

28

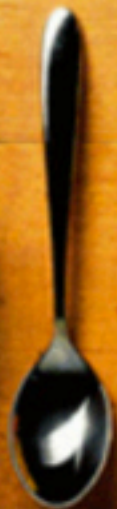
msec

XQuery 3 Rocks

<http://www.zorba-xquery.com>

William Candillon - FOSDEM 2012











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william.candillon@28msec.com



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Zorba

The XQuery Processor

-  Documentation
-  Live Demo
-  Modules
-  Tools
-  Blog
-  Code
-  Download

Process the Web's Vocabularies



High Performance XML Processing

XQuery powers businesses that are leveraging XML dialects



All Flavors Available

General purpose XQuery processor - written in C++. Complete family of W3C specifications: XPath, XQuery, Update, Scripting, Full-Text, XSLT, XQueryX, and more.



Rich XQuery Library

Web mashups, cryptography, image processing, geo projections, emails, data cleaning... there is a module for that.



Process the Web's Vocabulary

High Performance XML Processing

All Flavors Available

Rich XQuery Library

Pluggable Store

Runs Everywhere








Developer Friendly Tools

Fun & Productive

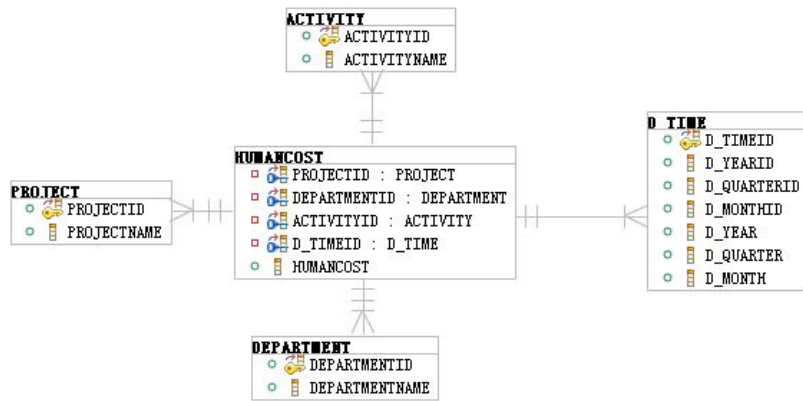
XQuery powers businesses that are leveraging XML dialects
 General purpose XQuery processor – written in C++. Complete family of W3C specifications: XPath, XQuery, Update, Scripting, Full-Text, XSLT, XQueryX, and more.
 Web mashups, cryptography, image processing, geo projections, emails, data cleaning... there is a module for that.
 Seamlessly process XML data stored in different places.
 Main memory, mobile devices, browsers, disk-based, or cloud- based stores.
 Available on Windows, Linux, and Mac OS.
 Bindings available for 6 Programming Languages: C++, C, PHP, Ruby, Java and Python.
 Benefit from a rich ecosystem of tools.
 Eclipse plugins, command-line interface, and debugger.
 XQuery unifies development for all tiers; database, content management, application logic, and presentation.
 Zorba is distributed under Apache 2 License.



Zorba
The XQuery Processor

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Harnessing Flexible Data

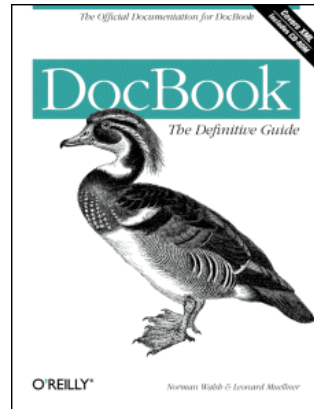


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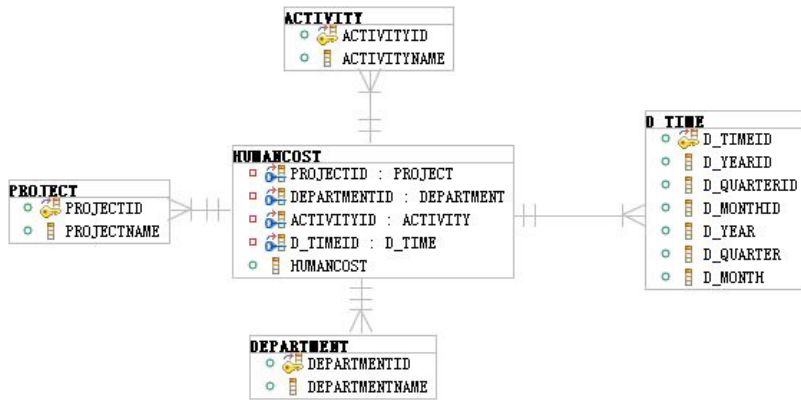
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      "owner": "354683133120"
    }]
  }
}
    
```

```

<kml>
  <Placemark>
    <name>Simple placemark</name>
    <Point>
      <coordinates>-122.0822035425683,37.422289901
        40251,0</coordinates>
    
```



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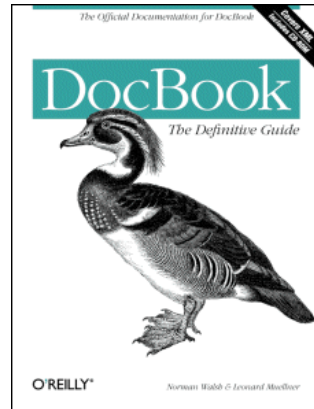


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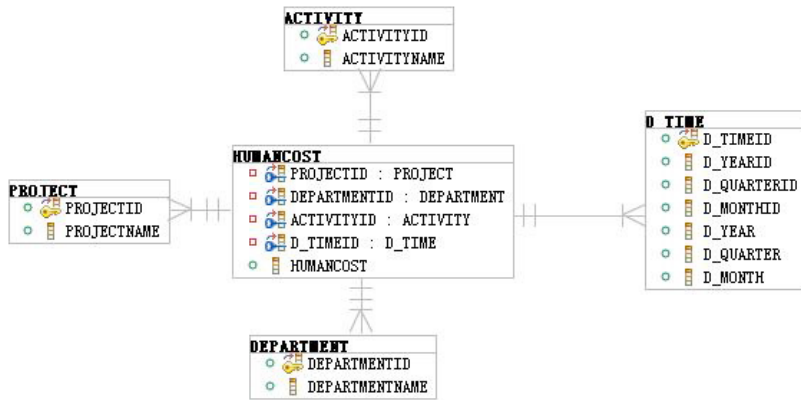
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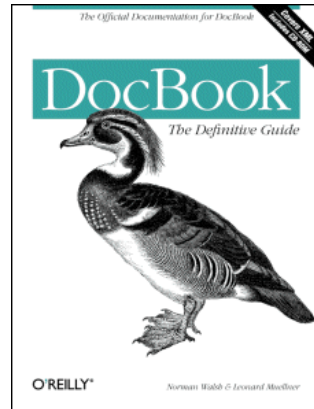


```

{
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    "pages": 94276,
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Meet XQuery

XQuery

- Family of Specification from w3c
- Most ~~Complex~~ Complete Data Model
- Talks Natively to Web
- Query, Store, Index, Update, Full-Text
- Unified Framework
- Optimization & Parallelization

Meet Zorba



Open Source XQuery Processor

Contributors: Oracle, 28msec, FLWOR



All Flavors Available



Runs Everywhere



Rich Module Libraries



Developer Tools

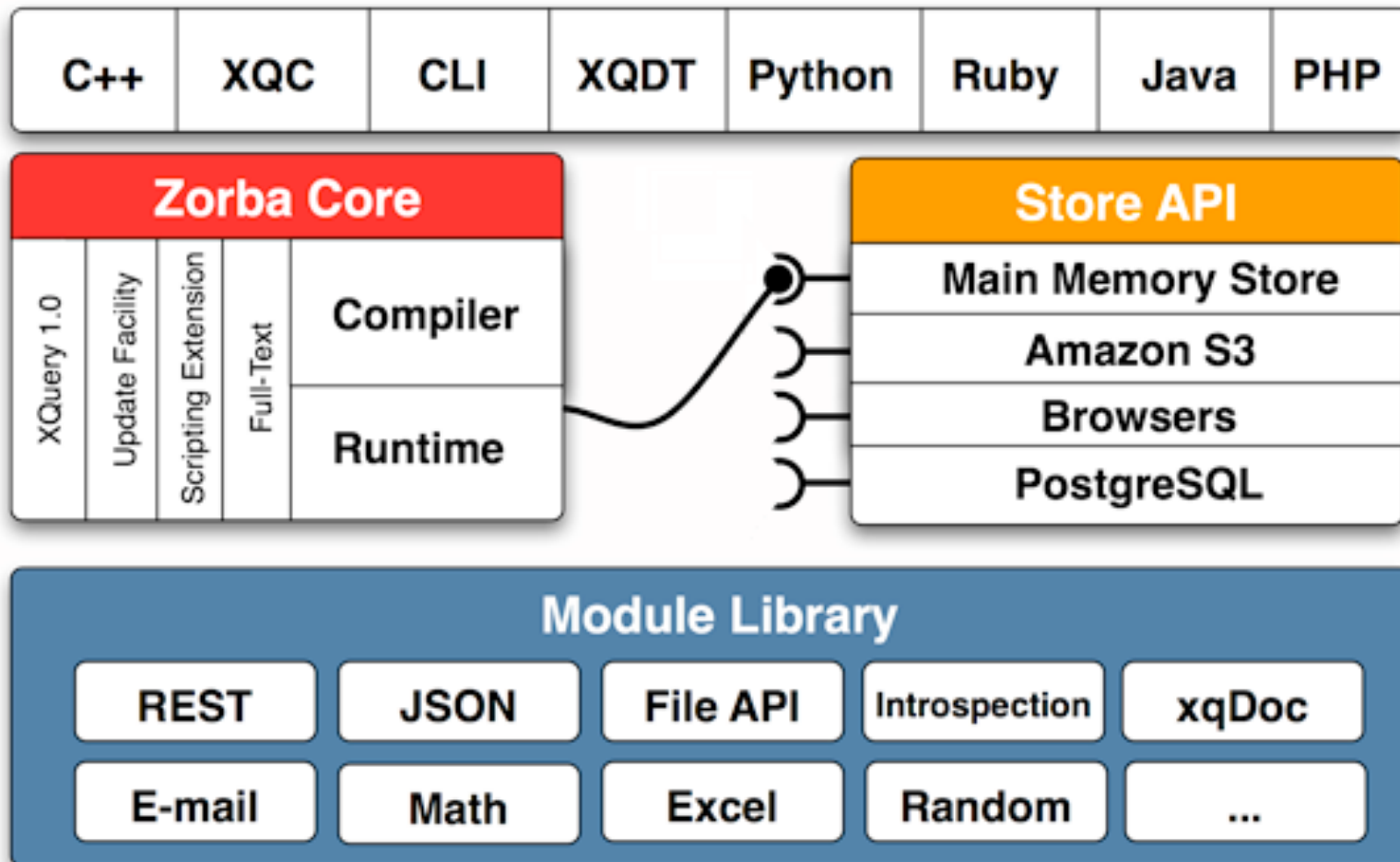


Pluggable Store



Fun & Productive

Zorba



```
<div id="entries">{  
  for $entry in $entries  
  let $title := string($entry/@title)  
  where $entry/@author = "anonymous"  
  order by $entry/@datetime  
  return <h1>{$title}</h1>  
}</div>
```

```
insert node <entry>Hello World</entry>  
into $entries
```

```
let $x := <m>breakfast of champions</m>  
return $x contains text "meal"  
using thesaurus at  
    "http://wordnet.princeton.edu"  
relationship "narrower term"
```

```
let $handler :=  
  function($request){  
    let $world := $request/text()  
    return  
      <h1>Hello {$world}!</h1>  
  }  
return mongoose:start($handler, 80);  
  
mongoose:cin();
```

```
declare  
%http:get("/hello/{$world}")  
function html:hello($world)  
{  
    <h1>Hello {$world}!</h1>  
};
```



XQuery Guestbook_{Beta}

28msec

Recent Entries

Movie Quotes
"Very Nice" - Borat

Movie Quotes
I Scream, You Scream, We All Scream for Ice Cream!

Movie Quotes
"If I Quit Now, They Win"

Add a new entry:

Name:

Text:

Post Entry

Client

```
<script type="application/xquery">
declare sequential function local:submit($loc,
$evtObj)
{
    let $name      := s:id("author")/data(@value)
    let $text      := s:id("text")/text()
    return
        guestbook:add($name, $text);
};

b:addEventListener(s:id("submit"),
                  "onclick",
                  local:submit#2);

guestbook:list();
</script>
```

Server

```
declare sequential function guestbook:add(
    $author as xs:string, $entry as xs:string
){
    let $date      := fn:current-dateTime()
    let $entry     := <entry author="{ $author }"
                    datetime="{ $date }">{ $text }</entry>
    return
        xqddf:insert-nodes-last($entries, $entry);
};

declare sequential function guestbook:list() {
    <entries>{
        xqddf:collection($entries)
    }</entries>;
};
```


Client

```
<script type="application/xquery">
declare sequential function local:submit($loc,
$evtObj)
{
    let $name      := s:id("author")/data(@value)
    let $text      := s:id("text")/text()
    return
    guestbook:add($name, $text);
};

b:addEventListener(s:id("submit"),
    "onclick",
    local:submit#2);

guestbook:list(),
</script>
```

Server

```
declare sequential function guestbook:add(
    $author as xs:string, $entry as xs:string
){
    let $date      := fn:current-dateTime()
    let $entry     := <entry author="{ $author }"
        datetime="{ $date }">{ $text }</entry>
    return
        xqddf:insert-nodes-last($entries, $entry);
};

declare sequential function guestbook:list() {
    <entries>{
        xqddf:collection($entries)
    }</entries>;
};
```

Seamless Invocations



XQuery Guestbook_{Beta}

28msec

Recent Entries

anonymous

Fish are friends, not food #nemo

Add a new entry:

Name:

Text:

Post Entry



XQuery Guestbook_{Beta}

28msec

Recent Entries

anonymous

Fish are friends, not food #nemo

Movie Quotes

"Your Mother Was a Hamster and Your Father Smelt of Elderberries!" #montypython

Add a new entry:

Name:

Text:

Post Entry



XQuery Guestbook_{Beta}

28msec

Recent Entries

Movie Quotes

"Your Mother Was a Hamster and Your Father Smelt of Elderberries!" #montypython

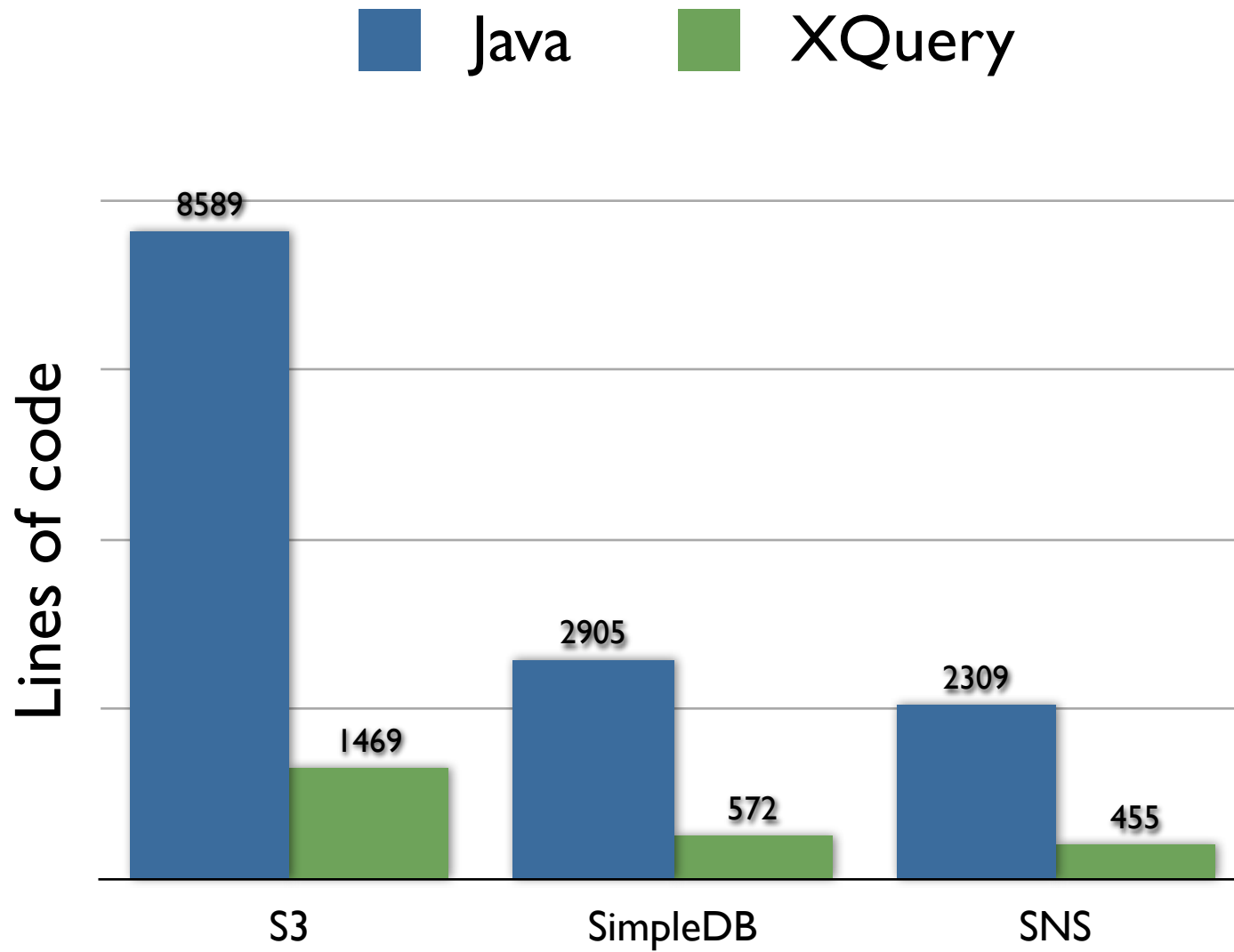
Add a new entry:

Name:

Text:

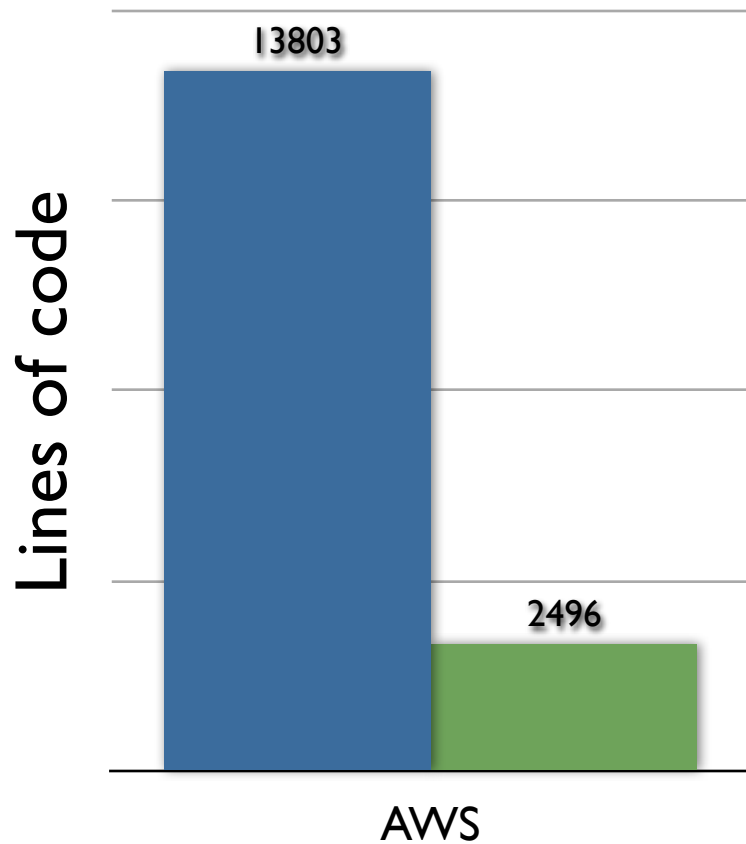
Post Entry

AWS Libraries (2011)



AWS Libraries (2011)

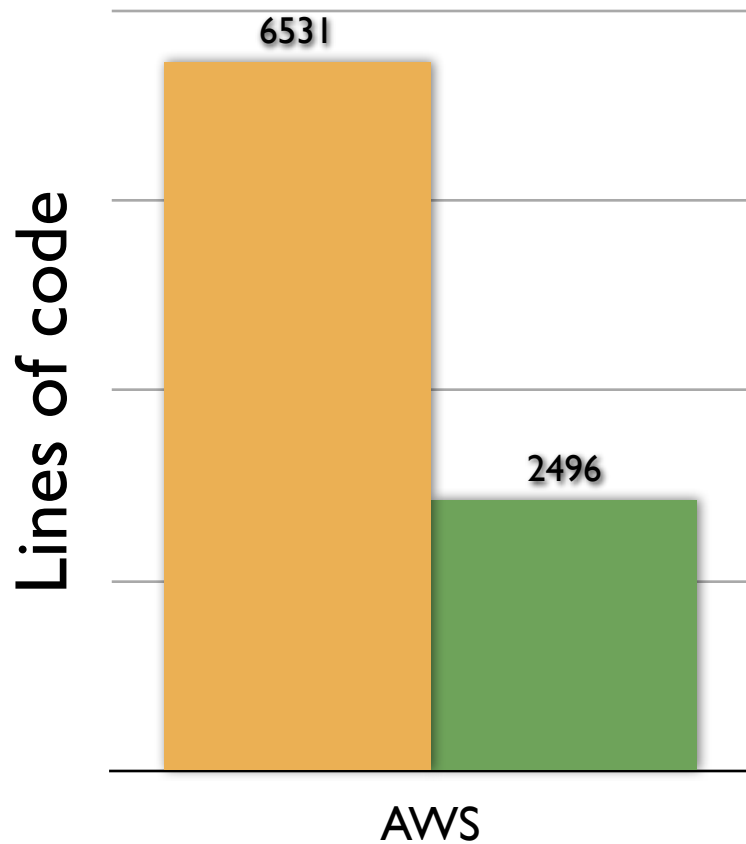
■ Java ■ XQuery



Lines of Codes
- 80%

AWS Libraries (2011)

■ PHP ■ XQuery



Lines of Codes
- 62%

```
<html>
<head>
<script type='text/javascript'>
function buy(e) {
    newElement = document.createElement("p");
    elementText = document.createTextNode
        (e.target.getAttribute(id));
    newElement.appendChild(elementText);
    var res = document.evaluate(
        "//div[@id='shoppingcart']",
        document, null,
        XPathResult.UNORDERED_NODE_SNAPSHOT_TYPE,
        null);
    res.snapshotItem(0).appendChild("newElement");}
</script>
</head>
<body>
<div>Shopping cart</div>
<div id="shoppingcart"></div>
<%
// Code establishing connection
ResultSet results =
statement.executeQuery ("SELECT * FROM PRODUCTS");
while (results.next()) {
    out.println("<div>");
    String prodName = results.getString(1);
    out.println(prodName);
    out.println("<input type='button' value='Buy'");
    out.println("id='"+prodName+"'");
    out.println("onclick='buy(event)'/>").
    out.println("</div>");
}
results.close();
// Code closing connection
%>
</body>
</html>
```

HTML

JavaScript

XPath

Java

SQL


```

<html xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <script type='application/xquery'>
      declare updating function local:buy($evt, $obj) {
        insert node <p>{$obj/@id}</p> as first
          into //div[@id="shoppingcart"]
      };
      b:addEventListener(b:dom()//input,
        "onclick",
        xs:Qname("local:buy"));
    </script>
  </head>
  <body>
    <div>Shopping cart</div>
    <div id="shoppingcart">{
      for $p in doc("products.xml")//*:product
      return
        <div>
          {$p/*:name}
          <input type='button'
            value='Buy'
            id='{ $p/*:name}' />
        </div>
    }</div>
  </body>
</html>

```

XQuery Everywhere

```
let $stats := [ { "response_time":  
0.05 ... } ... ]  
for $stat in j:values($stats)  
let $url := $stat("http_action")  
order by $url  
return  
{  
  "url": $url,  
  "avg": avg($stat("response_time"))  
}
```

```
$zorba -q jsoniq.xq -f  
{ "url" : "GET /docs/spec/en-US/html-  
single/index.html", "avg" : 0.05 }
```

Take away

- **Powerful Data Model**
- **Flexible Programming Model**
- **Productivity**
- **Performance**



28 msec

Thank you!

