Universidade do Minho
Mestrado Integrado em Engenharia Biomédica
Publicação Electrónica

"Schema Languages"e XSLT

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Conteúdo

1 Contextualização

Pretendia-se construir dois documentos — um XML Schema e um DTD — capazes de caracterizar uma base de dados bibliográfica semelhante àquela veiculada pelo BibTeX. Consideraram-se, neste caso específico, apenas as entradas bibliográficas mais importantes: `article`, `book`, `inproceedings`, `manual`, `mastersthesis`, `misc`, `phdthesis`, `techreport` e `unpublished`. Posteriormente, recorreu-se à linguagem XSLT (Extensible Stylesheet Language Transformations) para transformar um documento XML em *output* HTML.

Devido à incompatibilidade do programa XML Editor com o Mac OS X, a validação do XML Schema e do DTD foi feita recorrendo a um software de validação online — `Validome DTD and Schema Validator` —, tendo a validação do documento XML contra o respectivo XML Schema sido realizada da mesma forma, mas utilizando uma aplicação distinta — `CoreFiling XML Schema Validator`.

2 DTD

2.1 DTD

```
<!ENTITY % bibtex-entry "(article | book | inproceedings | manual | mastersthesis | misc |
 phdthesis | techreport | unpublished)">

<!ELEMENT article (author+,title,journal,year,volume?,number?,pages?,month?,note?)>
<!ELEMENT author (author+)>
<!ATTLIST author name CDATA #REQUIRED
  surname CDATA #REQUIRED>
<!ELEMENT title (#PCDATA)>
<!ELEMENT journal (#PCDATA)>
<!ELEMENT year (#PCDATA)>
<!ELEMENT volume (#PCDATA)>
<!ELEMENT number (#PCDATA)>
<!ELEMENT pages (#PCDATA)>
<!ELEMENT month (#PCDATA)>
<!ELEMENT note (#PCDATA)>

<!ELEMENT book ((author+ | editor),title,publisher,year,(volume | number)?,series?,address?,
edition?,month?,note?)>
<!ELEMENT author (author+)>
<!ATTLIST author name CDATA #REQUIRED
 surname CDATA #REQUIRED>
<!ELEMENT editor (#PCDATA)>
<!ELEMENT title (#PCDATA)>
<!ELEMENT publisher (#PCDATA)>
<!ELEMENT year (#PCDATA)>
<!ELEMENT volume (#PCDATA)>
<!ELEMENT number (#PCDATA)>
<!ELEMENT series (#PCDATA)>
<!ELEMENT address (#PCDATA)>
<!ELEMENT edition (#PCDATA)>
<!ELEMENT month (#PCDATA)>
<!ELEMENT note (#PCDATA)>

<!ELEMENT inproceedings (author+,title,booktitle,year,((editor,volume) | (number,series,
pages,address,month,organization,publisher,note)))?>
<!ELEMENT author (author+)>
<!ATTLIST author name CDATA #REQUIRED
 surname CDATA #REQUIRED>
<!ELEMENT title (#PCDATA)>
<!ELEMENT booktitle (#PCDATA)>
```

```
<!ELEMENT year (#PCDATA)>
<!ELEMENT editor (#PCDATA)>
<!ELEMENT volume (#PCDATA)>
<!ELEMENT number (#PCDATA)>
<!ELEMENT series (#PCDATA)>
<!ELEMENT pages (#PCDATA)>
<!ELEMENT address (#PCDATA)>
<!ELEMENT month (#PCDATA)>
<!ELEMENT organization (#PCDATA)>
<!ELEMENT publisher (#PCDATA)>
<!ELEMENT note (#PCDATA)>

<!ELEMENT manual (title,(author*),organization?,address?,edition?,month?,year?,note?)>
<!ELEMENT title (#PCDATA)>
<!ELEMENT author (author*)>
<!ATTLIST author name CDATA #REQUIRED
 surname CDATA #REQUIRED>
<!ELEMENT organization (#PCDATA)>
<!ELEMENT address (#PCDATA)>
<!ELEMENT edition (#PCDATA)>
<!ELEMENT month (#PCDATA)>
<!ELEMENT year (#PCDATA)>
<!ELEMENT note (#PCDATA)>
<!ELEMENT note (#PCDATA)>

<!ELEMENT mastersthesis (author+,title,school,year,type?,address?,month?,note?)>
<!ELEMENT author (author+)>
<!ATTLIST author name CDATA #REQUIRED
 surname CDATA #REQUIRED>
<!ELEMENT title (#PCDATA)>
<!ELEMENT school (#PCDATA)>
<!ELEMENT year (#PCDATA)>
<!ELEMENT type (#PCDATA)>
<!ELEMENT address (#PCDATA)>
<!ELEMENT month (#PCDATA)>
<!ELEMENT note (#PCDATA)>

<!ELEMENT misc ((author*),title?,howpublished?,month?,year?,note?)>
<!ELEMENT author (author*)>
<!ATTLIST author name CDATA #REQUIRED
 surname CDATA #REQUIRED>
<!ELEMENT title (#PCDATA)>
<!ELEMENT howpublished (#PCDATA)>
```

```
<!ELEMENT month (#PCDATA)>
<!ELEMENT year (#PCDATA)>
<!ELEMENT note (#PCDATA)>

<!ELEMENT phdthesis (author+,title,school,year,type?,address?,month?,note?)>
<!ELEMENT author (author+)>
<!ATTLIST author name CDATA #REQUIRED
 surname CDATA #REQUIRED>
<!ELEMENT title (#PCDATA)>
<!ELEMENT school (#PCDATA)>
<!ELEMENT year (#PCDATA)>
<!ELEMENT type (#PCDATA)>
<!ELEMENT address (#PCDATA)>
<!ELEMENT month (#PCDATA)>
<!ELEMENT note (#PCDATA)>

<!ELEMENT techreport (author+,title,institution,year,type?,number?,address?,month?,note?)>
<!ELEMENT author (author+)>
<!ATTLIST author name CDATA #REQUIRED
 surname CDATA #REQUIRED>
<!ELEMENT title (#PCDATA)>
<!ELEMENT institution (#PCDATA)>
<!ELEMENT year (#PCDATA)>
<!ELEMENT type (#PCDATA)>
<!ELEMENT number (#PCDATA)>
<!ELEMENT address (#PCDATA)>
<!ELEMENT month (#PCDATA)>
<!ELEMENT note (#PCDATA)>

<!ELEMENT unpublished (author+,title,note,month?,year?)>
<!ELEMENT author (author+)>
<!ATTLIST author name CDATA #REQUIRED
 surname CDATA #REQUIRED>
<!ELEMENT title (#PCDATA)>
<!ELEMENT note (#PCDATA)>
<!ELEMENT month (#PCDATA)>
<!ELEMENT year (#PCDATA)>
```

2.2 Validação

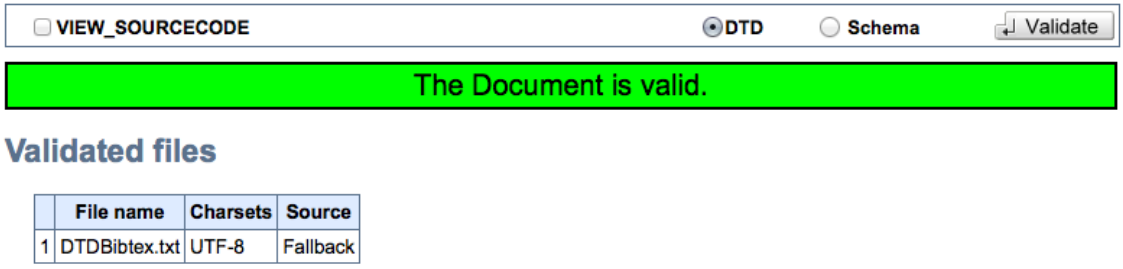

Figura 1: Validação do DTD, utilizando a ferramenta de validação online `Validome DTD and Schema Validator`.

3 XML Schema

Dado que se aplicou um número de entradas bibliográficas considerável, optou-se por dividir o schema definindo todos os elementos e atributos, numa primeira fase, e referenciando-os depois dentro dos elementos complexos correspondentes a cada uma das entradas. A título demonstrativo, utilizaram-se expressões regulares para restringir o tipo de dados introduzidos nos campos `year` e `pages`.

3.1 Schema

```
<?xml version="1.0" encoding="ISO-8859-1" ?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">

<!-- definition of simple elements -->

<xs:element name="title" type="xs:string"/>
<xs:element name="journal" type="xs:string"/>
<xs:element name="volume" type="xs:integer"/>
<xs:element name="number" type="xs:integer"/>
<xs:element name="month" type="xs:string"/>
<xs:element name="note" type="xs:string"/>
<xs:element name="series" type="xs:string"/>
<xs:element name="editor" type="xs:string"/>
<xs:element name="publisher" type="xs:string"/>
<xs:element name="booktitle" type="xs:string"/>
<xs:element name="address" type="xs:string"/>
<xs:element name="organization" type="xs:string"/>
<xs:element name="edition" type="xs:integer"/>
<xs:element name="howpublished" type="xs:string"/>
<xs:element name="type" type="xs:string"/>
<xs:element name="institution " type="xs:string"/>
<xs:element name="firstname" type="xs:string"/>
<xs:element name="surname" type="xs:string"/>
<xs:element name="schoolname" type="xs:string"/>
<xs:element name="department" type="xs:string"/>
```

```
<!-- definition of attributes -->

<xs:attribute name="articleid" type="xs:string"/>
<xs:attribute name="bookid" type="xs:string"/>
<xs:attribute name="inprocid" type="xs:string"/>
<xs:attribute name="manualid" type="xs:string"/>
<xs:attribute name="mastersid" type="xs:string"/>
<xs:attribute name="miscid" type="xs:string"/>
<xs:attribute name="phdid" type="xs:string"/>
<xs:attribute name="techid" type="xs:string"/>
<xs:attribute name="unpubid" type="xs:string"/>

<!-- definition of complex elements -->

<xs:element name="authors">
<xs:complexType>
<xs:sequence>
        <xs:element ref="author" maxOccurs="unbounded"/>
</xs:sequence>
  </xs:complexType>
</xs:element>

<xs:element name="author">
<xs:complexType>
<xs:sequence>
    <xs:element ref="firstname"/>
    <xs:element ref="surname"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:element name="year">
<xs:simpleType>
    <xs:restriction base="xs:integer">
    <xs:pattern value="(19|20)[0-9][0-9]">
    </xs:pattern>
    </xs:restriction>
</xs:simpleType>
</xs:element>

<xs:element name="pages">
<xs:simpleType>
```

```
    <xs:restriction base="xs:string">
    <xs:pattern value="[0-9]*[0-9]*[0-9]-[0-9]*[0-9]*[1-9]">
    </xs:pattern>
    </xs:restriction>
</xs:simpleType>
</xs:element>

<xs:element name="school">
<xs:complexType>
<xs:sequence>
            <xs:element ref="schoolname"/>
         <xs:element ref="department"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

<xs:element name="bibtexentry">
    <xs:complexType>
<xs:sequence>

<!-- article -->

<xs:element name="article">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="authors"/>
      <xs:element ref="title"/>
      <xs:element ref="journal"/>
      <xs:element ref="year"/>
      <xs:element ref="volume" minOccurs="0"/>
      <xs:element ref="number" minOccurs="0"/>
      <xs:element ref="pages" minOccurs="0"/>
      <xs:element ref="month" minOccurs="0"/>
      <xs:element ref="note" minOccurs="0"/>
    </xs:sequence>
    <xs:attribute ref="articleid" use="optional"/>
  </xs:complexType>
</xs:element>

<!-- book -->

<xs:element name="book">
  <xs:complexType>
```

```
    <xs:sequence>
      <xs:element ref="authors"/>
      <xs:element ref="title"/>
      <xs:element ref="publisher"/>
      <xs:element ref="year"/>
    <xs:choice>
<xs:sequence>
      <xs:element ref="volume" minOccurs="0"/>
      <xs:element ref="number" minOccurs="0"/>
        </xs:sequence>
    </xs:choice>
      <xs:element ref="series" minOccurs="0"/>
      <xs:element ref="address" minOccurs="0"/>
      <xs:element ref="edition" minOccurs="0"/>
      <xs:element ref="month" minOccurs="0"/>
      <xs:element ref="note" minOccurs="0"/>
    </xs:sequence>
    <xs:attribute ref="bookid" use="optional"/>
  </xs:complexType>
</xs:element>

<!-- inproceedings -->

<xs:element name="inproceedings">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="authors"/>
      <xs:element ref="booktitle"/>
      <xs:element ref="year"/>
    <xs:choice>
<xs:sequence>
    <xs:element ref="volume" minOccurs="0"/>
    <xs:element ref="editor" minOccurs="0"/>
</xs:sequence>
    </xs:choice>
      <xs:element ref="number" minOccurs="0"/>
      <xs:element ref="series" minOccurs="0"/>
      <xs:element ref="pages" minOccurs="0"/>
      <xs:element ref="address" minOccurs="0"/>
      <xs:element ref="month" minOccurs="0"/>
      <xs:element ref="organization" minOccurs="0"/>
      <xs:element ref="publisher" minOccurs="0"/>
      <xs:element ref="note" minOccurs="0"/>
```

```
    </xs:sequence>
    <xs:attribute ref="inprocid" use="optional"/>
  </xs:complexType>
</xs:element>

<!-- manual -->

<xs:element name="manual">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="title"/>
      <xs:element ref="authors" minOccurs="0"/>
      <xs:element ref="organization" minOccurs="0"/>
      <xs:element ref="address" minOccurs="0"/>
      <xs:element ref="edition" minOccurs="0"/>
      <xs:element ref="month" minOccurs="0"/>
      <xs:element ref="year" minOccurs="0"/>
      <xs:element ref="note" minOccurs="0"/>
    </xs:sequence>
    <xs:attribute ref="manualid" use="optional"/>
  </xs:complexType>
</xs:element>

<!-- mastersthesis -->

<xs:element name="mastersthesis">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="authors"/>
      <xs:element ref="title"/>
      <xs:element ref="school"/>
      <xs:element ref="year"/>
      <xs:element ref="type" minOccurs="0"/>
      <xs:element ref="address" minOccurs="0"/>
      <xs:element ref="month" minOccurs="0"/>
      <xs:element ref="note" minOccurs="0"/>
    </xs:sequence>
    <xs:attribute ref="mastersid" use="optional"/>
  </xs:complexType>
</xs:element>

<!-- misc -->
```

```
<xs:element name="misc">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="authors" minOccurs="0"/>
      <xs:element ref="title" minOccurs="0"/>
      <xs:element ref="howpublished" minOccurs="0"/>
      <xs:element ref="month" minOccurs="0"/>
      <xs:element ref="year" minOccurs="0"/>
      <xs:element ref="note" minOccurs="0"/>
    </xs:sequence>
    <xs:attribute ref="miscid" use="optional"/>
  </xs:complexType>
</xs:element>

<!-- phdthesis -->

<xs:element name="phdthesis">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="authors"/>
      <xs:element ref="title"/>
      <xs:element ref="school"/>
      <xs:element ref="year"/>
      <xs:element ref="type" minOccurs="0"/>
      <xs:element ref="address" minOccurs="0"/>
      <xs:element ref="month" minOccurs="0"/>
      <xs:element ref="note" minOccurs="0"/>
    </xs:sequence>
    <xs:attribute ref="phdid" use="optional"/>
  </xs:complexType>
</xs:element>

<!-- techreport -->

<xs:element name="techreport">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="authors"/>
      <xs:element ref="title"/>
      <xs:element ref="school"/>
      <xs:element ref="year"/>
      <xs:element ref="type" minOccurs="0"/>
      <xs:element ref="number" minOccurs="0"/>
```

```
      <xs:element ref="address" minOccurs="0"/>
      <xs:element ref="month" minOccurs="0"/>
      <xs:element ref="note" minOccurs="0"/>
    </xs:sequence>
    <xs:attribute ref="techid" use="optional"/>
  </xs:complexType>
</xs:element>

<!-- unpublished -->

<xs:element name="unpublished">
  <xs:complexType>
    <xs:sequence>
      <xs:element ref="authors"/>
      <xs:element ref="title"/>
      <xs:element ref="note"/>
      <xs:element ref="month" minOccurs="0"/>
      <xs:element ref="year" minOccurs="0"/>
    </xs:sequence>
    <xs:attribute ref="unpubid" use="optional"/>
  </xs:complexType>
</xs:element>

    </xs:sequence>
  </xs:complexType>
</xs:element>

</xs:schema>
```

3.2 Validação

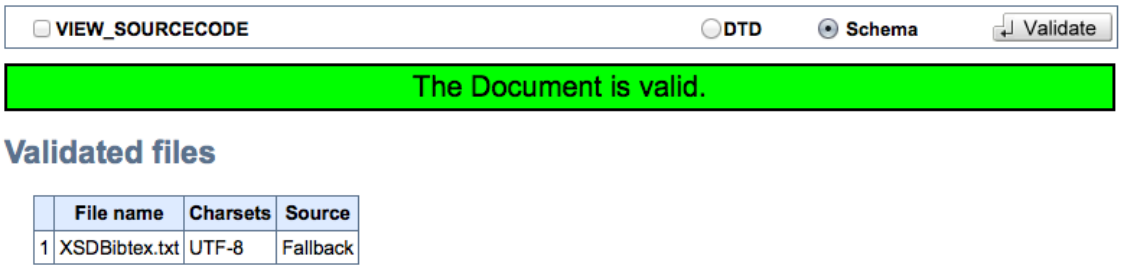

Figura 2: Validação do XML Schema, utilizando a ferramenta de validação online `Validome`.

4 Documento XML

```
<?xml version="1.0" encoding="ISO-8859-1" ?>

<bibtexentry
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="XSchema.txt">

    <article articleid="MICREG">
     <authors>
<author>
   <firstname>Danielle</firstname>
   <surname>Micciancio</surname>
</author>
<author>
   <firstname>Oded</firstname>
   <surname>Regev</surname>
</author>
<author>
   <firstname>Venkatesan</firstname>
   <surname>Guruswami</surname>
 </author>
       </authors>
<title>The Complexity of the Covering Radius Problem</title>
<journal>Computational Complexity</journal>
<year>2005</year>
<volume>14</volume>
<number>2</number>
<pages>90-121</pages>
<note>http://dx.doi.org/10.1007/s00037-005-0193-y</note>
    </article>

    <book bookid="NGUYENLLL">
     <authors>
<author>
   <firstname>Phong</firstname>
   <surname>Nguyen</surname>
</author>
     </authors>
<title>The LLL Algorithm: Survey and Applications</title>
<publisher>Springer</publisher>
<year>2009</year>
    </book>
```

```
    <inproceedings inprocid="GMNGREG">
     <authors>
<author>
   <firstname>Nicolas</firstname>
   <surname>Gama</surname>
</author>
<author>
   <firstname>Phong</firstname>
   <surname>Nguyen</surname>
</author>
<author>
   <firstname>Oded</firstname>
   <surname>Regev</surname>
</author>
      </authors>
<booktitle>Advances in Cryptology | Proceedings of EUROCRYPT'10</booktitle>
<year>2010</year>
<volume>6110</volume>
<series>LNCS</series>
    </inproceedings>

    <manual manualid="VALCRIPTO">
<title>Introdução à Segurança da Informação, Códigos e Criptografia</title>
     <authors>
<author>
   <firstname>José</firstname>
   <surname>Valença</surname>
</author>
     </authors>
<organization>Universidade do Minho</organization>
<year>2012</year>
    </manual>

    <mastersthesis mastersid="VPOL">
      <authors>
<author>
   <firstname>Joop</firstname>
   <surname>Van der Pol</surname>
</author>
      </authors>
<title>Lattice Based Cryptography</title>
<school>
   <schoolname>Eindhoven University of Technology</schoolname>
```

```
   <department>Department of Mathematics and Computer Science</department>
</school>
<year>2011</year>
</mastersthesis>

    <misc miscid="GN">
<title>Geometry of Numbers: Determinant of the Lattice and the Fundamental Parallelepiped</title>
<howpublished>Number Theory Reading Group</howpublished>
<year>2008</year>
<note>http://numbertheoryreadinggroup.wordpress.com/2008/04/24/</note>
    </misc>

    <phdthesis phdid="HIRTMPC">
     <authors>
<author>
   <firstname>Martin</firstname>
   <surname>Hirt</surname>
</author>
     </authors>
<title>Multi-party Computation: Efficient Protocols, General Adversaries and Voting</title>
<school>
   <schoolname>ETH Zurich</schoolname>
   <department>Department of Theoretical Computer Science</department>
</school>
<year>2001</year>
    </phdthesis>

    <techreport techid="BIOMWA">
     <authors>
<author>
   <firstname>Anil</firstname>
   <surname>Jain</surname>
</author>
<author>
   <firstname>Arun</firstname>
   <surname>Ross</surname>
</author>
     </authors>
<title>Biometrics-Based Web Access</title>
<school>
   <schoolname>Michigan State University</schoolname>
   <department>Department of Computer Science</department>
</school>
```

```
<year>1998</year>
<month>November</month>
    </techreport>

    <unpublished unpubid="REEDSHCM">
     <authors>
<author>
   <firstname>John</firstname>
   <surname>Reeds</surname>
</author>
<author>
   <firstname>Daniel</firstname>
   <surname>Ritchie</surname>
</author>
<author>
   <firstname>Ray</firstname>
   <surname>Morris</surname>
</author>
     </authors>
<title>The Hagelin Cypher Machine: Cryptanalysis from Ciphertext Alone</title>
<note>Submitted to the journal Cryptologia, but never published.</note>
<year>1978</year>
    </unpublished>

</bibtexentry>
```

4.1 Validação

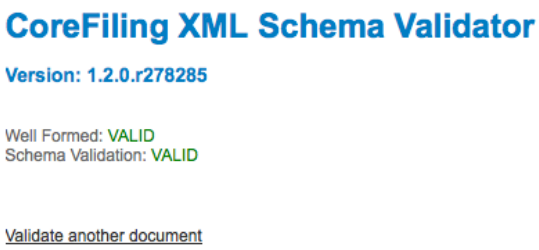

Figura 3: Validação do documento XML contra o XML Schema, utilizando a ferramenta de validação online oreFiling XML Schema Validator.

5 XSLT

O *output* gerado baseou-se numa tabela contendo um exemplo de cada uma das entradas bibliográficas definidas — dois, no caso da entrada `misc`, para efeitos de demonstração da aplicação de queries—, referindo apenas campos que, de uma forma aproximada, fossem transversais a todas elas.

Bibtex Collection

Entry Type	Title	Author(s)	Institution	Year
Article	The Complexity of the Covering Radius Problem	Danielle Micciancio, Oded Regev, Venkatesan Guruswami	-	2005
Book	The LLL Algorithm: Survey and Applications	Phong Nguyen	-	2009
Inproceedings	Advances in Cryptology — Proceedings of EUROCRYPT'10	Nicolas Gama, Phong Nguyen, Oded Regev	-	2010
Manual	Introdução à Segurança da Informação, Códigos e Criptografia	José Valença	Universidade do Minho	2012
Masters Thesis	Lattice Based Cryptography	Joop Van der Pol	Eindhoven University of Technology	2011
Misc	Geometry of Numbers: Determinant of the Lattice and the Fundamental Parallelepiped	-	-	2008
Misc	Solving Hard Lattice Problems	Thijs Laarhoven, Joop Van der Pol, Benne de Weger	-	2012
PhD Thesis	Multi-party Computation: Efficient Protocols, General Adversaries and Voting	Martin Hirt	ETH Zurich	2001
Tech Report	Biometrics-Based Web Access	Anil Jain, Arun Ross	Michigan State University	1998
Unpublished	The Hagelin Cypher Machine: Cryptanalysis from Ciphertext Alone	John Reeds, Daniel Ritchie, Ray Morris	-	1978

Figura 4: *Output* obtido após a transformação.

5.1 Queries

1. Mostrar apenas as entradas do tipo `misc` cujo ano seja superior a 2009.

```
<xsl:for-each select="bibtexentry/misc">
<xsl:if test="year &gt; 2009">
...
...
</xsl:if>
</xsl:for-each>
```

Bibtex Collection

Entry Type	Title	Author(s)	Institution	Year
Article	The Complexity of the Covering Radius Problem	Danielle Micciancio, Oded Regev, Venkatesan Guruswami	-	2005
Book	The LLL Algorithm: Survey and Applications	Phong Nguyen	-	2009
Inproceedings	Advances in Cryptology — Proceedings of EUROCRYPT'10	Nicolas Gama, Phong Nguyen, Oded Regev	-	2010
Manual	Introdução à Segurança da Informação, Códigos e Criptografia	José Valença	Universidade do Minho	2012
Masters Thesis	Lattice Based Cryptography	Joop Van der Pol	Eindhoven University of Technology	2011
Misc	Solving Hard Lattice Problems	Thijs Laarhoven, Joop Van de Pol, Benne de Weger	-	2012
PhD Thesis	Multi-party Computation: Efficient Protocols, General Adversaries and Voting	Martin Hirt	ETH Zurich	2001
Tech Report	Biometrics-Based Web Access	Anil Jain, Arun Ross	Michigan State University	1998
Unpublished	The Hagelin Cypher Machine: Cryptanalysis from Ciphertext Alone	John Reeds, Daniel Ritchie, Ray Morris	-	1978

Figura 5: *Output* obtido após aplicação de uma query sobre o campo `year` das entradas do tipo `misc`.

2. Mostrar apenas as entradas do tipo `misc` cujos autores sejam conhecidos.

```
<xsl:for-each select="misc">
```

```
<xsl:if test="authors != '-'">
...
...
</xsl:if>
</xsl:for-each>
```

Bibtex Collection

Entry Type	Title	Author(s)	Institution	Year
Article	The Complexity of the Covering Radius Problem	Danielle Micciancio, Oded Regev, Venkatesan Guruswami	-	2005
Book	The LLL Algorithm: Survey and Applications	Phong Nguyen	-	2009
Inproceedings	Advances in Cryptology — Proceedings of EUROCRYPT'10	Nicolas Gama, Phong Nguyen, Oded Regev	-	2010
Manual	Introdução à Segurança da Informação, Códigos e Criptografia	José Valença	Universidade do Minho	2012
Masters Thesis	Lattice Based Cryptography	Joop Van der Pol	Eindhoven University of Technology	2011
Misc	Solving Hard Lattice Problems	Thijs Laarhoven, Joop Van de Pol, Benne de Weger	-	2012
PhD Thesis	Multi-party Computation: Efficient Protocols, General Adversaries and Voting	Martin Hirt	ETH Zurich	2001
Tech Report	Biometrics-Based Web Access	Anil Jain, Arun Ross	Michigan State University	1998
Unpublished	The Hagelin Cypher Machine: Cryptanalysis from Ciphertext Alone	John Reeds, Daniel Ritchie, Ray Morris	-	1978

Figura 6: *Output* obtido após aplicação de uma query sobre o campo `authors` das entradas do tipo `misc`.

3. Mostrar apenas as entradas do tipo `misc` cujo título contenha a palavra 'Geometry'.

```
<xsl:for-each select="misc">
<xsl:if test="contains(title, 'Geometry')">
...
...
</xsl:if>
</xsl:for-each>
```

Bibtex Collection

Entry Type	Title	Author(s)	Institution	Year
Article	The Complexity of the Covering Radius Problem	Danielle Micciancio, Oded Regev, Venkatesan Guruswami	-	2005
Book	The LLL Algorithm: Survey and Applications	Phong Nguyen	-	2009
Inproceedings	Advances in Cryptology — Proceedings of EUROCRYPT'10	Nicolas Gama, Phong Nguyen, Oded Regev	-	2010
Manual	Introdução à Segurança da Informação, Códigos e Criptografia	José Valença	Universidade do Minho	2012
Masters Thesis	Lattice Based Cryptography	Joop Van der Pol	Eindhoven University of Technology	2011
Misc	Geometry of Numbers: Determinant of the Lattice and the Fundamental Parallelepiped	-	-	2008
PhD Thesis	Multi-party Computation: Efficient Protocols, General Adversaries and Voting	Martin Hirt	ETH Zurich	2001
Tech Report	Biometrics-Based Web Access	Anil Jain, Arun Ross	Michigan State University	1998
Unpublished	The Hagelin Cypher Machine: Cryptanalysis from Ciphertext Alone	John Reeds, Daniel Ritchie, Ray Morris	-	1978

Figura 7: *Output* obtido após aplicação de uma query sobre o campo `title` das entradas do tipo `misc`.