

# Ch. 1: Writing XML

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Seoul National University, Internet Database Laboratory

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# An XML Sample [1/2]

- An XML document describing one of *the Seven Wonders of the World: the Colossus of Rhodes*

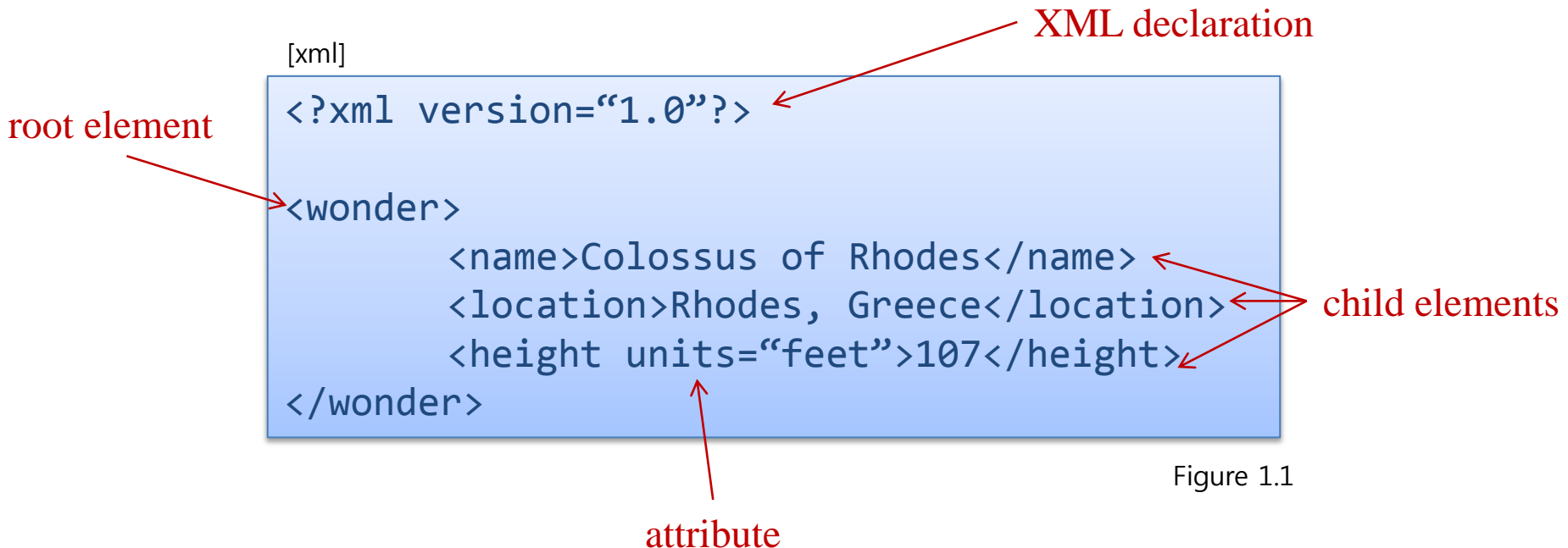


Figure 1.1

# An XML Sample [2/2]

- Multiple child elements can be used

[xml]

XML declaration

root element

```
<?xml version="1.0"?>
<ancient_wonders>
  <wonder>
    <name>Colossus of Rhodes</name>
    <location>Rhodes, Greece</location>
    <height units="feet">107</height>
  </wonder>
  <wonder>
    <name>Great Pyramid of Giza</name>
    <location>Giza, Egypt</location>
    <height units="feet">455</height>
  </wonder>
</ancient_wonders>
```

child elements

attribute

Figure 1.2

# Rules for Writing XML [1/2]

## 1. A root element is required

[xml]

```
<?xml version="1.0"?>
<wonder>
    <name>Colossus of Rhodes</name>
</wonder>
```

Figure 1.3

## 2. Closing tags are required

[xml]

```
<?xml version="1.0"?>
<wonder>
    <name>Colossus of Rhodes</name>
    <main_image file="colossus.jpg"/>
</wonder>
```

Figure 1.4

# Rules for Writing XML [2/2]

## 3. Elements must be properly nested

[xml]

```
<wonder>  
    <name>Colossus of Rhodes</wonder>  
</name>
```



Figure 1.4.1

## 4. Case matters

[xml]

```
<name>Colossus of Rhodes</name>  
<Name>Colossus of Rhodes</Name>
```

```
<name>Colossus of Rhodes</Name>
```



Figure 1.5

## 5. Values for attributes must be enclosed in quotation marks

[xml]

```
<main_image file="colossus.jpg" />
```

Figure 1.6

# Elements, Attributes, and Values [1/2]

- XML element (XML tag와 content가 합쳐진 덩어리)

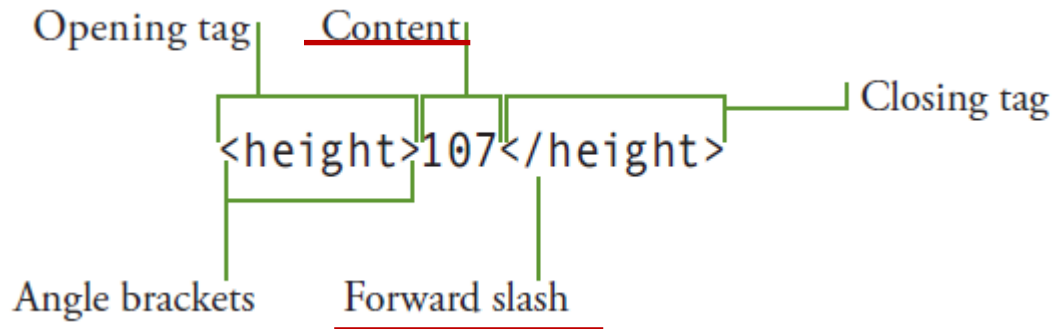


Figure 1.7

- Attributes and values

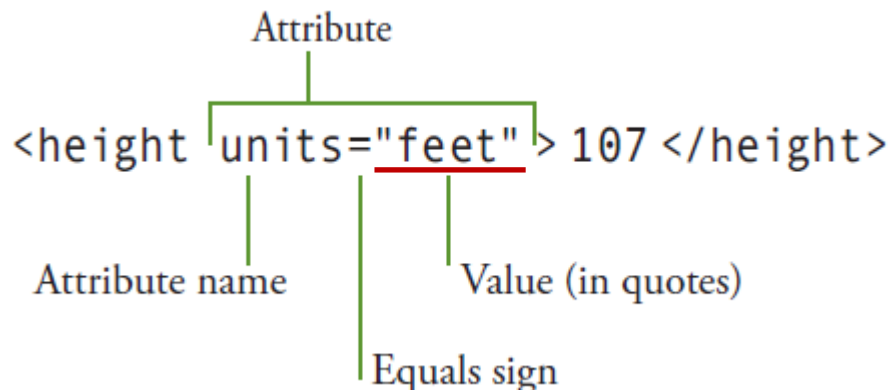


Figure 1.8

# Elements, Attributes, and Values [2/2]

- 'wonder' tag element

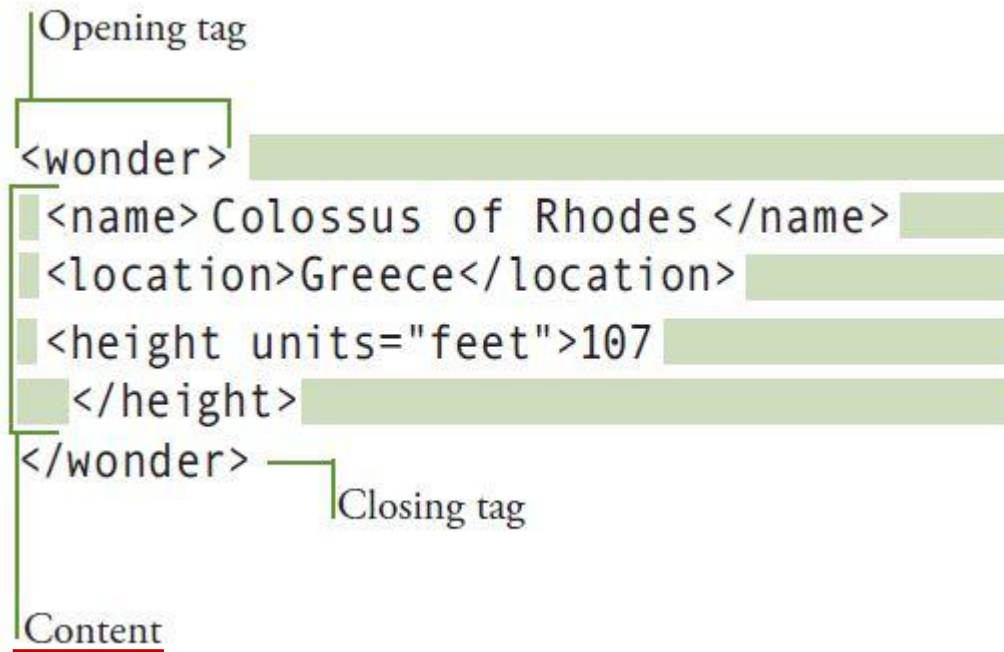


Figure 1.9



# Writing XML [1/6]

## 1. To declare the version of XML

[xml]

```
<?xml version="1.0"?>
```

Figure 1.10

## 2. Every XML document must have one, and only one root element

[xml]

```
<?xml version="1.0"?>  
  
<ancient_wonders>  
  
</ancient_wonders>
```

Figure 1.11

# Writing XML [2/6]

## 3. Opening tag and Closing tag

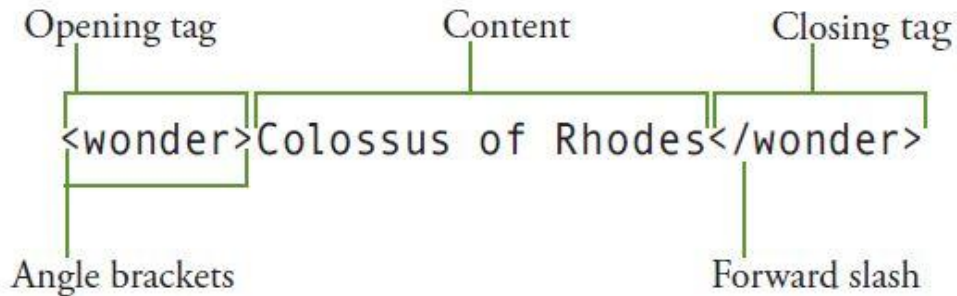


Figure 1.12

## 4. Writing child elements

[xml]

```
<?xml version="1.0"?>  
  
<ancient_wonders>  
    <wonder>Colossus of Rhodes</wonder>  
</ancient_wonders>
```

Figure 1.13

# Writing XML [3/6]

## 5. Nesting Elements

Correct (no overlapping lines)

```
<wonder><name>Colossus</name></wonder>  
  
<wonder><name>Colossus</wonder></name>
```

Incorrect (the sets of tags cross over each other)

[xml]

Figure 1.14

```
<?xml version="1.0"?>  
  
<ancient_wonders>  
  <wonder>  
    <name>Colossus of Rhodes</name>  
    <location>Rhodes, Greece</location>  
    <height units="feet">107</height>  
  </wonder>  
</ancient_wonders>
```

# Writing XML [4/6]

## 6. Adding attributes

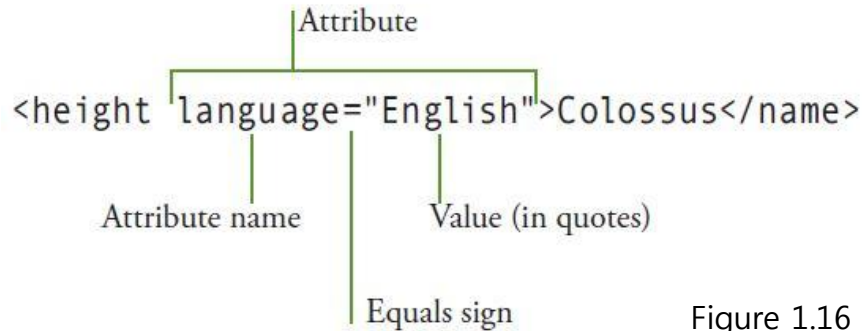


Figure 1.16

- Attribute values **must** be in quotes
- Double quotes and single quotes are properly mixed for attribute values  
ex) comment = 'She said, "The Colossus has fallen!"'

```
<?xml version="1.0"?>

<ancient_wonders>
  <wonder>
    <name language="English">Colossus of Rhodes</name>
    <name language="Greek">Κολοσσός της Ρόδου</name>
    <location>Rhodes, Greece</location>
    <height units="feet">107</height>
  </wonder>
</ancient_wonders>
```

# Writing XML [5/6]

## 7. Using empty elements (elements with no contents)

Less than sign

```
<main_image file="colossus.jpg"/>
```

Forward slash  
and greater than sign

Figure 1.18

[xml]

```
<?xml version="1.0"?>

<ancient_wonders>
  <wonder>
    <name language="English">Colossus of Rhodes</name>
    <name language="Greek">Κολοσσός της Ρόδου</name>
    <location>Rhodes, Greece</location>
    <height units="feet">107</height>
    <main_image file="colossus.jpg" w="528 h="349"/>
    <source sectionid="101" newspaperid="21"></source>
  </wonder>
</ancient_wonders>
```

Figure 1.19

# Writing XML [6/6]

## 8. Writing comments

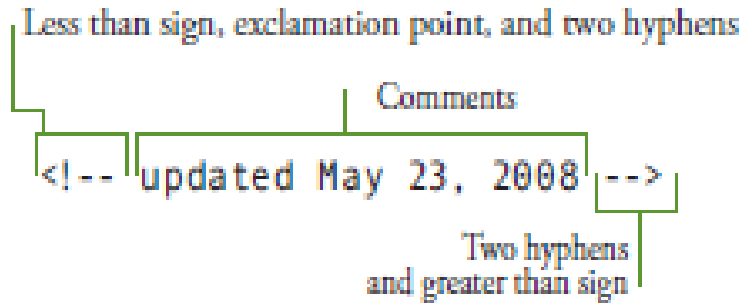


Figure 1.20

[xml]

```
<?xml version="1.0"?>

<ancient_wonders>
  <wonder>
    <name language="English">Colossus of Rhodes</name>
    <name language="Greek">Κολοσσός της Ρόδου</name>
    <location>Rhodes, Greece</location>
    <height units="feet">107</height>
    <main_image file="colossus.jpg" w="528 h="349"/>

    <!-- the research on this wonder of the world came in part from the sectionid of
    the newspaper (identified by newspaperid) in the source tag below -->

    <source sectionid="101" newspaperid="21"></source>
  </wonder>
</ancient_wonders>
```

Figure 1.21

# Predefined Entities – Five Special Symbols

- Type **&amp;** to create an ampersand sign (&)
- Type **&lt;** to create a less than sign (<)
- Type **&gt;** to create a less than sign (>)
- Type **&quot;** to create a less than sign (")
- Type **&apos;** to create a less than sign (')

`<height units="feet">&lt; 107</height>`

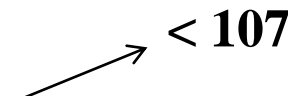


Figure 1.21.1

## Unicode Characters

Unicode Character	NCR (Decimal)	NCR (Hexadecimal)	Entity Reference
à	&#224;	&#x00E0;	&agrave;
á	&#225;	&#x00E1;	&acute;
â	&#226;	&#x00E2;	&circ;
ã	&#227;	&#x00E3;	&tilde;
ä	&#228;	&#x00E4;	&auml;
å	&#229;	&#x00E5;	&aring;
æ	&#230;	&#x00E6;	&aelig;
ç	&#231;	&#x00E7;	&cedil;
è	&#232;	&#x00E8;	&egrave;

Unicode Character	NCR (Decimal)	NCR (Hexadecimal)	Entity Reference
α	&#945;	&#x03B1;	&alpha;
β	&#946;	&#x03B2;	&beta;
γ	&#947;	&#x03B3;	&gamma;
δ	&#948;	&#x03B4;	&delta;
ε	&#949;	&#x03B5;	&epsilon;
ζ	&#950;	&#x03B6;	&zeta;
η	&#951;	&#x03B7;	&eta;
θ	&#952;	&#x03B8;	&theta;
ι	&#953;	&#x03B9;	&iota;

# Displaying a xml file after being parsed by the XML Processor

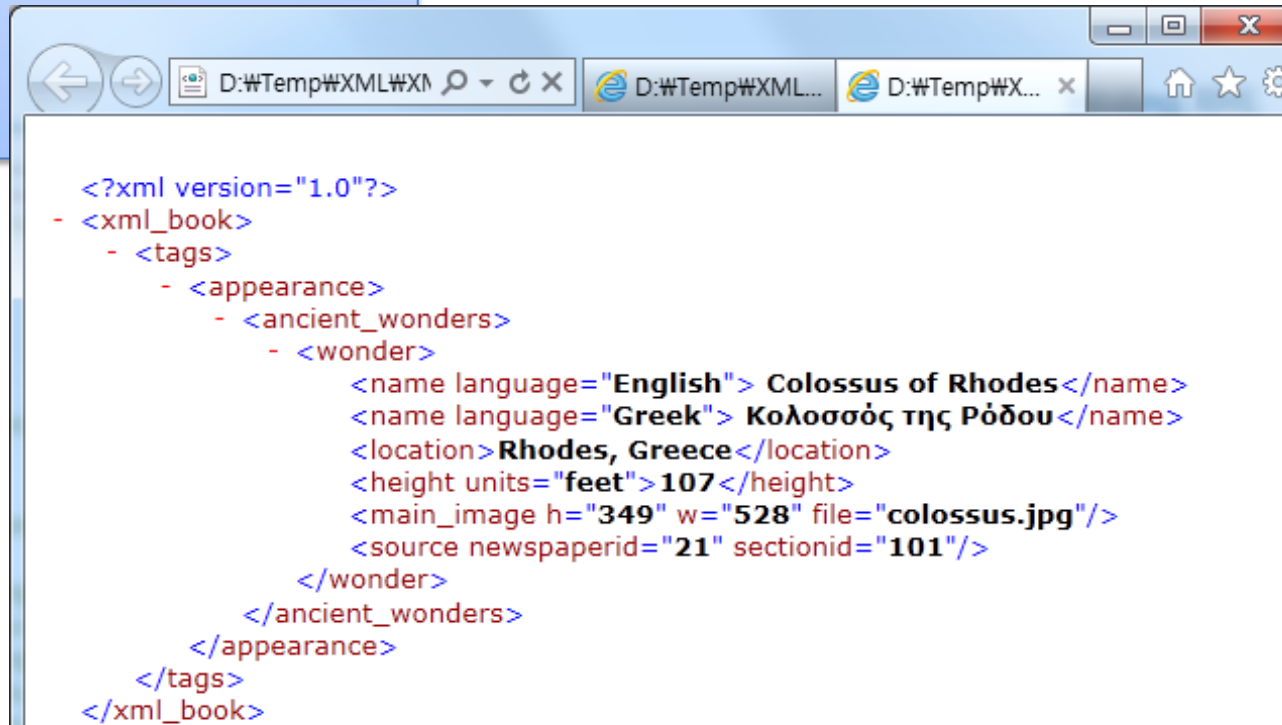
```
<?xml version="1.0"?>
<xml_book>
  <tags>
    <appearance>
      <ancient_wonders>
        <wonder>
          <name language="English"> Colossus of Rhodes </name>
          <name language="Greek"> Κολοσσός της Ρόδου </name>
          <location> Rhodes, Greece </location>
          <height units="feet"> &lt; 107 </height>
          <main_image file="colossus.jpg" w="528 h="349"/>
          <source sectionid="101" newspaperid="21"></source>
        </wonder>
      </ancient_wonders>
    </appearance>
  </tags>
</xml_book>
```

Figure 1.22.1

my.xml

Figure 1.22

Browser displays  
the XML tree



```
<?xml version="1.0"?>
- <xml_book>
  - <tags>
    - <appearance>
      - <ancient_wonders>
        - <wonder>
          <name language="English"> Colossus of Rhodes</name>
          <name language="Greek"> Κολοσσός της Ρόδου</name>
          <location> Rhodes, Greece</location>
          <height units="feet"> 107</height>
          <main_image h="349" w="528" file="colossus.jpg"/>
          <source newspaperid="21" sectionid="101"/>
        </wonder>
      </ancient_wonders>
    </appearance>
  </tags>
</xml_book>
```



# Displaying Elements as Text

```
<?xml version="1.0"?>
<xml_book>
  <tags>
    <appearance>
<![CDATA[
<ancient_wonders>
  <wonder>
    <name language="English">Colossus of Rhodes</name>
    <name language="Greek">Κολοσσός της Ρόδου</name>
    <location>Rhodes, Greece</location>
    <height units="feet">107</height>
    <main_image file="colossus.jpg" w="528 h="349"/>
    <source sectionid="101" newspaperid="21"></source>
  </wonder>
</ancient_wonders>
]]>
    </appearance>
  </tags>
</xml_book>
```

Figure 1.23

<![CDATA[.....]]>

When you want to XML elements  
and attributes as they are

Figure 1.24

