# Dati semistrutturati in XML

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- An XML document is said valid if it matches the schema.

# XML for people

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- Writing a book using DocBook. DocBook is nonproprietary, portable, modular, and easy to use with any text editor and you may format the final version according to your needs.

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- Writing a book using DocBook. DocBook is nonproprietary, portable, modular, and easy to use with any text editor and you may format the final version according to your needs.
- Write a web page in XHTML. XHTML has a well-defined syntax, you can work with any XML tool and web search engines eventually will understand your document and properly index it.

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- Data exchange. Information comes in different sources (relations, objects, documents, ...) and it needs to be exchanged between these sources. XML acts as the common dataspeak.
- Semistructured databases. These data has no regular schema and does not naturally fit into relational databases. XML has been proposed as the data model for semistructured data.

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- XML is not a network transport protocol like HTTP.
  XML won't send data across the network.
- XML is not a database management system like Oracle.
  XML does not store and retrieve data.

# Example 1

1. Read the XML document `people.xml` with any browser;
2. watch the tree data model in `people.ps`;
3. check whether `people.xml` is well-formed by loading it with any browser;
4. read the DTD in `people.dtd` with any text editor;
5. check whether `people.xml` is valid by using STG XML Validation Form.

# Example 2

1. Read the context description in `biblio.html`;
2. read the XML document `biblio.xml`;
3. watch the tree data model in `biblio.ps`;
4. read the DTD in `biblio.dtd`.

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  - XML Path Language (XPath). It is a language to retrieve elements from a single XML document.
  - XML Query Language (XQuery). It is a full query language for XML databases.

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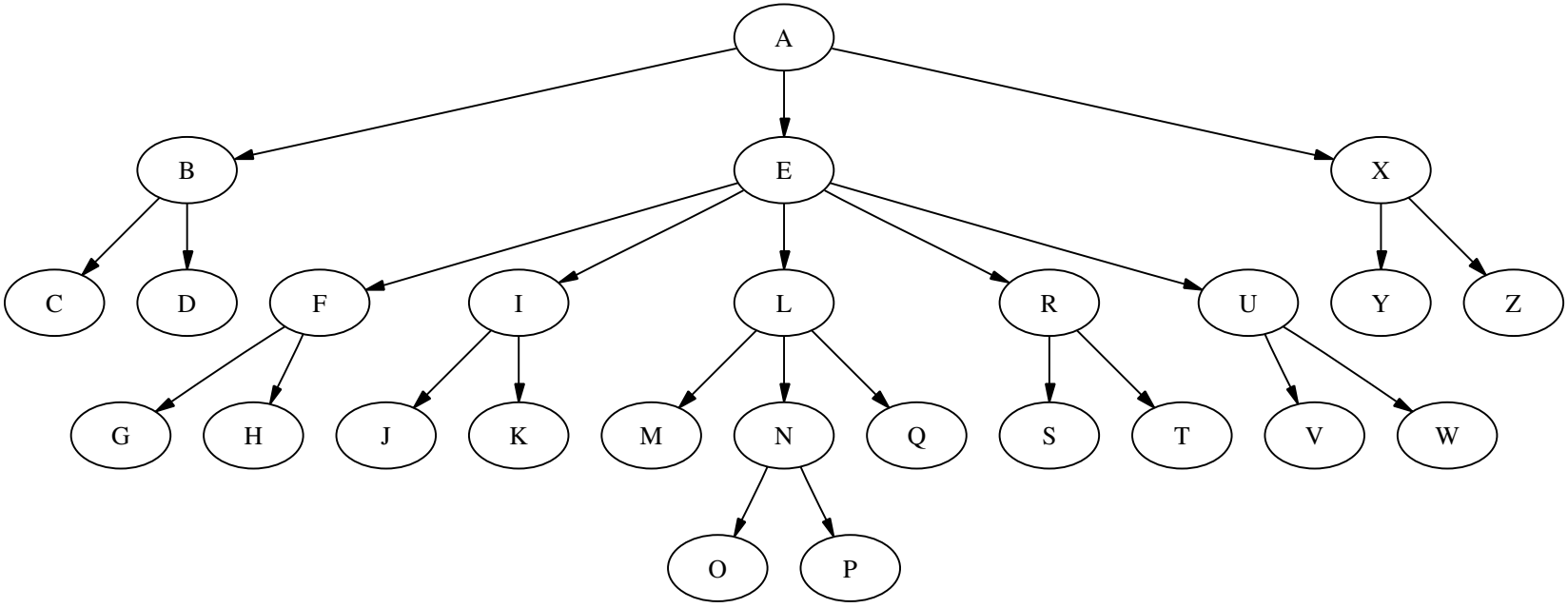
  - `axis` indicates how to navigate the XML tree;
  - `test` filters the result according to the nodes' type;
  - `filter` is an optional Boolean path condition to further restrict the result.

# Learning the English alphabet...



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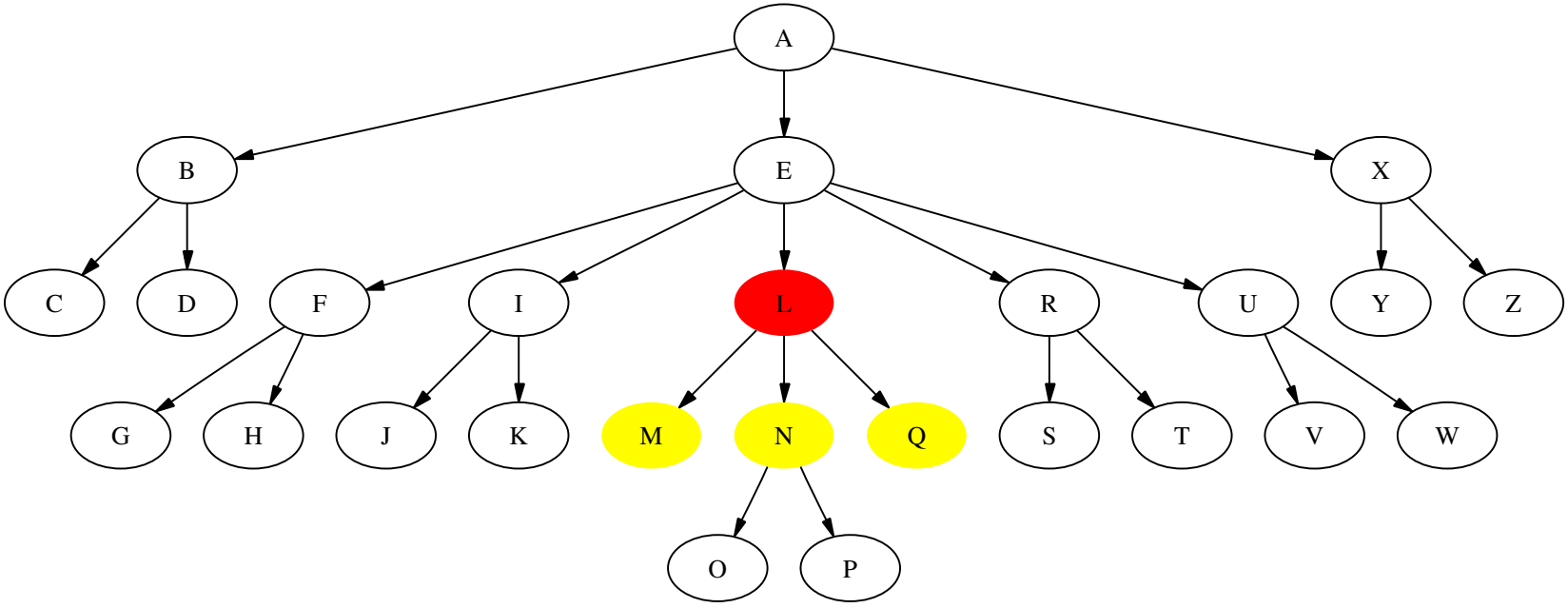

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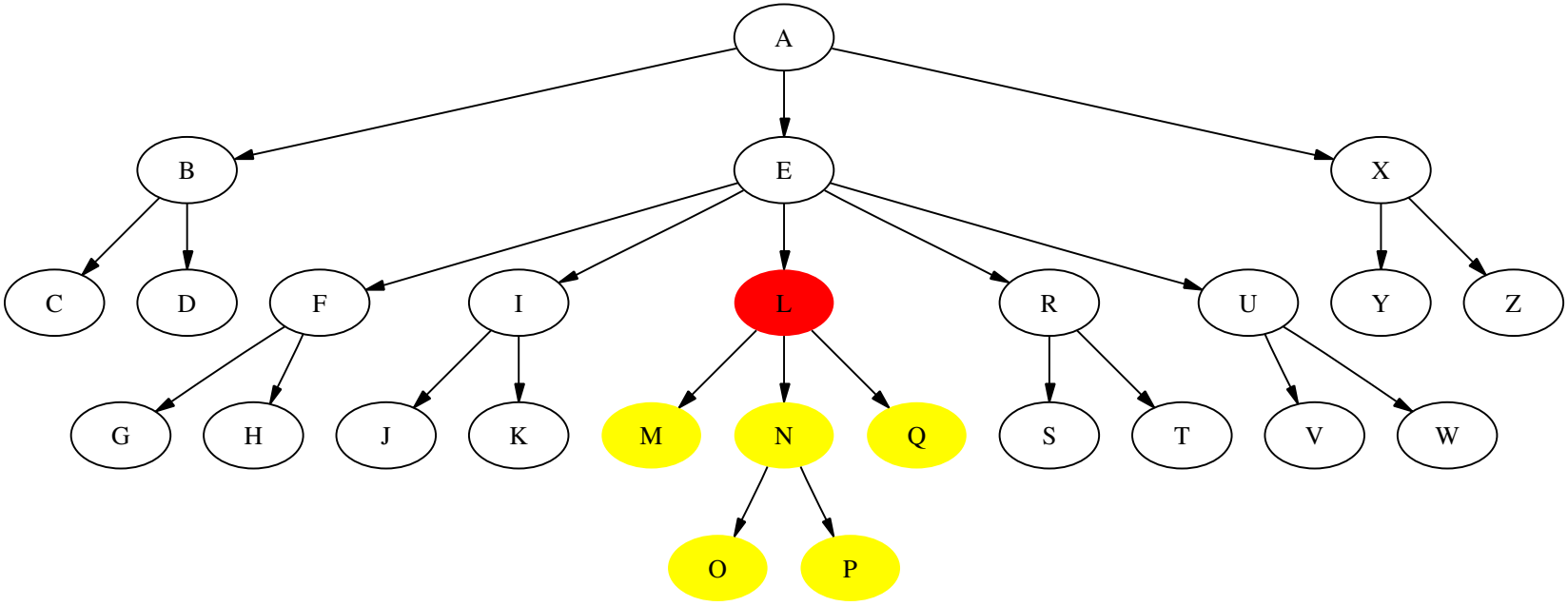

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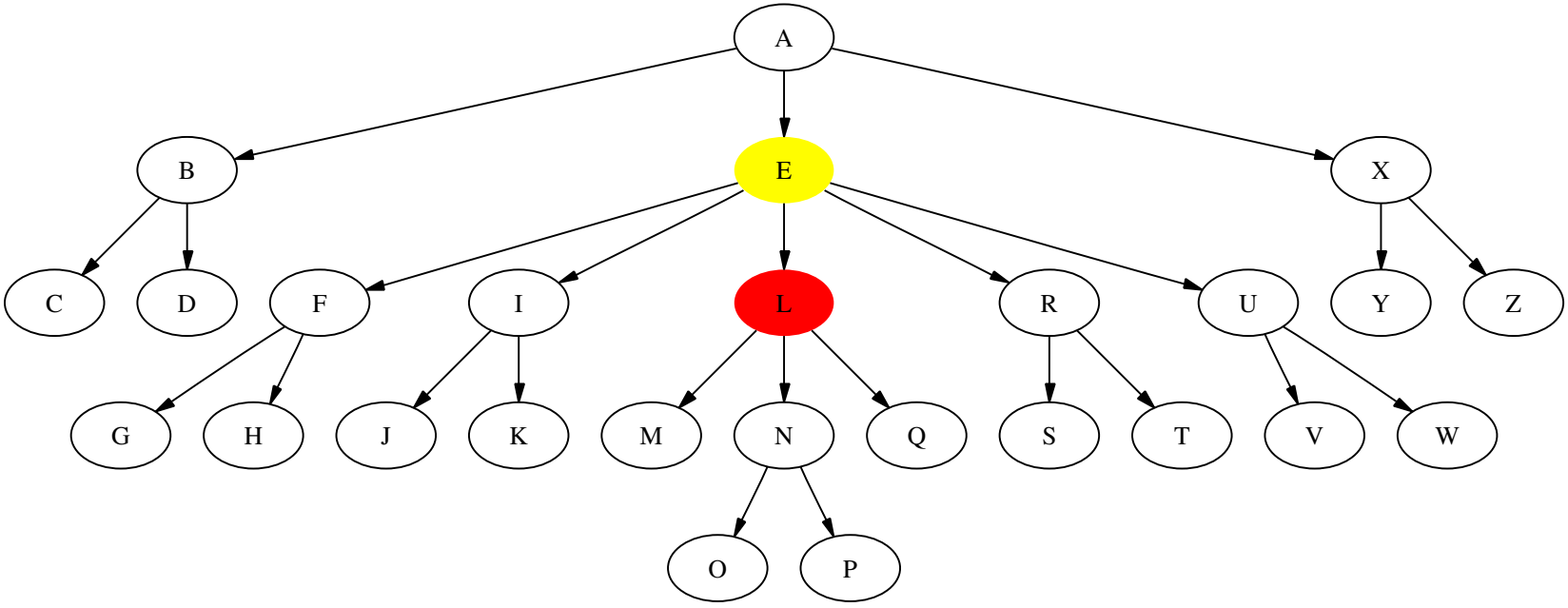

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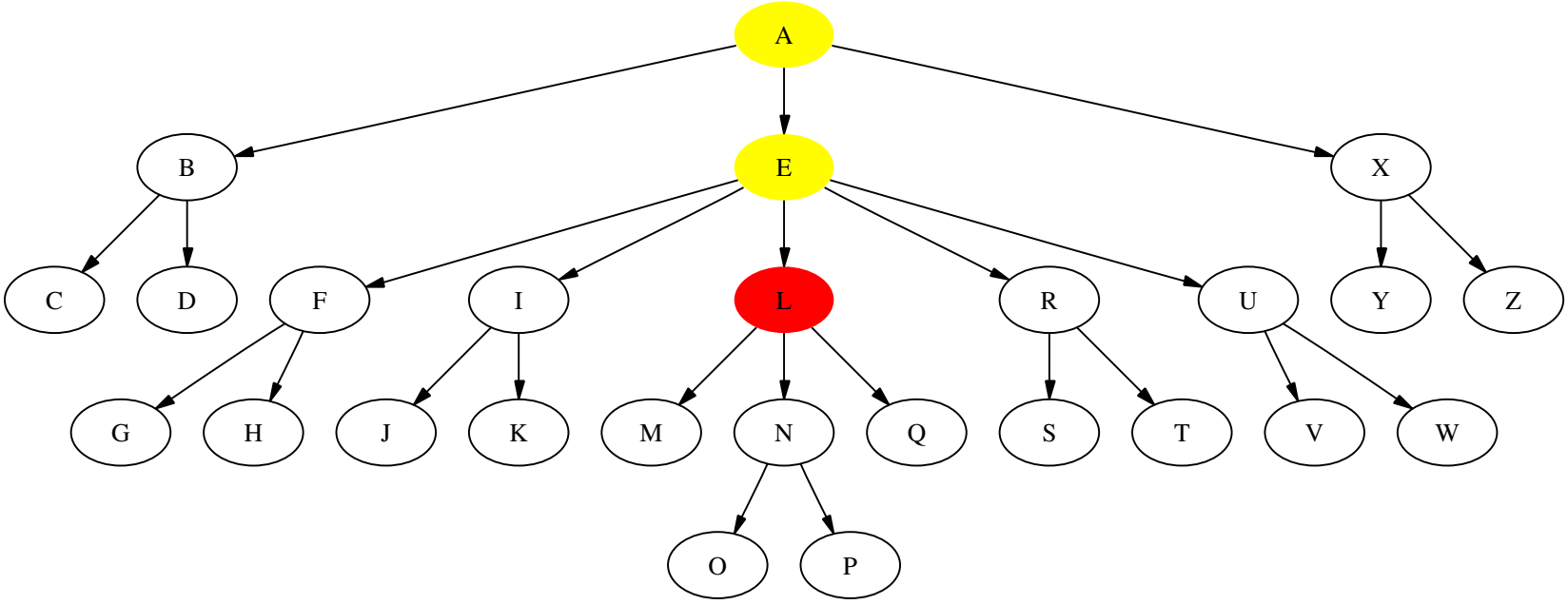

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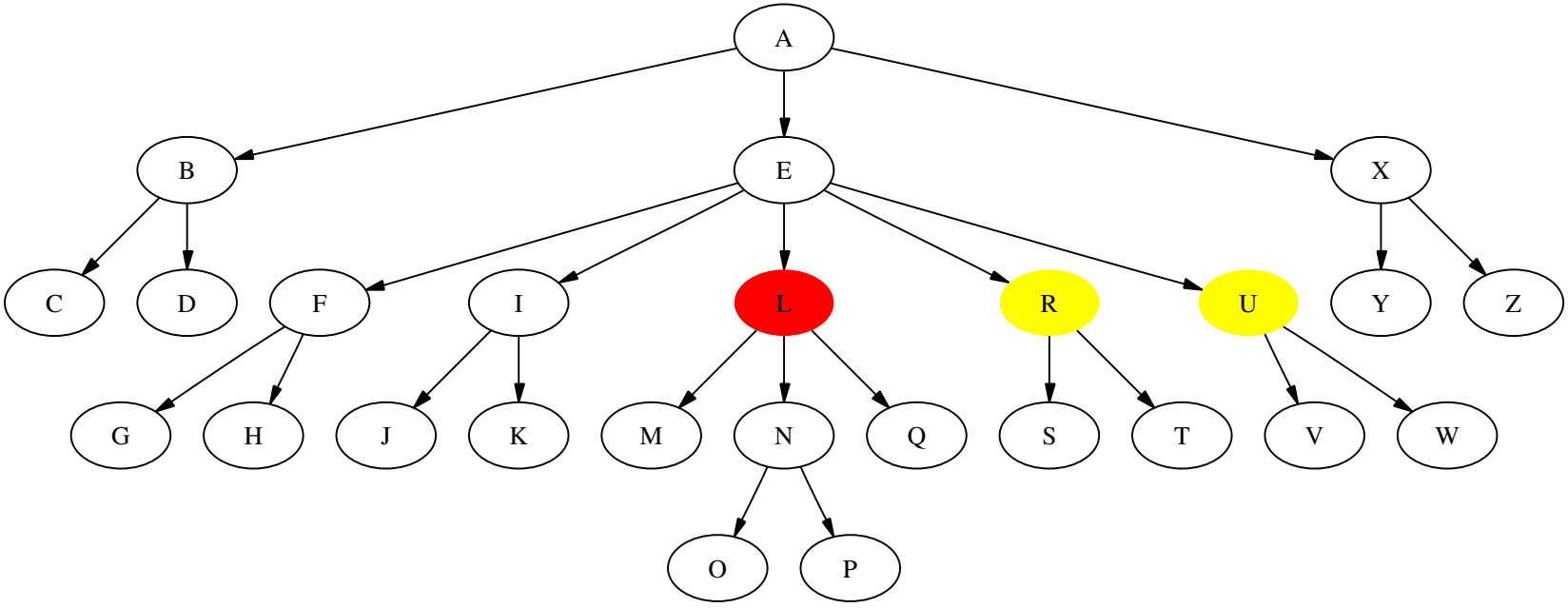

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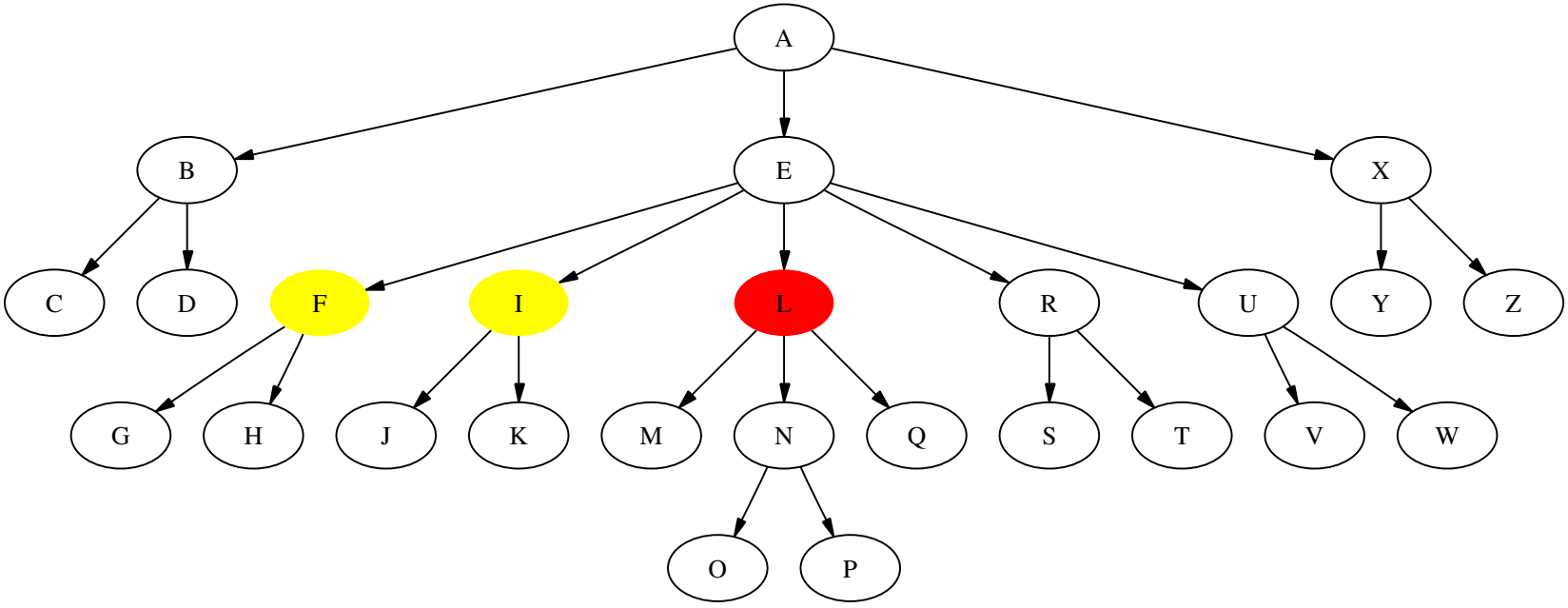

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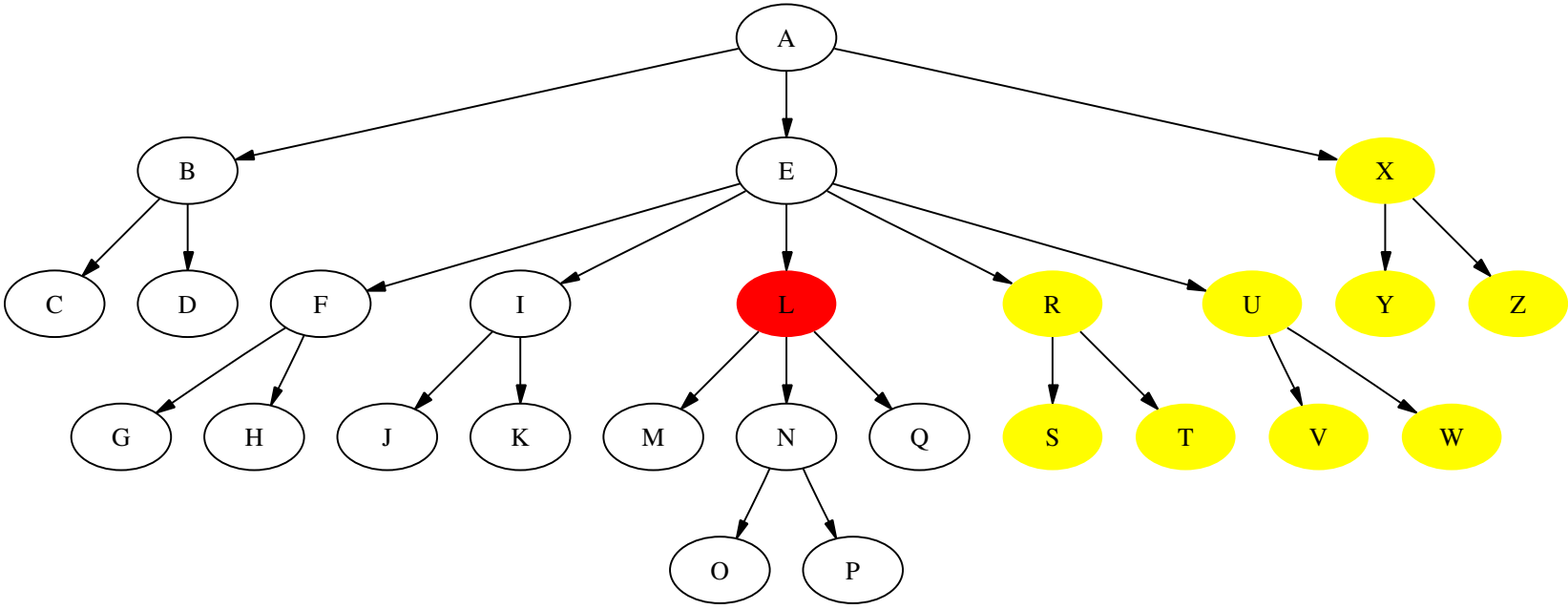

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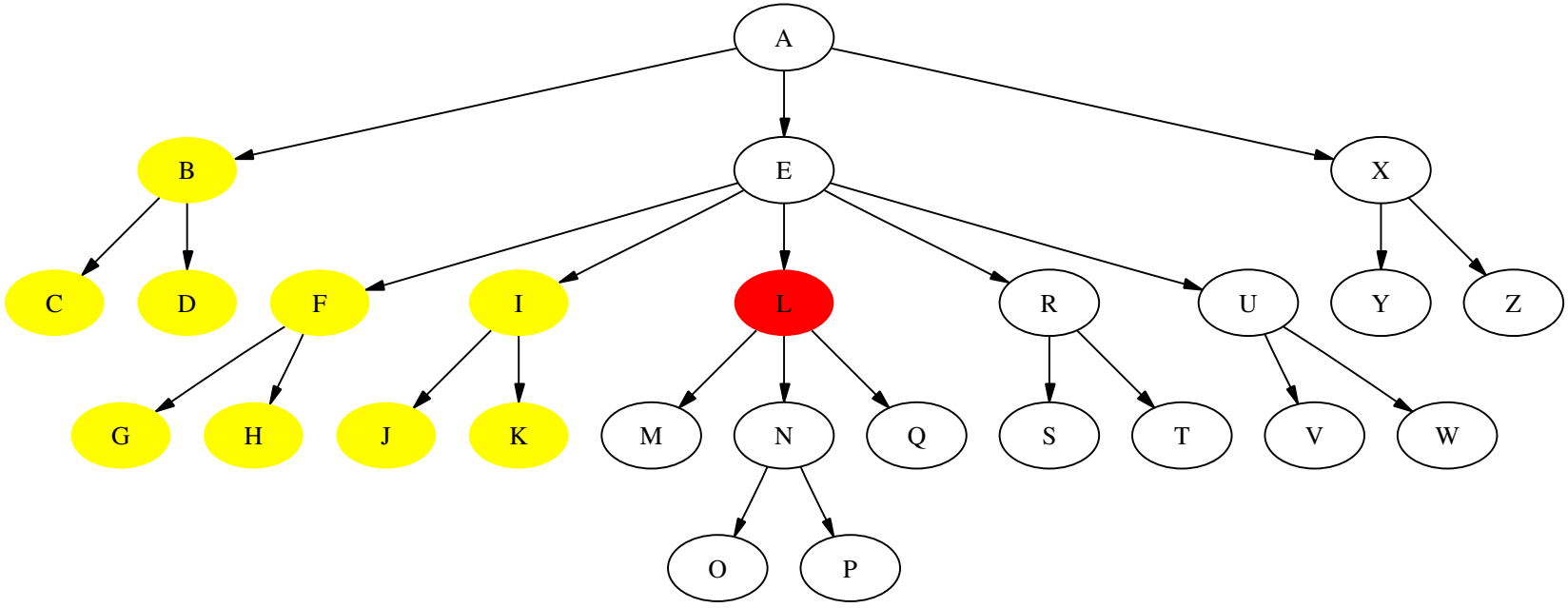

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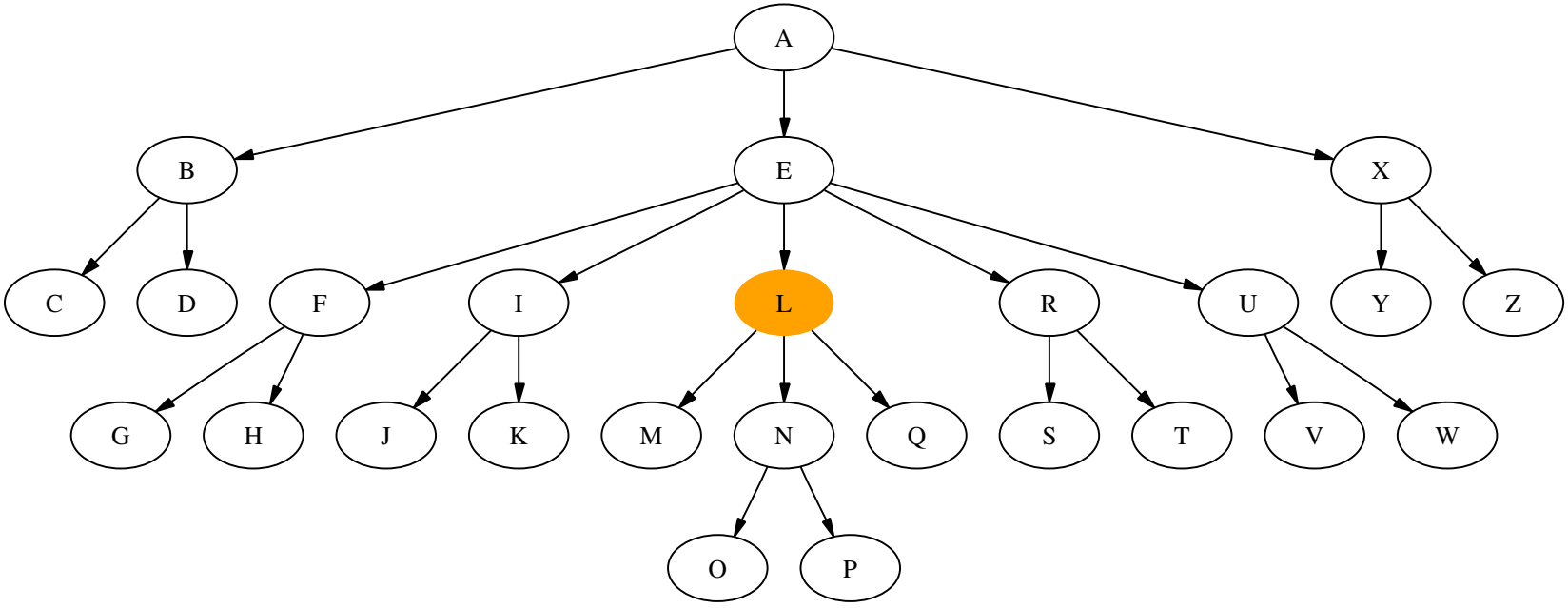

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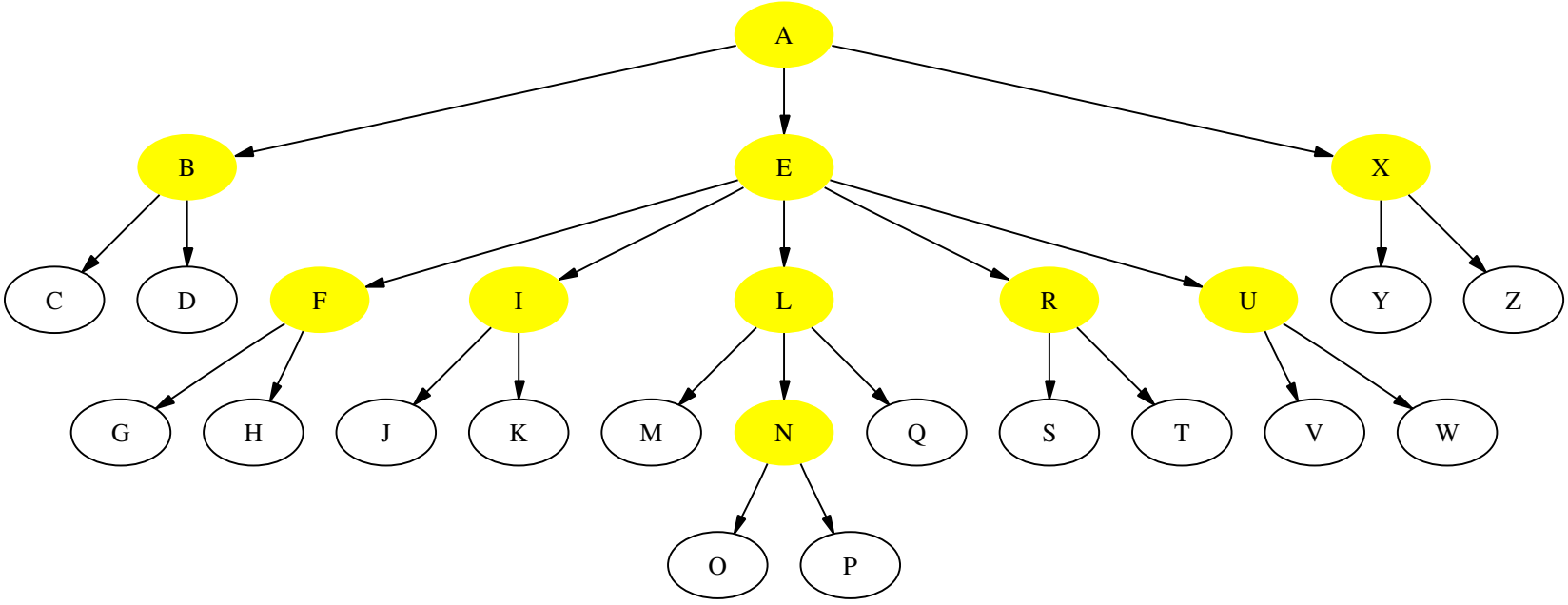

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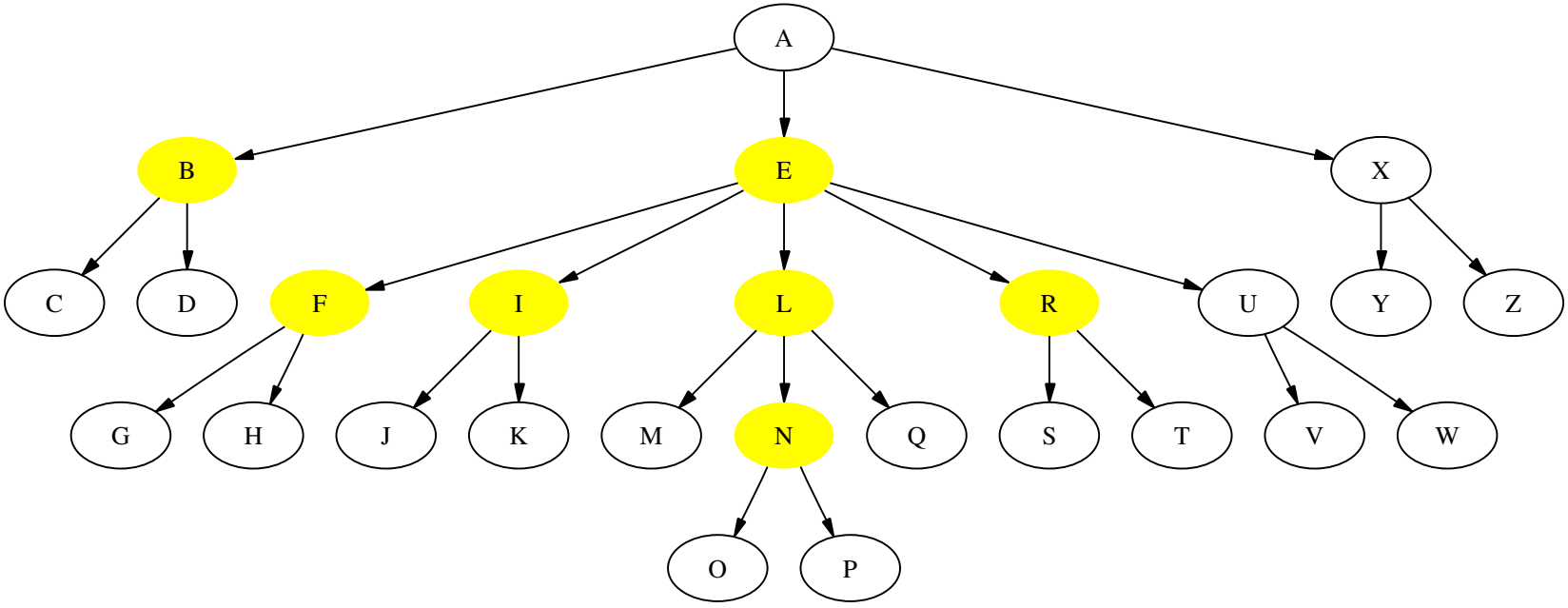

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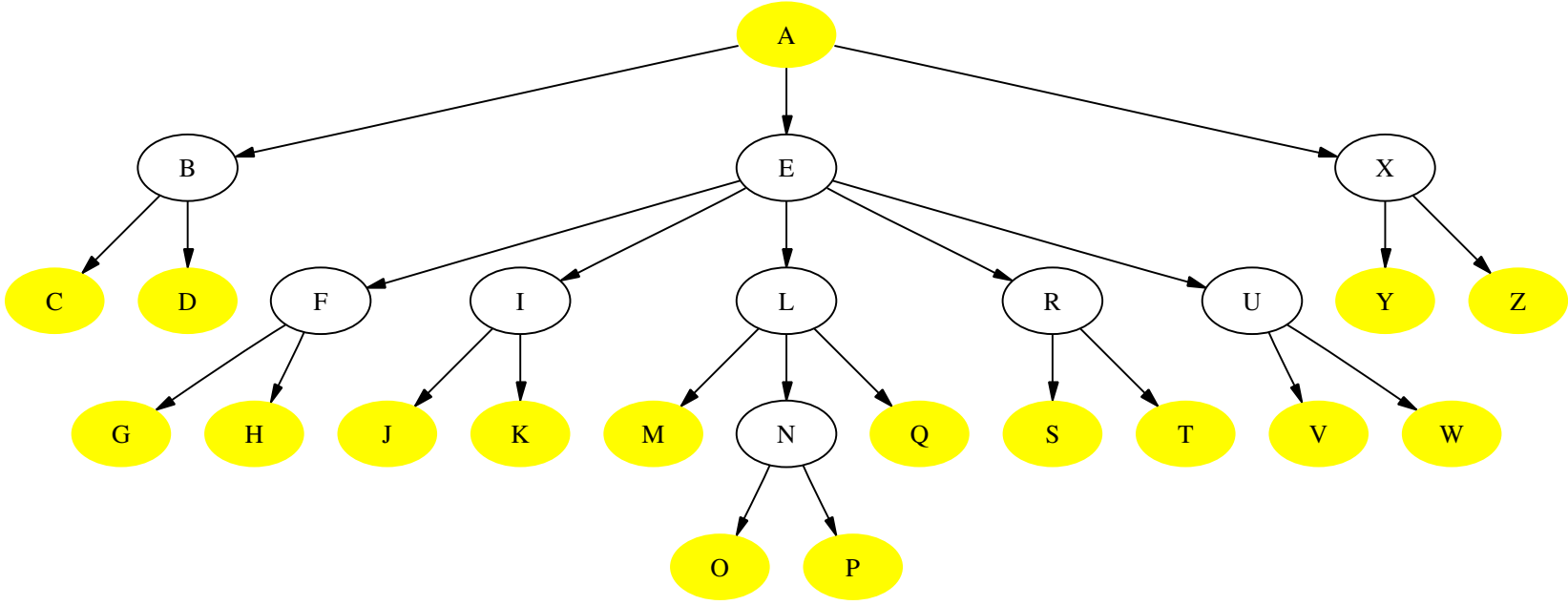

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- the use of functions (like contains(), position(), count(), id()) in filters.

# Example

1. Read the XPath queries contained in `q1.xp`, `q2.xp`, `q3.xp`;
2. run them against `biblio.xml` by using Saxon

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- XQuery inputs, processes, and outputs sequences (not sets of nodes like XPath);
- each item of a sequence is either an XML element or an atomic value (like a string or a number);
- XPath queries are used in XQuery. Their results are converted into sorted sequences according to the document order.

# Flowers on trees

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A sequence of variable bindings created by the for and let clauses of a FLWOR expression is called a tuple.

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- Order by clauses sort the tuples;
- Return clauses build the result of the expression.

# Example

1. Read the XQuery queries contained in `q4.xq`, `q5.xq`, `q6.xq`;
2. run them against `biblio.xml` by using Saxon

# More information

http://www.sci.unich.it/~francesc/xml