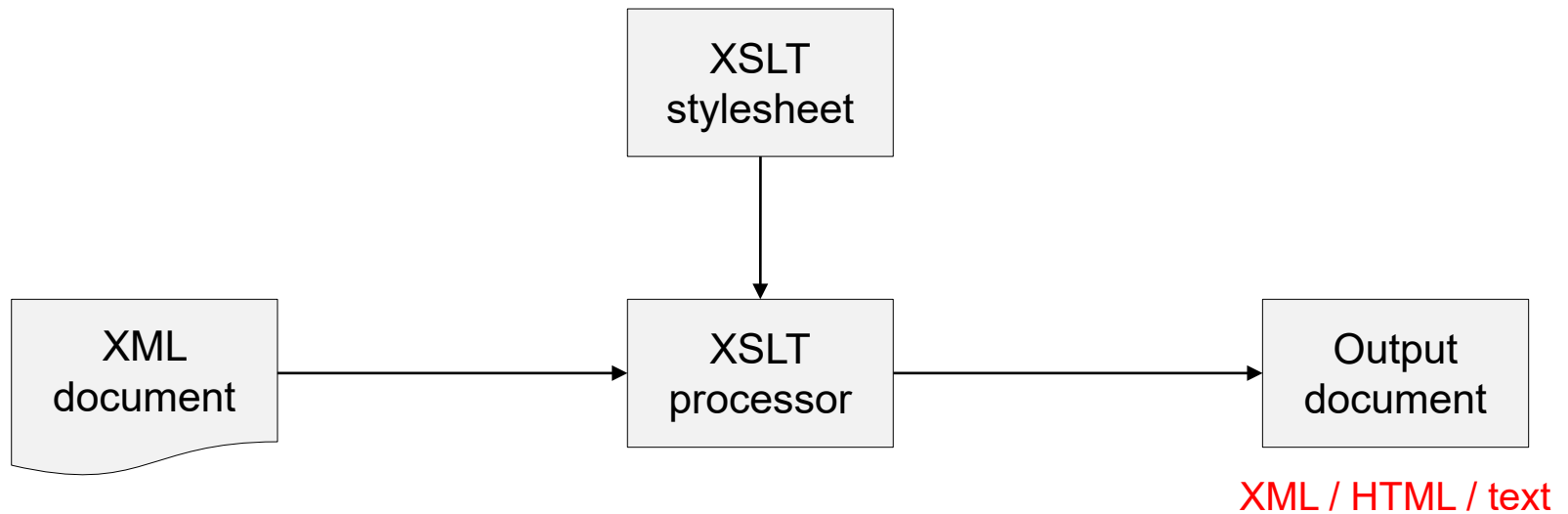


Semi-structured Data

7 – XSLT Examples

How XSLT Works?



- Define a transformation with an XSLT document (which is an XML document)
- Apply this transformation on an input document using an XSLT processor

How to execute XSL Transformations

- Use the Saxon library
 - Download: <http://www.dbai.tuwien.ac.at/education/ssd/SS14/saxon/saxon9he.jar>
<http://saxon.sourceforge.net/>
 - Add *saxon9he.jar* to the classpath
 - **java net.sf.saxon.Transform -s:example.xml -xsl:example.xsl -o:output.xml**
- Use an online tool
 - e.g. <http://www.xpathtester.com/xslt>
- Use a Webbrowser
 - Details next slide
 - Often only XSLT 1.0 / XPATH 1.0 support
- For the exercise use the provided Ant script

Link xml file to xsl file

```
<?xml version="1.0"?>
<?xml-stylesheet type="text/xsl" href="simple.xsl"?>
<courses>
  <SSD day="Thursday">
    Starts at
    09:15
  </SSD>
  <Databases day="Tuesday">
    Starts at
    09:45
  </Databases>
</courses>
```

Some small examples

A simple example

```
<courses>
  <SSD day="Thursday">
    Starts at
    09:15
  </SSD>
  <Databases day="Tuesday">
    Starts at
    09:45
  </Databases>
</courses>
```

```
<?xml version="1.0" encoding="UTF-8"?>
```

Starts at

09:15

Starts at

09:45

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

```
<xsl:stylesheet version="2.0"
```

```
  xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
```

```
</xsl:stylesheet>
```

xsl:output

<courses>

<SSD day="Thursday">

Starts at

09:15

</SSD>

<Databases day="Tuesday">

Starts at

09:45

</Databases>

</courses>

Starts at

09:15

Starts at

09:45

<?xml version="1.0"?>

<xsl:stylesheet version="2.0"

xmlns:xsl="http://www.w3.org/1999/XSL/Transform">

<xsl:output method="html"/>

</xsl:stylesheet>

Priorities of Template rules

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

```
<xsl:stylesheet version="2.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
```

```
  <xsl:output method="text"/>
```

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

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

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

```
  <xsl:template match="author/name">
```

```
    \emph{<xsl:value-of select="."/>}
```

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

```
</xsl:stylesheet>
```

```
<books>
```

```
  <author>
```

```
    <name>Douglas Adams</name>
```

```
  </author>
```

```
  <book>
```

```
    <name>The Hitchhiker's
```

```
    Guide to the Galaxy</name>
```

```
  </book>
```

```
</books>
```


Priorities of Template rules

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

```
<xsl:stylesheet version="2.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
```

```
  <xsl:output method="text"/>
```

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

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

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

```
  <xsl:template match="author/name">
```

```
    \emph{<xsl:value-of select="."/>}
```

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

```
</xsl:stylesheet>
```

Output:

\emph{Douglas Adams}

The Hitchhiker's Guide to the Galaxy

A more complex example

DBLP Computer science bibliography

- Is a an online computer science bibliography listing all major journals and conferences in computer science
 - <http://dblp.org/>

maintained by SCHLOSS DAGSTUHL at Universität Trier

home | browse | search | about

dblp
computer science bibliography

search dblp

Wolfgang Dvorák

> Home > Persons

Person information

affiliation: University of Vienna, Austria

2010 – today

2017

[j13] Wolfgang Dvorák, Monika Henzinger, David P. Williamson:
Maximizing a Submodular Function with Viability Constraints. Algorithmica 77(1): 152-172 (2017)

2016

[j12] Ringo Baumann, Wolfgang Dvorák, Thomas Linsbichler, Christof Spanring, Hannes Strass, Stefan Woltran:
On rejected arguments and implicit conflicts: The hidden power of argumentation semantics. Artif. Intell. 241: 244-284 (2016)

[j11] Wolfgang Dvorák, Sarah Alice Gaggl:
Stage semantics and the SCC-recursive schema for argumentation semantics. J. Log. Comput. 26(4): 1149-1202 (2016)

[j10] Martin W. A. Caminada, Wolfgang Dvorák, Srdjan Vesic:
Preferred semantics as socratic discussion. J. Log. Comput. 26(4): 1257-1292 (2016)

[c25] Krishnendu Chatterjee, Wolfgang Dvorák, Monika Henzinger, Veronika Loitzenbauer:
Model and Objective Separation with Conditional Lower Bounds: Disjunction is Harder than Conjunction. LICS 2016: 197-206

[c24] Krishnendu Chatterjee, Wolfgang Dvorák, Monika Henzinger, Veronika Loitzenbauer:
Conditionally Optimal Algorithms for Generalized Büchi Games. MFCS 2016: 25:1-25:15

[j9] Krishnendu Chatterjee, Wolfgang Dvorák, Monika Henzinger, Veronika Loitzenbauer:
Model and Objective Separation with Conditional Lower Bounds: Disjunction is Harder than Conjunction. LICS 2016: 197-206

Refine list

showing all 48 records

refine by search term

refine by type

☒ Books and Theses (only)

☒ Journal Articles (only)

☒ Conference and Workshop Papers (only)

☒ Informal Publications (only)

select all | deselect all

refine by coauthor

Stefan Woltran (25)

Monika Henzinger (11)

Thomas Linsbichler (7)

Johannes Peter Wallner (7)

Sarah Alice Gaggl (6)

Paul E. Dunne (4)

Ringo Baumann (4)

Krishnendu Chatterjee (4)

Veronika Loitzenbauer (4)

Hannes Strass (3)

19 more options

refine by venue

CoRR (9)

Artif. Intell. (7)

COMMA (5)

KR (3)

IJCAI (2)

Our DBLP scenario

- DBLP provides its data (e.g. publication lists of authors) as xml data
- We aim to use these files to create publication lists for the websites of several authors.
- As first step we get a dataset from the dblp website:
 - <http://dblp.dagstuhl.de/pers/xx/d/Dvor=aacute=k:Wolfgang.xml>
- The dataset contains
 - Meta-information about the author
 - A list of publications
 - Some information about the coauthors (which we ignore)

Our DBLP scenario - Meta-information for the author

```
<dblpperson name="Wolfgang Dvorák" n="48">  
  <person key="homepages/90/7375" mdate="2016-03-03">  
    <author>Wolfgang Dvorák</author>  
    <note type="affiliation">University of Vienna, Austria</note>  
    <url>http://informatik.univie.ac.at/wolfgang.dvorak</url>  
  </person>  
[...]  
</dblpperson>
```

Sometimes inaccurate and/or outdated

Our DBLP scenario - A list of publications

```
<dblpperson name="Wolfgang Dvorák" n="48">
```

```
[...]
```

```
<r> A journal article
```

```
<article key="journals/algorithmica/DvorakHW17" mdate="2017-01-13">
```

```
<author>Wolfgang Dvorák</author>
```

```
<author>Monika Henzinger</author>
```

list of authors

```
<author>David P. Williamson</author>
```

```
<title>Maximizing a Submodular Function with Viability Constraints.</title>
```

```
<pages>152-172</pages><year>2017</year><volume>77</volume>
```

```
<journal>Algorithmica</journal><number>1</number>
```

```
<ee>http://dx.doi.org/10.1007/s00453-015-0066-y</ee>
```

```
<url>db/journals/algorithmica/algorithmica77.html#DvorakHW17</url>
```

```
</article>
```

```
</r>
```

```
[...]
```

```
</dblpperson>
```

Our DBLP scenario - A list of publications

<dblpperson name="Wolfgang Dvorák" n="48">

[...]

A paper in conference proceedings

<r>

<inproceedings key="conf/lics/ChatterjeeDHL16" mdate="2016-10-27">

<author>Krishnendu Chatterjee</author>

<author>Wolfgang Dvorák</author>

<author>Monika Henzinger</author>

<author>Veronika Loitzenbauer</author>

list of authors

<title>Model and Objective Separation with Conditional Lower Bounds: Disjunction is Harder than Conjunction.</title>

<pages>197-206</pages><year>2016</year><booktitle>LICS</booktitle>

<ee><http://doi.acm.org/10.1145/2933575.2935304></ee><crossref>conf/lics/2016</crossref>

<url>db/conf/lics/lics2016.html#ChatterjeeDHL16</url>

</inproceedings>

</r>

[...]

</dblpperson>

Our DBLP scenario – first XSLT

- We first give a simple XSLT that creates a webpage with
 - A list of journal publications, and
 - A list of conference papers
- and later improve it in several directions

Our DBLP scenario – first XSLT

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

```
<xsl:stylesheet version="2.0" xmlns:xsl="http://www.w3.org/1999/XSL/Transform">
```

```
  <xsl:output method="html"/>
```

```
  [...]
```

```
</xsl:stylesheet>
```

Our DBLP scenario – first XSLT

A template for the root element:

```
<xsl:template match="dblpperson">
  <html><head><title>Publications</title></head>
  <body>
    <h1>Publications</h1>
    <h2>Journal Publications</h2>
    <ol>
      <xsl:apply-templates select="//article"/>
    </ol>
    <h2>Conference Papers</h2>
    <ol>
      <xsl:apply-templates select="//inproceedings"/>
    </ol>
  </body>
</html>
</xsl:template>
```

Our DBLP scenario – first XSLT

A template for formatting article entries:

```
<xsl:template match="article">
  <li>
    <xsl:apply-templates select="author"/><br/>
    <b><xsl:value-of select="title"/></b><br/>
    <xsl:value-of select="journal"/>, <xsl:value-of select="volume"/>,
    <xsl:value-of select="pages"/>, <xsl:value-of select="year"/>
  </li>
</xsl:template>
```

Our DBLP scenario – first XSLT

A template for formatting conference paper entries:

```
<xsl:template match="inproceedings">
  <li>
    <xsl:apply-templates select="author"/><br/>
    <b><xsl:value-of select="title"/></b><br/>
    In Proceedings of <xsl:value-of select="booktitle"/>,
    <xsl:value-of select="pages"/> (<xsl:value-of select="year"/>)
  </li>
</xsl:template>
```

```
<xsl:template match="author">
  <xsl:value-of select="."/>,
</xsl:template>
```

Our DBLP scenario – first XSLT

```
<r>
<article key="journals/algorithmica/DvorakHW17"
mdate="2017-01-13">
<author>Wolfgang Dvorák</author>
<author>Monika Henzinger</author>
<author>David P. Williamson</author>
<title>Maximizing a Submodular Function with Viability
Constraints.</title>
<pages>152-172</pages><year>2017</year>
<volume>77</volume><journal>Algorithmica</journal>
<number>1</number>
<ee>http://dx.doi.org/10.1007/s00453-015-0066-y</ee>
<url>db/journals/algorithmica/algorithmica77.html#Dvorak
HW17</url>
</article>
</r>
```

```
<li>
Wolfgang Dvorák, Monika Henzinger,
David P. Williamson,<br>
<b>Maximizing a Submodular Function with
Viability Constraints.</b>
<br>
Algorithmica, 77, 152-172, 2017
</li>
```

Our DBLP scenario – first XSLT

```
<r>
<inproceedings key="conf/lics/ChatterjeeDHL16"
mdate="2016-10-27">
<author>Krishnendu Chatterjee</author>
<author>Wolfgang Dvorák</author>
<author>Monika Henzinger</author>
<author>Veronika Loitzenbauer</author>
<title>Model and Objective Separation with Conditional
Lower Bounds: Disjunction is Harder than
Conjunction.</title>
<pages>197-206</pages><year>2016</year>
<booktitle>LICS</booktitle>
<ee>http://doi.acm.org/10.1145/2933575.2935304</ee>
<crossref>conf/lics/2016</crossref>
<url>db/conf/lics/lics2016.html#ChatterjeeDHL16</url>
</inproceedings>
</r>
```

```
<li>
  Krishnendu Chatterjee,
  Wolfgang Dvorák,
  Monika Henzinger,
  Veronika Loitzenbauer,<br>
  <b>Model and Objective Separation
  with Conditional Lower Bounds:
  Disjunction is Harder than
  Conjunction.</b><br>
  In Proceedings of LICS, 197-206
  (2016)
</li>
```

Our DBLP scenario – first XSLT

- This XSLT results dblp-simple.html (cf. tuwel)
- Issues with that webpage:
 - It does not distinguish between articles in peer reviewed journals and informal publications
 - It does not deal with missing values (we get several commas in a row)
 - The webpage does not mention the author for whom we created the publication list
 - No css-stylesheets for the webpage, no ids for list entries, etc.
 - ...

Our DBLP scenario – informal publications

```
<dblpperson name="Wolfgang Dvorák" n="48">
```

```
[...]
```

```
<r>      Informal publications have an attribute publtype
```

```
<article publtype="informal publication" key="journals/corr/ChatterjeeDHL16" mdate="2016-03-01">
```

```
<author>Krishnendu Chatterjee</author>
```

```
<author>Wolfgang Dvorák</author>
```

```
<author>Monika Henzinger</author>
```

```
<author>Veronika Loitzenbauer</author>
```

```
<title>Model and Objective Separation with Conditional Lower Bounds: Disjunction is Harder than  
Conjunction.</title>
```

```
<year>2016</year><volume>abs/1602.02670</volume><journal>CoRR</journal>
```

```
<ee>http://arxiv.org/abs/1602.02670</ee>
```

```
<url>db/journals/corr/corr1602.html#ChatterjeeDHL16</url>
```

```
</article>
```

```
</r>
```

```
[...]
```

```
</dblpperson>
```


Our XSLT– Template for the root element

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

```
  <html>
```

```
    <head>
```

```
      <title>Publications - <xsl:value-of select="@name"/></title>
```

```
      <link rel="stylesheet" href="all.css" media="all" type="text/css"/>
```

```
      <link rel="stylesheet" href="print.css" media="print" type="text/css"/>
```

```
    </head>
```

```
    <body>
```

```
      <h1>Publications</h1>
```

```
      <h2 id="journal">Journal Publications</h2>
```

```
        <ol><xsl:apply-templates select="//article[not(@publtype='informal publication')]" /></ol>
```

```
      <h2 id="conference">Conference Papers</h2>
```

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

```
      <h2 id="informal">Informal Publications</h2>
```

```
        <ol><xsl:apply-templates select="//article[@publtype='informal publication']"
```

```
          mode="informal" /></ol>
```

```
      </body>
```

```
    </html>
```

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

Our XSLT– Templates for article elements

```
<xsl:template match="article">
  <li id="{@key}">
    <xsl:call-template name="author_and_title"/>
    <xsl:value-of select="journal"/>, <xsl:value-of select="volume"/>,
    <xsl:value-of select="pages"/>, <xsl:value-of select="year"/>.
  </li>
</xsl:template>
```

```
<xsl:template match="article" mode="informal">
  <li id="{@key}">
    <xsl:call-template name="author_and_title"/>
    <xsl:value-of select="journal"/>, <xsl:value-of select="volume"/>,
    <xsl:value-of select="year"/>.
  </li>
</xsl:template>
```

Our XSLT– Template for Conference papers

```
<xsl:template match="inproceedings">
  <li id="{@key}">
    <xsl:call-template name="author_and_title"/>
    In Proceedings of <xsl:value-of select="booktitle"/>,
    <xsl:value-of select="pages"/> (<xsl:value-of select="year"/>)
  </li>
</xsl:template>
```

```
<xsl:template name="author_and_title">
  <xsl:apply-templates select="author"/><br/>
  <b><xsl:value-of select="title"/></b><br/>
</xsl:template>
```

Our XSLT– Template for Authors

```
<xsl:template match="author">
  <xsl:choose>
    <xsl:when test="./text()='Wolfgang Dvorák'">
      Wolfgang Dvořák,
    </xsl:when>
    <xsl:otherwise>
      <xsl:value-of select="."/>,
    </xsl:otherwise>
  </xsl:choose>
</xsl:template>
```

Our XSLT

```
<r>
<article key="journals/algorithmica/DvorakHW17"
mdate="2017-01-13">
<author>Wolfgang Dvorák</author>
<author>Monika Henzinger</author>
<author>David P. Williamson</author>
<title>Maximizing a Submodular Function with Viability
Constraints.</title>
<pages>152-172</pages><year>2017</year>
<volume>77</volume><journal>Algorithmica</journal>
<number>1</number>
<ee>http://dx.doi.org/10.1007/s00453-015-0066-y</ee>
<url>db/journals/algorithmica/algorithmica77.html#Dvorak
HW17</url>
</article>
</r>
```

```
<li id="journals/algorithmica/DvorakHW17">
Wolfgang Dvořák, Monika Henzinger,
David P. Williamson, <br>
<b>Maximizing a Submodular Function
with Viability Constraints.</b><br>
Algorithmica, 77, 152-172, 2017.
</li>
```

Our DBLP scenario

```
<r>
<inproceedings key="conf/lics/ChatterjeeDHL16"
mdate="2016-10-27">
<author>Krishnendu Chatterjee</author>
<author>Wolfgang Dvorák</author>
<author>Monika Henzinger</author>
<author>Veronika Loitzenbauer</author>
<title>Model and Objective Separation with Conditional
Lower Bounds: Disjunction is Harder than
Conjunction.</title>
<pages>197-206</pages><year>2016</year>
<booktitle>LICS</booktitle>
<ee>http://doi.acm.org/10.1145/2933575.2935304</ee>
<crossref>conf/lics/2016</crossref>
<url>db/conf/lics/lics2016.html#ChatterjeeDHL16</url>
</inproceedings>
</r>
```

```
<li id="conf/lics/ChatterjeeDHL16" >
  Krishnendu Chatterjee,
  Wolfgang Dvořák, Monika Henzinger,
  Veronika Loitzenbauer,<br>
  <b>Model and Objective Separation
  with Conditional Lower Bounds:
  Disjunction is Harder than
  Conjunction.</b><br>
  In Proceedings of LICS, 197-206
  (2016)
</li>
```

Our DBLP scenario

```
<r>
<article pubtype="informal publication"
key="journals/corr/ChatterjeeDHL16" mdate="2016-03-01">
<author>Krishnendu Chatterjee</author>
<author>Wolfgang Dvorák</author>
<author>Monika Henzinger</author>
<author>Veronika Loitzenbauer</author>
<title>Model and Objective Separation with Conditional
Lower Bounds: Disjunction is Harder than
Conjunction.</title>
<year>2016</year><volume>abs/1602.02670</volume>
<journal>CoRR</journal>
<ee>http://arxiv.org/abs/1602.02670</ee>
<url>db/journals/corr/corr1602.html#ChatterjeeDHL16</url>
</article>
</r>
```

```
<li id="journals/corr/ChatterjeeDHL16">
  Krishnendu Chatterjee,
  Wolfgang Dvořák, Monika Henzinger,
  Veronika Loitzenbauer,<br>
  <b>Model and Objective Separation
  with Conditional Lower Bounds:
  Disjunction is Harder than
  Conjunction.</b><br>
  CoRR, abs/1602.02670, 2016.
</li>
```

Our DBLP scenario

- This XSLT results publications.html (cf. tuwel)

Our DBLP scenario – coAuthors

- Now as we have a publication list we are interested in a list of coAuthors.

Two scientist are considered to be coAuthors if they have written at least one joint publication.

Our XSLT– Template for the root element

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

```
  <html>
```

```
    <head>
```

```
      <title>Publications - <xsl:apply-templates select="@name"/></title>
```

```
      <link rel="stylesheet" href="all.css" media="all" type="text/css"/>
```

```
      <link rel="stylesheet" href="print.css" media="print" type="text/css"/>
```

```
    </head>
```

```
    <body>
```

```
      <h1>Publications</h1>
```

```
      <h2 id="coAuthors">CoAuthors of <xsl:apply-templates select="@name"/></h2>
```

```
      <ul>
```

```
        <xsl:variable name="author" select="@name"/>
```

```
        <xsl:apply-templates
```

```
          select="//author[not(./text() = $author)][not(./text() = preceding::author/text())]"/>
```

```
      </ul>
```

```
    </body>
```

```
  </html>
```

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

**List all coAuthors
(but not the author)**

**List all coAuthors
(but avoid duplicates)**

Our XSLT– Template for author elements

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

```
  <li>
```

List the name of the author and start a new line

```
    <b>
```

```
      <xsl:choose>
```

```
        <xsl:when test="./text()='Wolfgang Dvorák'">
```

```
          Wolfgang Dvořák,
```

```
        </xsl:when>
```

```
      <xsl:otherwise>
```

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

```
      </xsl:otherwise>
```

```
    </xsl:choose>
```

```
  </b><br/>
```

```
  [...]
```

```
</li>
```

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

Our XSLT– Template for author elements

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

```
<li>
```

```
[...]
```

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

Number of joint papers:

Count joint publications

```
<xsl:value-of select="count(//r//author[./text()=$coauthor/text()])"/> <br/>
```

Joint papers:

```
<xsl:for-each select="//r[./author/text()=$coauthor/text()]">
```

**List joint publications
and link to the entry in
publications.html**

```
<xsl:sort select="element()/year" order="ascending"/>
```

```
<a href="publications.html#{element()/@key}">
```

```
[<xsl:value-of select="position()"/>]
```

```
</a>
```

```
<xsl:if test="position()!=$last()">, </xsl:if>
```

```
</xsl:for-each><br/>
```

```
[...]
```

```
</li>
```

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

Our XSLT– Template for author elements

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

```
<li>
```

```
  [...]
```

Joint CoAuthors:

```
<xsl:variable name="coauthors"
```

```
  select="//author[not(./dblpperson/@name)][not(./author=$coauthor)]"/>
```

```
<xsl:apply-templates select="$coauthors[index-of($coauthors/text(),./text())[1]]"
```

```
  mode="simple"/>
```

```
</li>
```

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

**List joint coAuthors
(but avoid duplicates)**

Our XSLT– Template for author elements

```
<xsl:template match="author" mode="simple">
  <xsl:choose>
    <xsl:when test="./text()='Wolfgang Dvorák'">
      Wolfgang Dvořák,
    </xsl:when>
    <xsl:otherwise>
      <xsl:value-of select="."/>,
    </xsl:otherwise>
  </xsl:choose>
</xsl:template>
```

**Alternative Template
that returns just the
authors name**

Our XSLT– Template for @name

```
<xsl:template match="@name">
  <xsl:choose>
    <xsl:when test=".='Wolfgang Dvorák'">
      Wolfgang Dvořák
    </xsl:when>
    <xsl:otherwise>
      <xsl:value-of select="."/>
    </xsl:otherwise>
  </xsl:choose>
</xsl:template>
```

Our XSLT– Example output (cf authors.html)

[...]

<h2 id="coAuthors">CoAuthors of Wolfgang Dvořák</h2>

Monika Henzinger

Number of joint Papers: 11

Joint papers:

[1],

[2],

[...]

[11]

Joint CoAuthors: David P. Williamson, Krishnendu Chatterjee, Veronika

Loitzenbauer, Sayan Bhattacharya, Martin Starnberger, Ludek Cigler,

David P. Williamson

Number of joint Papers: 3

[...]

Our DBLP scenario – coAuthors

- Finally, we want to order the coAuthors by the number of joint publications
- We only have to change to template for the root element

Our XSLT– Template for the root element

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

```
  <html>
```

```
    <head>
```

```
      <title>Publications - <xsl:apply-templates select="@name"/></title>
```

```
      <link rel="stylesheet" href="all.css" media="all" type="text/css"/>
```

```
      <link rel="stylesheet" href="print.css" media="print" type="text/css"/>
```

```
    </head>
```

```
    <body>
```

```
      <h1>Publications</h1>
```

```
      <h2 id="coAuthors">CoAuthors of <xsl:apply-templates select="@name"/></h2>
```

```
      <ul>
```

[next slide]

```
      </ul>
```

```
    </body>
```

Sofar unchanged

```
  </html>
```

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

Our XSLT– Template for the root element

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

```
[...]
```

```
<ul>
```

```
  <xsl:variable name="author" select="@name"/>
```

```
  <xsl:variable name="coauthors">
```

```
    <xsl:for-each-group select="//r//author" group-by="text()">
```

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

```
      <author count="{count(//r//author[./text()=$coauthor/text()])}">
```

```
        <xsl:value-of select="./text()"/></author>
```

```
    </xsl:for-each-group>
```

```
  </xsl:variable>
```

```
[...]
```

```
</ul>
```

```
[...]
```

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

In the variable coauthors we store new author elements that already have the number of joint publications as attribute

Our XSLT– Template for the root element

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

```
[...]
```

```
<ul>
```

```
  <xsl:variable name="author" select="@name"/>
```

```
  <xsl:variable name="coauthors">
```

```
    [...]
```

```
  </xsl:variable>
```

```
  <xsl:variable name="dblpperson" select="."/> Reference to the root element
```

```
  <xsl:for-each select="$coauthors/author">
```

```
    <xsl:sort select="@count" data-type="number" order="descending"/>
```

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

```
    <xsl:apply-templates
```

```
      select="$dblpperson//author[not(./text() = $author)][./text()=$coauthor/text()][not(./text() =
```

```
preceding::author/text())]">
```

```
    </xsl:for-each>
```

```
</ul>
```

```
[...]
```

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

In coauthors we store author elements that have the number of joint papers as attribute

One additional predicate that selects only elements that correspond to the current coauthor

Our DBLP scenario – coAuthors

- Finally, we ordered the coAuthors by the number of joint publications
- The other templates are unchanged
- An example output is given in authors2.html (tuwel)