

XPointer

Unit-II

What is Xpointer?

- XPointer is short for XML Pointer Language
- XPointer allows the links to point to specific parts of an XML document
- XPointer uses XPath expressions to navigate in the XML document
- XPointer is a W3C Recommendation

Contd...

- An XPointer uses location steps the same as XPath but with two major differences
- Xpointer can target a point within the XML document or a range within the target XML document
- Node tests for an XPointer are same as for an XPath node test except 2 additional test:
 - point()
 - range()

Contd...

- To differentiate from Xpath node set, Xpointer result is called as location set
- Four of the functions that return location sets, `id()`, `root()`, `here()`, and `origin()`
- `id()` - Selects all nodes with the specified ID
- `root()` - Selects the root element
- `here()` - Selects the current element location in a location set
- `origin()` - Selects the current element location for a node using an out-of-line link

Types of points

- Two different types of points can be represented using XPointer points:
- Node points
- Character points
- A node point - considered to be the gap between the child nodes of a container node Ex. '0' refers immediately before a child node
- Character points - When the origin node is a text node, the index position indicates the number of characters.

Example

```
<People>
<Person>
<Name>Dillon Larsen</Name>
<Address>
<Street>123 Jones Rd.</Street>
<City>Houston</City>
<State>TX</State>
<Zip>77380</Zip>
</Address>
</Person>
```

```
<Person>
<Name>Madi Larsen</Name>
<Address>
<Street>456 Hickory Ln.</Street>
<City>Houston</City>
<State>TX</State>
<Zip>77069</Zip>
</Address>
</Person>
```

```
.....
</People>
```

- `/People/Person[1]/Name/text()/`
- Just after the *I* and just before the *startpoint()[position()=4]*
- *o in Dillon*
- `/People/Person[1]/Name/text()/` Just before the *D in Dillon* `start-point()[position()=0]`
- `/People/Person[2]/Address/` Just before the `<State>` element in `start-point()[position()=2]` the `<Person>` element for Madi Larsen
- `/People/Person[2]/Address/` Just before the `<Street>` element in `start-point()[position()=0]` the `<Person>` element for Madi Larsen

Ranges

- An XPointer range consist of a start point and an endpoint.
- A range can extend over multiple branches of an XML document
- The only criterion is that the start point and endpoint must be valid
- Example:
- `/People/Person[1]/Name/text() start-point()[position()=0]`
to `/People/Person[1]/Name/text() start-point()`
`[position()=9]`

Range Functions

- `end-point()` - Selects a location set consisting of the endpoints of the desired location steps
- `range-inside()` - Selects the range(s) covering each location in the location-set argument
- `range-to()` - Selects a range that completely covers the locations within the location-set argument
- `start-point()` Selects a location set consisting of the start points of the desired location steps

Xpointer with Xlink

- If the hyperlink points to an XML document, XPointer can be added as a part after the URL in the xlink:href attribute, to navigate to a specific place in the document.

Ex. XPointer to point to the fifth item in a list with a unique id of "rock":

href=[http://www.example.com/cdlist.xml#id\('rock'\).child\(5,item\)](http://www.example.com/cdlist.xml#id('rock').child(5,item))

Xpointer Example

```
<?xml version="1.0" encoding="ISO-8859-1"?>
  <dogbreeds>
    <dog breed="Rottweiler" id="Rottweiler">
      <picture url="http://dog.com/rottweiler.gif" />
      <temperament>Confident, bold, alert and imposing, the Rottweiler
        is a popular choice for its ability to protect....</temperament>
    </dog>
  </dogbreeds>
```

- ```
<?xml version="1.0" encoding="ISO-8859-1"?>
<mydogs xmlns:xlink="http://www.w3.org/1999/xlink">
 <mydog xlink:type="simple"
 xlink:href="http://dog.com/dogbreeds.xml#Rottweiler">
 <description xlink:type="simple"
 xlink:href="http://myweb.com/mydogs/anton.gif">
 Anton is my favorite dog. He has won a lot of.....
 </description>
 </mydog>
```
- So xlink:href attribute would look like this:  
xlink:href=[http://dog.com/dogbreeds.xml#xpointer\(id\('Rottweiler'\)\)](http://dog.com/dogbreeds.xml#xpointer(id('Rottweiler')))
- XPointer allows a shorthand form when linking to an element with an id. You can use the value of the id directly, like this:  
xlink:href="http://dog.com/dogbreeds.xml#Rottweiler"