



# ENGINEERING BULLETIN

## Engineering Bulletin #080527-01 Web Services XSD Primer

Version: 1.0.0    Date: 27 May 2008

**Record of Changes**

<b>Version</b>	<b>Date</b>	<b>Author</b>	<b>Notes</b>
1.0.0	27 May 2008	Jeremy Shovan	Original document creation

## Overview

This document contains a brief primer on reading and parsing XML Schema Definition (.XSD) documents.

This document displays the output from two popular XML tools: Altova's XMLSpy application and Liquid Technologies' Liquid XML Studio application. A thirty-day free evaluation for XMLSpy can be downloaded from <http://www.altova.com>. The free version of Liquid XML Studio can be downloaded from <http://www.liquid-technologies.com>.

## Element Types

### Simple:

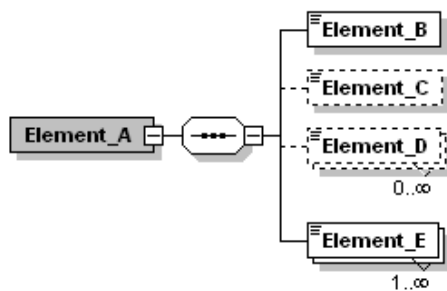
A Simple Type is derived from an XML Data Type which may also define constraints upon the value of the element. Examples of this are:

- An integer with a maximum limit
- A string with a minimum length
- A string which requires a specific length and complies with a regular expression. This is often used for common types such as Phone Numbers.

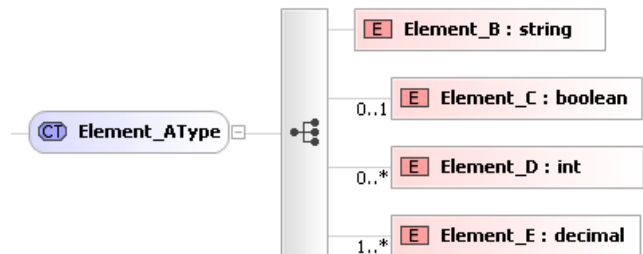
### Complex:

A Complex Type constrains the structure of an Element. *C# would relate to a complex type as a class and its contained properties.*

## Sub Elements and Cardinality



Altova XMLSpy Graphical Notation



Liquid XML Graphical Notation

**Element\_A** – This element represents a class of type Element\_A that contains the following.

**Element\_B (1..1)** – This is a required element and will appear on the Element\_A class as a property named Element\_B.

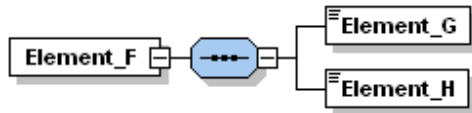
**Element\_C (0..1)** – This is a optional element and will appear on the Element\_A class as a property named Element\_C.

**Element\_D (0..\*)** – This is a optional element and will appear on the Element\_A class as a property named Element\_D which is an array.

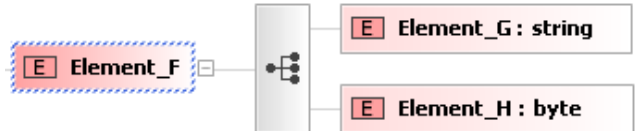
**Element\_E (1..\*)** – This is a required element and will appear on the Element\_A class as a property named Element\_E which is an array.

## Compositors

### Sequence:



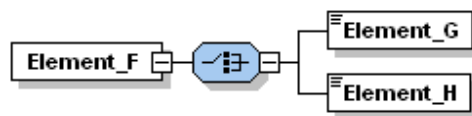
*Altova XMLSpy Graphical Notation*



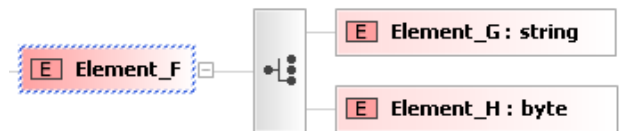
*Liquid XML Graphical Notation*

Sequence requires that the elements be provided in the order that they appear.

### Choice:



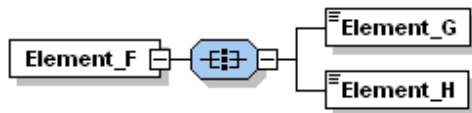
*Altova XMLSpy Graphical Notation*



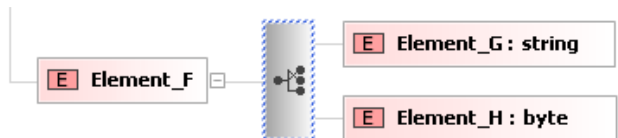
*Liquid XML Graphical Notation*

Choice permits one and only one element to be provided. In C# the class named Element\_F will have an 'Item' property which can be set to Element\_G or an Element\_H.

### All:



*Altova XMLSpy Graphical Notation*



*Liquid XML Graphical Notation*

All permits the elements to be provided in any order.

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