

# Computer Science E-259

XML with Java

## Lecture 5: XPath 1.0 (and 2.0) and XSLT 1.0 (and 2.0), Continued

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# Computer Science E-259

## Last Time

- CSS Level 2
- XPath 1.0 (and 2.0)
- XSLT 1.0 (and 2.0)
- TrAX
- Project 2

# Last Time

## XPath 1.0

- Location Paths
- Data Types
- Functions

# Last Time

## XSLT 1.0

- Nodes
- Elements
- Templates

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## This Time

- XSLT, Continued

# XSLT 1.0, Continued

## Data Types

- boolean
- number
- string
- node-set
- external object
- result tree fragment

# XSLT 1.0, Continued

## Conditions

```
<xsl:if test="...">  
  ...  
</xsl:if>
```

# XSLT 1.0, Continued

## Conditions

```
<xsl:choose>
  <xsl:when test="...">
    ...
  </xsl:when>
  <xsl:when test="...">
    ...
  </xsl:when>
  ...
  <xsl:otherwise>
    ...
  </xsl:otherwise>
</xsl:choose>
```



# XSLT 1.0, Continued

## Iteration

```
<xsl:for-each select="...">  
  ...  
</xsl:for-each>
```

# XSLT 1.0, Continued

## Iteration, Sorted

```
<xsl:for-each select="...">
  <xsl:sort select="..." order="..." />
  ...
</xsl:for-each>
```

# XSLT 1.0, Continued

## Patterns

```
<xsl:apply-templates select="..."/>
```

```
<xsl:template match="...">
```

```
...
```

```
</xsl:template>
```

# XSLT 1.0, Continued

## Modes

```
<xsl:apply-templates mode="..." select="..."/>
```

```
<xsl:template match="..." mode="...">
```

```
...
```

```
</xsl:template>
```

```
<xsl:template name="...">
```

```
...
```

```
</xsl:template>
```

# XSLT 1.0, Continued

## Built-In Templates, Revisited

```
<xsl:template match="* | /" mode="...">  
  <xsl:apply-templates mode="..." />  
</xsl:template>
```

```
<xsl:template match="text() | @*" mode="...">  
  <xsl:value-of select="." />  
</xsl:template>
```

```
<xsl:template match="comment() | processing-instruction()" mode="..." />
```

# XSLT 1.0, Continued

## Priorities

```
<xsl:apply-templates select="..." />
```

```
<xsl:template match="..." priority="...">
```

```
...
```

```
</xsl:template>
```

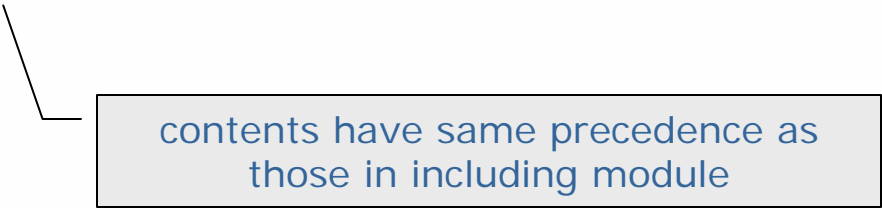
### Some Defaults

<code>node(), text()</code>	<code>-0.5</code>
<code>ns:foo, ns:bar</code>	<code>-0.25</code>
<code>foo, bar</code>	<code>0.0</code>
<code>foo[1], foo/bar</code>	<code>0.5</code>

# XSLT 1.0, Continued

## Includes

```
<xsl:include href="..." />
```

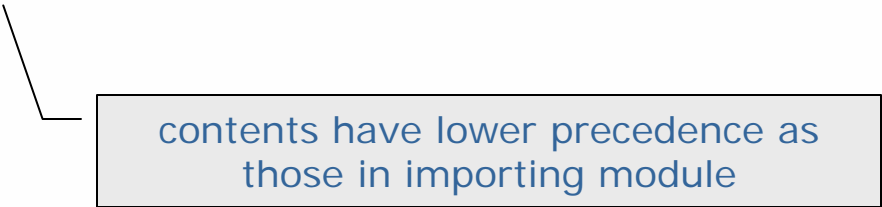


contents have same precedence as those in including module

# XSLT 1.0, Continued

## Imports

```
<xsl:import href="..."/>
```



contents have lower precedence as those in importing module



# XSLT 1.0, Continued

## Variables

```
<xsl:variable name="..." select="..."/>
```

```
<xsl:variable name="...">...</xsl:variable>
```

values cannot be reassigned

# XSLT 1.0, Continued

## Result Tree Fragments

```
<xsl:variable name="oogle">  
  <foo><bar>baz</bar><qux>quux</qux></foo>  
</xsl:variable>
```

```
<xsl:param name="oogle">  
  <foo><bar>baz</bar><qux>quux</qux></foo>  
</xsl:param>
```

# XSLT 1.0, Continued

## Result Tree Fragments

```
<xsl:copy-of select="$google"/>
```

```
⇒ <foo><bar>baz</bar><qux>quux</qux></foo>
```

```
<xsl:value-of select="$google"/>
```

```
⇒ bazquux
```

# XSLT 1.0, Continued

## Copying Nodes

```
<xsl:copy>...</xsl:copy>
```

```
<xsl:copy-of>...</xsl:copy-of>
```

```
<xsl:template match="@* | node() ">  
  <xsl:copy>  
    <xsl:apply-templates select="@* | node() "/>  
  </xsl:copy>  
</xsl:template>
```

# XSLT 1.0, Continued

## Outputting Nodes

```
<xsl:element name="...">...</xsl:element>
```

```
<xsl:attribute name="...">...</xsl:attribute>
```

```
<xsl:comment>...</xsl:comment>
```

```
<xsl:processing-instruction  
  name="...">...</xsl:processing-instruction>
```

```
<xsl:text>...</xsl:text>
```

# XSLT 1.0, Continued

## Attribute Value Templates

```
<xsl:variable name="image-dir" select="'/images'"/>
<xsl:template match="photograph">
  
</xsl:template>
```

+

```
<photograph>
  <href>headquarters.jpg</href>
  <size width="300"/>
</photograph>
```

=

```

```

# XSLT 1.0, Continued

## Multiple Source Documents

```
<xsl:variable name="..." select="document('...')"/>
```

# XSLT 1.0, Continued

## Recursion

```
<xsl:apply-templates mode="..." select="..."/>
```

```
<xsl:call-template name="..." mode="..."/>
```



# XSLT 1.0, Continued

## Extension Elements and Functions

<http://xml.apache.org/xalan-j/extensions.html>

<http://xml.apache.org/xalan-j/extensionslib.html>

# Next Time

## Lecture 6

- Namespaces in XML 1.1 (Second Edition)
- SVG 1.1
- XSL (XSL-FO) 1.1

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