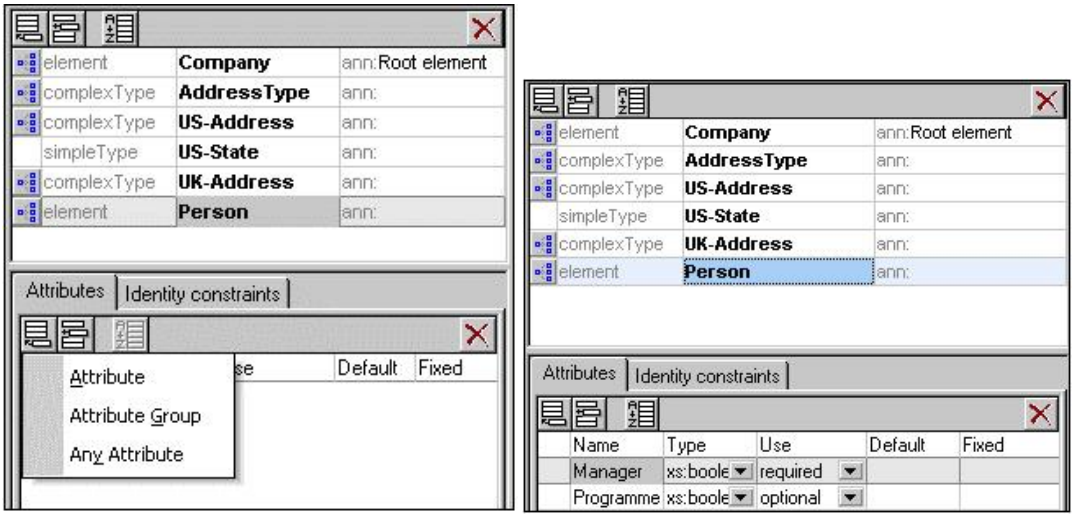


[Exercise] Try to create a UK-Address Complex type as following

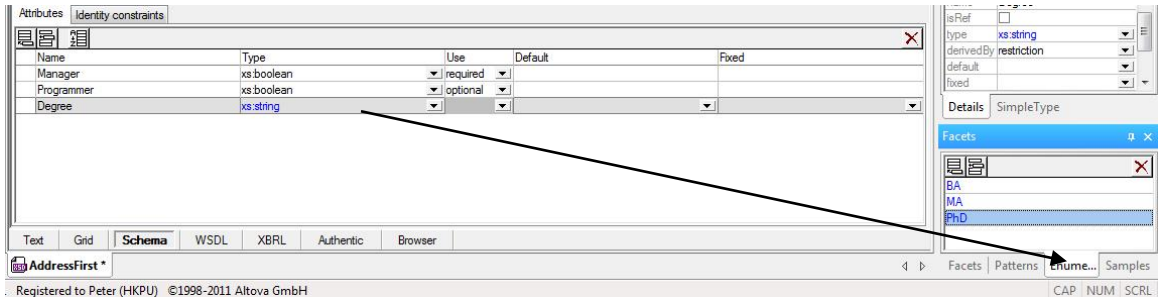


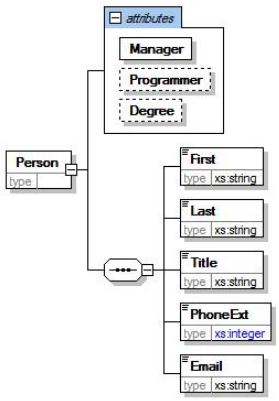
Attributes and Attribute Enumerations

1. Change the Person to Global Complex type
2. Click the Append icon in the top left of the Attributes/Identity Constraints tab group and select the Attribute entry.
3. Enter Manager as the attribute name in the Name field.
4. Use the Type combo box to select xs:boolean.
5. Use combo box to select required.
6. Use the same procedure to create a Programmer attribute with Type=xs:boolean and Use=optional.
7.



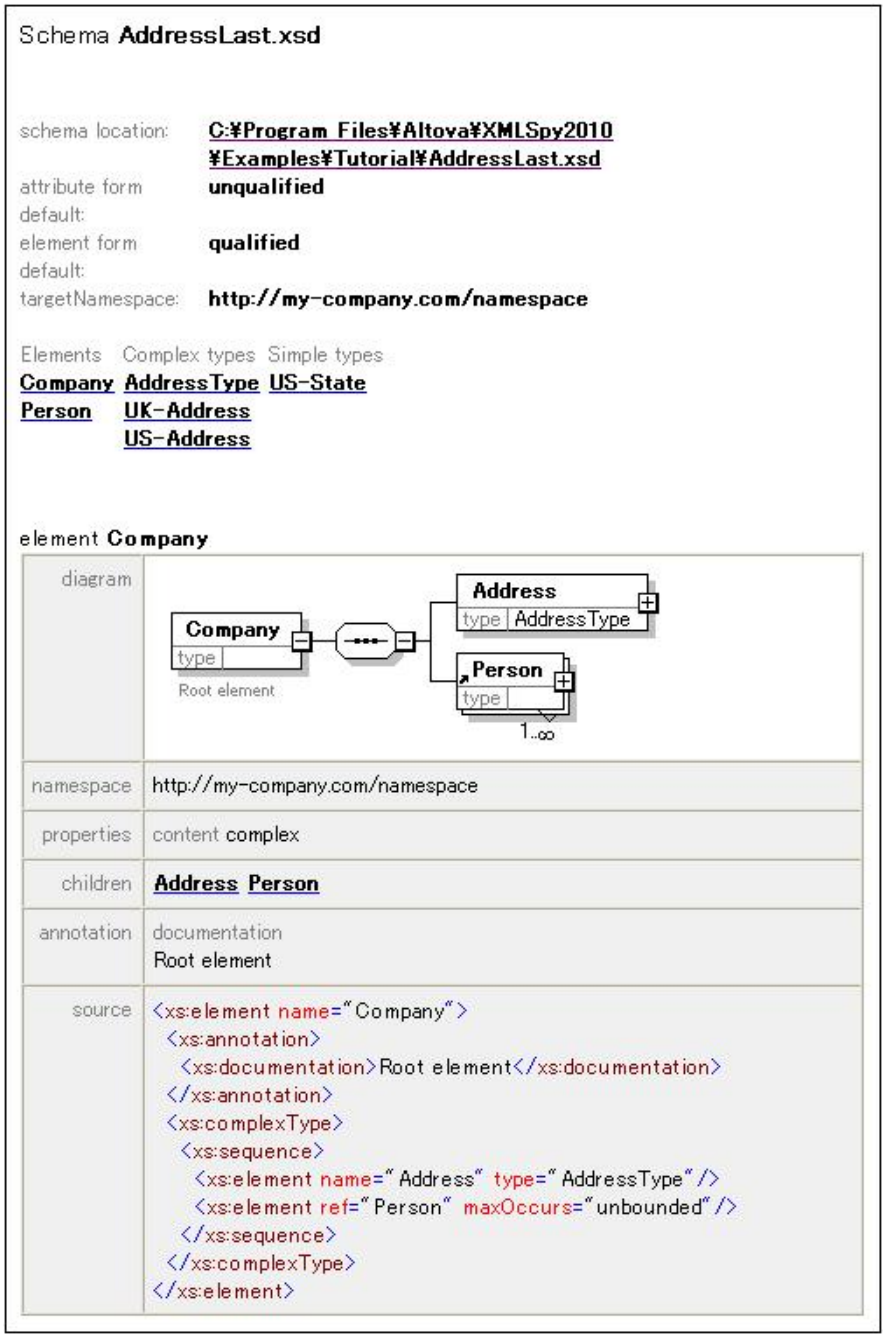
8. Click the Append icon in the top left of the Attributes window, and select the Attribute entry.
9. Enter Degree as the attribute name, and select xs:string as its type.
10. With the Degree attribute selected, in the Facets Entry Helper, click the Enumerations tab
11. In the Enumerations tab, click the Append icon.
12. Enter BA, and confirm with Enter.
13. Use the same procedure to add two more enumerations: MA and PhD.
14. Click on the Content Model View icon of Person.





Schema Documentation

1. [Schema design] > [Generate documentation]
2. For the Output Format option, select HTML, and click OK.
3. In the Save As dialog, select the location where the file is to be saved and give the file a suitable name (say AddressLast.html). Then click the Save button.



Schema **AddressLast.xsd**

schema location: **C:¥Program Files¥Altova¥XMLSpy2010¥Examples¥Tutorial¥AddressLast.xsd**
attribute form default: **unqualified**
element form default: **qualified**
targetNamespace: **http://my-company.com/namespace**

Elements: **Company** **Person**
Complex types: **AddressType** **UK-Address** **US-Address**
Simple types: **US-State**

element **Company**

diagram

namespace: http://my-company.com/namespace

properties: content complex

children: **Address** **Person**

annotation: documentation
Root element

source:

```
<xs:element name="Company">
  <xs:annotation>
    <xs:documentation>Root element</xs:documentation>
  </xs:annotation>
  <xs:complexType>
    <xs:sequence>
      <xs:element name="Address" type="AddressType" />
      <xs:element ref="Person" maxOccurs="unbounded" />
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

Reference

Altova http://www.altova.com/