
Introduction to the Logical Structure of XML Documents

Web Engineering, SS 2007

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Example of an XML Document

```
<?xml version='1.0' encoding='UTF-8'?>
<staff organization="Bundesregierung">
  <person id="agu">
    <name>Alfred Gusenbauer</name>
    <party url="http://www.spoe.at">SPÖ</party>
  </person>
  <person id="wmo">
    <name>Wilhelm Molterer</name>
    <party url="http://www.oevp.at">ÖVP</party>
  </person>
</staff>
```

XML Document – Prolog/Heading

```
<?xml version='1.0' encoding='UTF-8'?>
```

```
<staff organization="Bundesregierung">
```

```
<person id="wmo">
```

```
<name>Alfred Gusenbauer</name>
```

```
<party url="http://www.spoe.at">ÖVP</party>
```

```
>
```

```
id="wmo">
```

```
<name>Wilhelm Molterer</name>
```

```
<party url="http://www.oevp.at">ÖVP</party>
```

```
</person>
```

```
</staff>
```

Version:
typically 1.0

Character
encoding: UTF-
8, UTF-16, US-
ASCII always
work!

XML Prolog

XML Document - Root Element

```
<?xml version='1.0' encoding='UTF-8'?>
```

```
<staff organization="Bundesregierung">
```

```
  <person id="agu">
```

```
    <name>Alfred Gusenbauer</name>
```

```
    <party url="http://www.spoe.at">SPÖ</party>
```

```
  </person>
```

```
  <person id="wmo">
```

```
    <name>Wilhelm Molterer</name>
```

```
    <party url="http://www.spoe.at">SPÖ</party>
```

```
  </person>
```

```
</staff>
```

Root element contains most of the information in the doc, every doc *must have* a root element!

Elements and Tags

Element

Element Name

```
<?xml version="1.0" encoding="UTF-8" ?>  
<staff organization="Bundesregierung">  
  <person id="wmo">  
    <name>Alfred Gusenbauer</name>  
    <party url="http://www.spoe.at">SPÖ</party>  
  </person>
```

Start Tag of the element

```
<person id="wmo">
```

```
  <name>Wilhelm Molterer</name>
```

```
  <party url="http://www.oevp.at">ÖVP</party>
```

```
</person>
```

End Tag of the element

```
</staff>
```

Attributes

Attribute: placed in the element's start tag

```
<?xml version="1.0" encoding="UTF-8"?>  
<staff organization="Bundesregierung">  
  <person name="Wolfgang Wagmann">  
    <name>Alexander Wedemeyer</name>  
    <party url="http://www.spo.gv.at">SPÖ</party>  
  </person>  
  <person id="wmo">  
    <name>Wolfgang Molterer</name>  
    <party url="http://www.oevp.at">ÖVP</party>  
  </person>  
</staff>
```

Attribute Value: in single or double *quotes!*

Attribute Name: *unique*
within an element!

Element Content: Text Nodes

Element

```
<staff organization="Bundesregierung" version="1.0" encoding="UTF-8"?>
  <person id="agu">
    <name>Alfred Gusenbauer</name>
    <party url="http://www.spoe.at">SPÖ</party>
  </person>
  <person id="wmo">
    <name>Wilhelm Molterer</name>
    <party url="http://www.oevp.at">ÖVP</party>
  </person>
</staff>
```

Element Content: Text Node

Element Content: Child Elements

(Parent) Element

```
<?xml version='1.0' encoding='UTF-8'?>  
<staff organization="Bundesregierung">  
  <person id="agu">  
    <name>Alfred Gusenbauer</name>  
    <party url="http://www.spoe.at">SPÖ</party>  
  </person>  
  <person id="wmo">  
    <name>Wilhelm Molterer</name>  
    <party url="http://www.oevp.at">ÖVP</party>  
  </person>  
</staff>
```

Element Content: Child Elements

XML Document with DTD

```
<?xml version='1.0' encoding='UTF-8'?>  
<!DOCTYPE staff SYSTEM "staff.dtd">  
<staff organization="Bundesregierung">  
  <person id="a">  
    <name>Alfred</name>  
    <party url="http://www.oevp.at/spoe">  
  </person>  
  <person id="wmo">  
    <name>Wilhelm Molterer</name>  
    <party url="http://www.oevp.at/spoe">  
  </person>  
</staff>
```

**Root element
name**

**System identifier
(URI) of the
entity/file with
Document Type
Definition**

**Document Type
Declaration**

XML Document with Comment

```
<?xml version='1.0' encoding='UTF-8'?>  
<!-- Comment content -->  
<!DOCTYPE staff SYSTEM "staff.dtd">  
<staff organization="Bundesregierung">  
  <person id="wmo">  
    <name>Alfred Mollerer</name>  
    <party url="http://www.oepo.at">SPÖ</party>  
  </person>  
  <person id="wmo">  
    <name>Wilhelm Molterer</name>  
    <party url="http://www.oevp.at">ÖVP</party>
```

**Comment
content**

Comment (-node):
usually not interpreted
by the application

Processing Instructions

```
<?xml version='1.0' encoding='UTF-8'?>
```

```
<?xml-stylesheet href="style.css" type="text/css"?>
```

```
<!DOCTYPE staff SYSTEM "staff.dtd">
```

```
<staff organization="Bundesregierung">
```

```
<person id="wmo">
```

```
<name>Wilhelm Molterer</name>
```

```
<party url="http://www.spoe.at">SPÖ</party>
```

```
</person>
```

```
<person id="wmo">
```

```
<name>Wilhelm Molterer</name>
```

```
<party url="http://www.oevp.at">ÖVP</party>
```

PI Target

PI Data (no attributes!)

Processing Instruction:
interpretation depends on
application