# XLINK

UNIT-I

# XLink

- XLink is used to create hyperlinks within XML documents

- Any element in an XML document can behave as a link

- With XLink, the links can be defined outside the linked files

- XLink is a W3C Standard

# HTML Hyperlinks Vs XLink

- HTML Hyperlinks
  - require the use of the anchor element (<a>)
  - Need someone to click them to navigate to the specified location
- XLink
  - Allows a link to another document to be specified through any element in an XML document
  - More complex links are supported

# XLink Attributes

- xlink:type - specifies xlink types
- xlink:href - specifies info' need to locate desired resource
- xlink:role / xlink:arcrole - describes function of link between the current resource and another
- xlink:title - describes the meaning of the link between the resources
- xlink:show - Specifies where to open the link
- xlink:actuate - specifies when to load the linked resource
- xlink:label - specifies name for a target resource
- xlink:from - Identifies a starting resource
- xlink: to - Identifies an ending resource

# Attribute - xlink:type (simple)

- **simple** - A simple link defines a one-way connection between two resources (similar to HTML links)

- Example

```
<novel>
 <title>The Wonderful Wizard of Oz</title>
<author>L. Frank Baum</author>
<year>1900</year> </novel>

<novel  xmlns:xlink= "http://www.w3.org/1999/xlink"
   xlink:type = "simple"
xlink:href = "ftp://archive.org/pub/etext/etext93/wizoz10.txt">
 <title>The Wonderful Wizard of Oz</title>
 <author>L. Frank Baum</author>
<year>1900</year>
</novel>
```

# Attribute - xlink:type (Extended)

- Extended – describes a collection of resources and a collection of paths between those resources
  - Each path connects exactly two resources
  - Any individual resource may be connected:
    to one of the other resources / two of the other resources / zero of the other resources / all of the other resources / any subset of the other resources in the collection
  - It may even be connected back to itself
  - An extended link is a directed labeled graph in which the paths are arcs, the documents are vertices, and the URIs are labels

# Attribute xlink:type (Locator)

- Locator - creates a link that points to another resource
  - Each locator element has an **xlink:type** = locator and an **xlink:href** = URI for the resource it locates
  - Locators represent remote resources that are not part of the document (generally URI) and used with extended link

```
<novel xlink:type = "extended">
<title>The Wonderful Wizard of Oz</title>
<author>L. Frank Baum</author>
<year>1900</year>
<edition xlink:type="locator" xlink:href="urn:isbn:0688069444"
    xlink:label="ISBN0688069444" />
<edition xlink:type="locator" xlink:href="urn:isbn:0192839306"
    xlink:label="ISBN0192839306" />
<edition xlink:type="locator" xlink:href="urn:isbn:0700609857"
    xlink:label="ISBN0700609857" />
</novel>
```

# xlink:type attribute Contd...

- Arc - Paths between resources are called *arcs*
  - creates links with multiple resources and various traversal paths
  - Each arc element should have an **xlink:from** attribute and an **xlink:to** attribute (a name matching the value of the xlink:label attribute)
  - xlink:from – label identifying source link
  - xlink:to - label identifying source link

- Example continued in next slide

# xlink:type arc Example

```
<series xlink:type="extended" xmlns:xlink="http://www.w3.org/1999/xlink">
<author>L. Frank Baum</author>
<novel xlink:type="locator" xlink:label="oz1"
    xlink:href="ftp://archive.org/pub/etext/etext93/wizoz10.txt">
<title>The Wonderful Wizard of Oz</title>
<year>1900</year>
</novel>
 <novel xlink:type="locator" xlink:label="oz2"
    xlink:href="ftp://archive.org/pub/etext/etext93/ozland10.txt">
<title>The Marvelous Land of Oz</title>
<year>1904</year>
</novel>

<next xlink:type="arc" xlink:from="oz1" xlink:to="oz2" />
<previous xlink:type="arc" xlink:from="oz2" xlink:to="oz1" />
</series>
```

# Local Resources

- Resource - Extended links can also contain local resources in (i.e. data is contained inside the extended link element)

- Each such resource is represented by a *resource element*

*Example:*

```
<author xlink:type="resource" xlink:label="baum">L. Frank Baum</author>
```

- To establish links from this local resource to all the books, add these three arc elements:

```
<book xlink:type="arc" xlink:from="baum" xlink:to="oz1" />
<book xlink:type="arc" xlink:from="baum" xlink:to="oz2" />
<book xlink:type="arc" xlink:from="baum" xlink:to="oz3" />
```

- To move in the other direction, you'd simply reverse the values of the xlink:from and xlink:to attributes.

# Attribute - xlink:show

- xlink:show attribute
  - optional, has five possible values
  - suggest where to open the link (display)
  - new  - Open and show target resource in a new window
  - replace  - Show target resource  replacing the current document
  - embed  -  Embed target resource resource in the current document at the location of the link element
  - Other - behavior is may be specified by other  nonstandard markup that a particular application understands.
  - none - Specify no behavior

  Example:

  ```
  <book title="XQuery Kick Start">
      <description
      xlink:type="simple"
      xlink:href="/images/XQuery.gif"
      xlink:show="new">
      XQuery Kick Start delivers a concise introduction
      to the XQuery standard…….
      </description>
  </book>
  ```

# Attribute – xlink:actuate

- **xlink:actuate**
- optional xlink:actuate attribute, has four possible values
- suggest what action should the link follow
- onLoad - he resource should be loaded and shown when the document loads
- onRequest - the resource is not read or shown before the link is clicked
- other - is determined by other markup in the document not specified by XLink.
- none - No details are available
- Example:
- \<image xlink:type="simple" **xlink:actuate="onLoad" xlink:show="embed"** xlink:href="http://www.turing.org.uk/turing/pi1/bus.jpg" width="152" height="345" />