



**МОСКВА**  
11-12 мая 2012

**Application Developer Days**  
/\* Программисты всех платформ, общайтесь! \*/

# Укращение XML

Дмитрий Шабанов

eXist-db.org  
animotron.org

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Когда используешь XML, то **НЕ  
НАДО РАБОТАТЬ**

**XML НЕ РЕШИТ** Ваших проблем



## **XML — это формат представления данных и структуры**



# Стандарты

**договоренность достигнутая и  
принятая сообществом**



**XML, HTML5, URI, PNG ...**

**...**

**XQuery,**

**XSL, XSL-FO, XProc, ...**

**...**

**XForms, VoiceXML, ...**

**MathML, ...**



**DocBook**  
**DITA**  
**OpenDocument**  
**XACML**

....

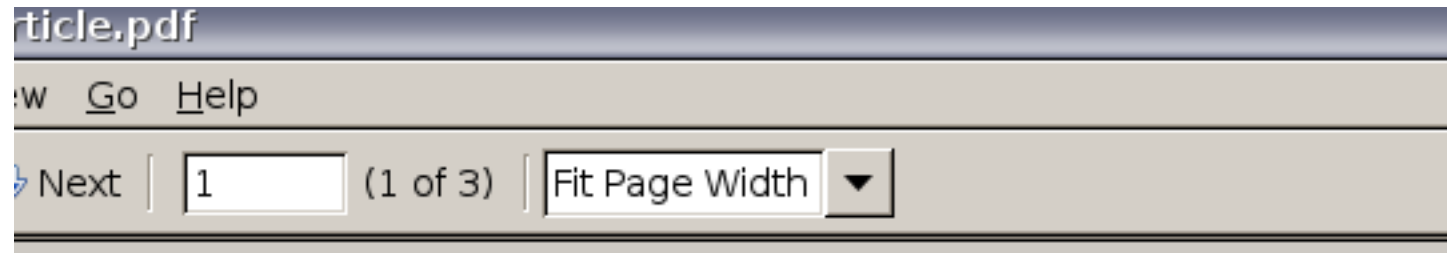


```
<article>  
  <title>Writing DocBook articles</title>  
  <artheader>  
    <abstract>
```

**This article describes how you can use DocBook to develop PDF documents and will cover tools you need to edit DocBook articles and tools to translate them to PDF documents.**

```
  </abstract>  
  <author>  
    <firstname>Egon</firstname>  
    <surname>Willighagen</surname>  
  </author>  
  <date></date>  
</artheader>  
</article>
```





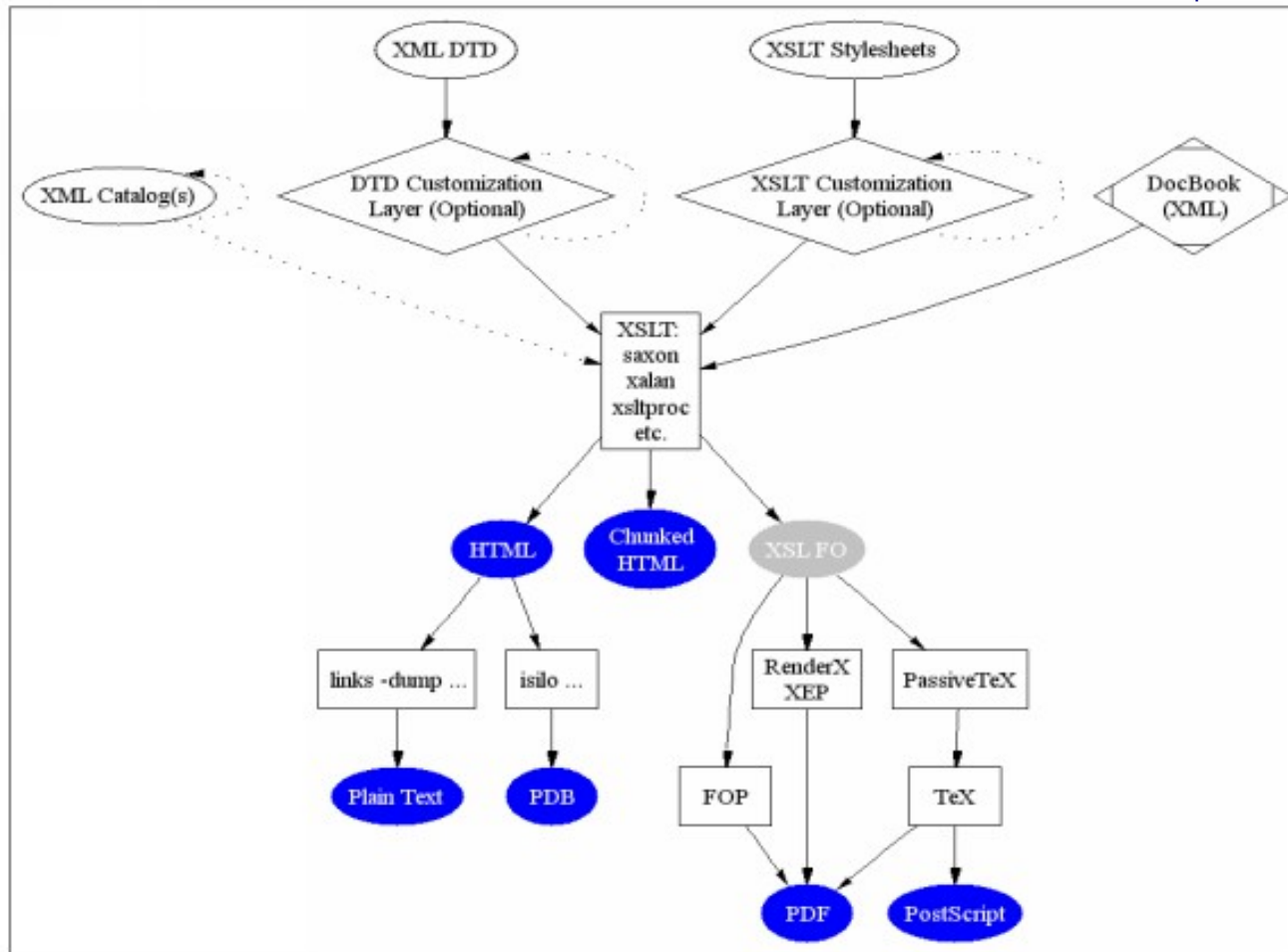
## Writing DocBook articles

**Egon Willighagen**

This article describes how you can use DocBook to develop PDF documents and cover tools you need to edit DocBook articles and tools to translate them to PDF documents.







DocBook XML Publishing (XSLT)



```
<xf:input id="first" ref="firstname">  
  <xf:label>Firstname:</xf:label>  
  <xf:hint>enter your firstname</xf:hint>  
  
  <bf:data  
    bf:readonly="false"  
    bf:required="true"  
    bf:type="string"/>  
  
</xf:input>
```



## XSLTForms

## BetterFORM



# Язык запросов

## XQuery



<PLAY>

<TITLE>The Tragedy of Hamlet, Prince of Denmark</TITLE>

...

<ACT>

<TITLE>**ACT I**</TITLE>

<SCENE>

<TITLE>SCENE I. Elsinore. A platform before the castle.</...>

...

<SPEECH>

<SPEAKER>**BERNARDO**</SPEAKER>

<LINE>Who's there?</LINE>

</SPEECH>

<SPEECH>

<SPEAKER>**FRANCISCO**</SPEAKER>

...



```
<html><head/><body>
{
  for $act in doc("hamlet.xml")//ACT
  let $speakers := distinct-values($act//SPEAKER)
  return
    <div>
      <h1>{ string($act/TITLE) }</h1>
      <ul>
        {
          for $speaker in $speakers
          return <li>{ $speaker }</li>
        }
      </ul>
    </div>
}
</body></html>
```



```
<html><head/><body>
  <div>
    <h1>ACT I</h1>
    <ul>
      <li>BERNARDO</li>
      <li>FRANCISCO</li>
      ...
    </ul>
  </div>
  ...
</body></html>
```



# Язык запросов и функциональный язык программирования

## XQuery





```
xquery version "3.0";

declare namespace ex =
    "http://exist-db.org/xquery/ex";

declare function ex:map($func, $list) {
    for $item in $list return $func($item)
};

(: Create an inline function and assign it to $f :)
let $f := upper-case#1
return
    ex:map($f, ("Hello ", "world!"))
```



```
map( function($x) { $x * $x }, 1 to 5 )
```

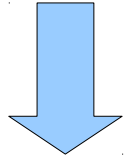


## Язык модификации данных XQuery Update Facility



# XQuery Update Facility

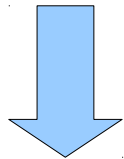
```
<root>  
  <message>Hello World</message>  
</root>
```



```
let $doc := doc('/db/test.xml')/root
```

```
let $update := insert node attribute foo {'bar'} into $doc
```

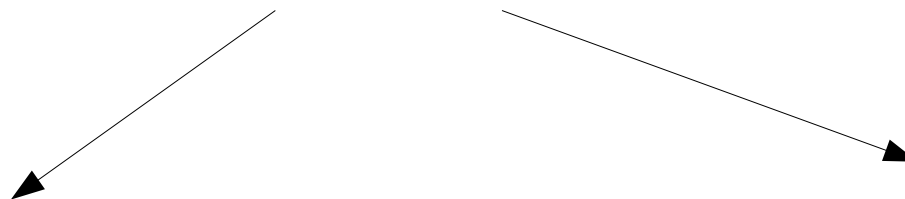
```
return $doc
```



```
<root foo="bar">  
  <message>Hello World</message>  
</root>
```



## XPath



## XQuery



## XQuery

## Update Facility

## XSL



## XSL-FO



**XQuery enables you to achieve high productivity  
in your projects**

**The Amazon XQuery Client Library was written  
with 80% less code than its equivalent written in  
Java**

**zorba-xquery.com**



Что почитать?



<http://en.wikibooks.org/wiki/XQuery>



Application Developer Days

**BaseX**

**Berkeley DB XML**

**eXist-db**

**DB2 9 with pureXML**

**MarkLogic**

**MonetDB/XQuery**

**MS SQL Server 2005**

**Saxon**

**Zorba**

<http://www.rpbouret.com/xml/ProdsNative.htm>





# Stream

**VS**

# Storage



**XML-enabled**

**VS**

**Native XML**



# 4th generation of databases

Juha Kontio



Application Developer Days



<http://exist-db.org/>



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**U.S. State Department Office  
of the Historian website**

**reBiND project**

**easyDITA**

**University of Heidelberg**

**University of Richmond**

.....

**Томский Политехнический Университет <http://tpu.ru>**

**ЗАО «МЦФЭР» <http://mcfr.ru>**



**I have successfully stored over 16,000,000 XML documents in eXist-db ... 1KB - 4KB each (~30Gb).**

**Querying was still possible..., so it must have been 3< seconds.**

**Adam Retter**



- **REST (URL Rewriting)**
- **WebDAV**
- **Security:**
  - **multiple realms**  
**LDAP, OAuth, OpenID**
  - **Unix permissions model (bitmap)**
  - **Access control list**
- **XQuery 3.0**
- **XSL (Saxon)**
- **EXPath: packaging & modules**



- **Content Extraction and Binary Resource Indexing**
- **Lucene**
- **JSON & HTML 5 serializer**
- **«Applications» concept**





**Быстро сострять  
форму для сбора данных  
и  
дальнейший анализ  
сохраненных данных.**



# Что можно сделать?



## Сбор и обработка данных



Application Developer Days

**Браузер читающий твиты используя механизм text-to-speech встроенный в браузер.**



**Разработать CMS  
или  
систему управления бизнес процессами  
для вашей организации.**



**<oXygen/> XML editor**

**eXide — web IDE**



# <oxygen/> XML editor



The screenshot displays the <oxygen/> XML Editor interface. The main window shows an XQuery script in the 'table.xq' file:

```
1 <price>{
2   for $prod in db2-fn:xmlcolumn('PRODUC
3     order by xs:decimal ($prod/descript
4     return
5       <product>{$prod/product/descrip
6 </price>
```

The 'Results' pane shows the output of the XQuery, displaying a list of products with their names and prices:

```
1 <price>
2   <product/>
3   <product>
4     <name>Ice Scraper, Windshield 5" Wide</name>
5     <price>3.99</price>
6   </product>
7   <product>
8     <name>Snow Shovel, Super Deluxe 26" Wide</name>
9     <price>49.99</price>
10  </product>
11 </product/>
12 </price>
```

The 'Table Explorer' pane shows two tables: 'EMP\_ACT' and 'CUSTOMER'. The 'EMP\_ACT' table is selected, and its data is displayed in a table view:

EMPNO [CHAR]	PROJNO [CHAR]	ACTNO [SMALLINT]	EMPTIME [DECIMAL]	EN
0	000010	AD3100	10	0.50
1	000070	AD3110	10	1.00
2	000230	AD3111	60	1.00
3	000230	AD3111	60	0.50
4	000230	AD3111	70	0.50
5	000230	AD3111	80	0.50
6	000230	AD3111	180	0.50
7	000240	AD3111	70	1.00

The 'CUSTOMER' table is also visible, showing customer information:

CID [BIGINT]	INFO [XML]
0	1000
1	1001
2	1002
3	1003
4	1004
5	1005

The status bar at the bottom indicates 'Transformation successful (0.0s)' and 'U+0000 6:9'.



exist-db.org/exist/eXide/index.html#

ACE - Ajax.org Clo... Java Neural Netw... Ищу установочн...

File Edit Navigate Application Help | Login

eXide

New Open Save Close Run Check

Syntax: XQue

Outline

ocal:add

```
new-document 1* new-document 2*
1 declare function local:add($lhs as xs:integer,
2 as xs:integer
3 {
4   $lhs + $rhs
5 };|
6
7 let $f := local:add(10, ?)
8 return
9   $f(32)
```

db

- codebin
- demo
- library
- public-repo
- resources
- shakes
- system
- wiki
- wiki.old
- wikidata
- xqdocs

Name	Permissions	Owner	Group	Last Modified
codebin	rwxr-xr-x	admin	biblio.users	Apr 17 2012 14:5...
demo	rwxrwxr-x	admin	dba	Apr 10 2012 23:2...
library	r-xr-xr-x	editor	biblio.users	Apr 11 2012 00:0...
public-repo	rwxr-xr-x	admin	dba	Feb 14 2012 15:2...
resources	rwxr-xr-x	admin	dba	Feb 13 2012 20:2...
shakes	rwxr-xr-x	admin	biblio.users	Apr 3 2012 11:29:33
system	rwxr-xr-x	SYSTEM	dba	Feb 13 2012 20:2...
wiki	rwxrwxr-x	editor	wiki	Apr 16 2012 10:0...
wiki.old	rwxrwxr-x	editor	editors	Apr 16 2012 10:0...
wikidata	rwxrwxr-x	editor	wiki	Apr 8 2012 16:56:45
xqdocs	rwxr-xr-	admin	guest	Mar 30 2012 00:5...

Selection:

open cancel

Showing results 1 to 1 of 1



**X**Forms  
**R**EST  
**X**Query





## RESTXQ

Adam Retter's  
XML Prague 2012 paper

declare

```
%rest:path("/say/hello/{$name}")
```

```
function local:say-hello($name) {  
  <hello>{$name}</hello>  
};
```



## Database next stage: Applications container



# Вопросы и ВОЗМОЖНО даже ответы



Пожалуйста, **поставьте  
оценку** моему докладу.

**Ваше мнение очень важно.**

**Спасибо!**

