

XML Attributes

Lecture 33

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- 1 XML Attributes
- 2 The `getAttribute()` Function
- 3 Attributes as References
- 4 Assignment

Outline

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XML Attributes

XML Attributes

```
<tag_name attr-1="value-1" attr-2="value-2" ...>  
  ⋮  
</tag_name>
```

- An XML element may be given any number of **attributes**.

XML Attributes

```
<book lang="en" cover="hard">  
  <title>Treasure Island</title>  
</book>
```

- The attributes are intended to provide information about the element, but not data itself.
- The distinction is not always clear.

Elements vs. Attributes

- When should we use elements and when should we use attributes?
- The W3Schools website makes the remark “There are no rules about when to use attributes or when to use elements. Attributes are handy in HTML. In XML my advice is to avoid them. Use elements instead.”
- They give three reasons:
 - Attributes cannot contain multiple values (elements can)
 - Attributes cannot contain tree structures (elements can)
 - Attributes are not easily expandable (for future changes)
- I agree, except in the following examples.

XML Attributes

XML Attributes

```
var book_list = xml_doc.getElementsByTagName("book");  
var attr_list = book_list[0].attributes;  
var attr = attr_list[0];  
var attr_name = attr.nodeName;  
var attr_value = attr.nodeValue;
```

- In Javascript, each element has the `attributes` property, which is an indexed list of the element's attributes.

Attributes as References

- See the example `library-attr.xml` and `library-attr.html`.
- The XML file uses reference IDs to associate authors with books.
- Thus, each author does not need to be listed more than once.
- (This example assumes that each book has only one author.)

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The `getAttribute()` Function

The `getAttribute()` Function

```
var book_list = xml_doc.getElementsByTagName("book");  
var attr = book_list[0].getAttribute("lang");  
var attr_name = attr.nodeName;  
var attr_value = attr.nodeValue;
```

- We can use the `getAttribute()` function to select a specific attribute.

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Attributes as References

```
<book authID="123">...</book>  
<author id="123">  
  <fname>Mark</fname>  
  <lname>Twain</lname>  
</author>
```

- Attributes are often used to allow one element to refer to another element.
- This allows us to impose a structure on the XML file beyond the basic tree structure.

Attributes as References

- See the example `library-attr2.xml` and `library-attr2.html`.
- The XML file uses reference IDs to associate authors with books.
- Thus, each author does not need to be listed more than once.
- (This example assumes that each book has only one author.)

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Assignment

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- Visit the W3Schools website
 - http://www.w3schools.com/xml/xml_attributes.asp
- Visit the section labeled “XML Attributes.”