

XQuery vs. The World

Nuno Job

nunojob.com and @dscope (twitter, github)

Dynamic Languages Conference 2011



← portugal, new york, toronto, san francisco, london →

83

08

09

10

11



IBM

past.

■ MarkLogic™

present.

stuff I like



open source



HELLO
my name is

Nuno
@dscape

■ MarkLogic®

unstructured
schema-less*
easy evolution.
xml or json.

also stores:
text and binaries

c++ core
~ pb scale



features
acid, backups
replication, query
language (XQuery).

native search
a database built
on a search engine?

!! stop shredding your data
• start storing data as is

no tables, rows, columns
thinkin' documents
uris? looks like a filesystem

* they have this universal index thing.
an inverted index that is structure aware

XQUERY?

Just a query Language for XML?
Right?

NO NO NO

NO NO NO

NO NO NO

Ok, ok...

YES, but...

SQL Like?

```
for $name in //json:name  
let $first :=  
    fn:tokenize($name, " ")[1]  
where $first != 'chad'  
return $name
```


but...

Literals

```
<names> {  
  for $name in //name  
  return  
    <name>{$name}</name>  
} </names>
```

Functions

```
declare function local:hello($name) {  
  concat("Hello ", $name)  
};
```

function

```
local:hello("Edinburgh!")
```

main

High Order Functions

```
declare function fold($f, $z, $l) {  
  if(empty($l))  
  then $z  
  else  
    fold(  
      $f,  
      xdmp:apply($f, $z, head($l)),  
      tail($l))  
}
```

<https://github.com/dscape/dxc>

Meta Programming

```
mustache:render( '  
    Hello {{name}}!  
    You have just won {{value}} usd!  
    {{#in_ca}} Well,  
        {{taxed_value}} usd,  
        after taxes.  
    {{/in_ca}} ',  
    '  
    { "name": "Chris",  
      "value": 10000,  
      "taxed_value":  
        10000 - (10000 * 0.4),  
      "in_ca": true }  
    '
```

<https://github.com/dscape/mustache.x9>

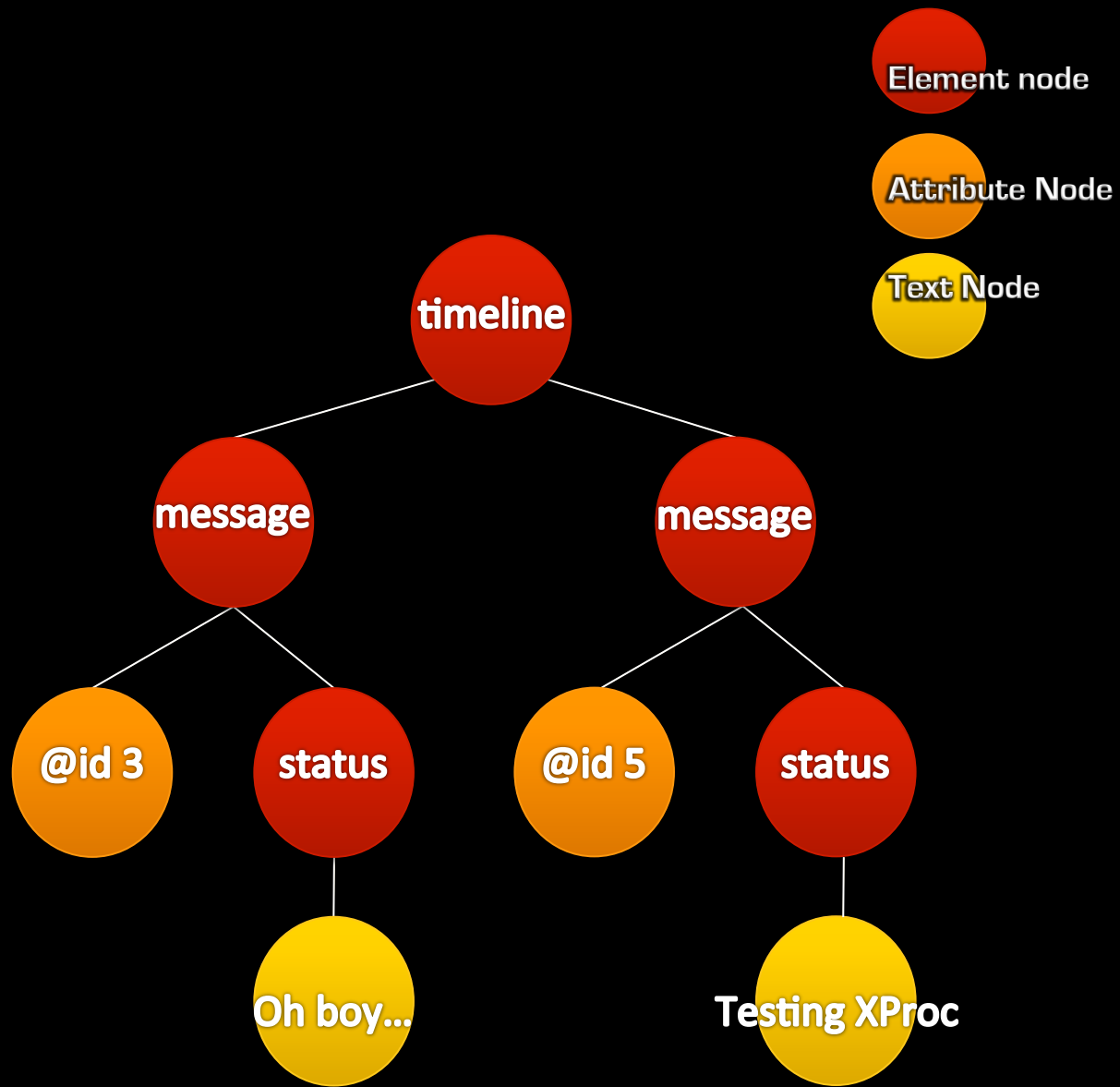
Data Model



zero or more items

item is

either an atomic type (like string or integer)
or a tree



Navigation language (XPath)

/user

child axis

[sex="male"]

predicate

//name

descendants

/text()

node test

similar to file paths but you can have repeated element in xml, unlike filesystems where folders are unique

Side Effect Free

```
if($user)  
then ($user)  
else ()
```

** actually this is the same as just \$user*

Great for querying documents

```
( for $song in /top-song
  let $artist    := $song/artist
  let $recorded  := $song/recorded
  let $london    :=
    geo:latLong ("London")
  where $artist = "Queen"
    and not($recorded=$london)
  order by $song/weeks/@last descending
  return song:render($song)
) [1 to 10]
```

**JavaScript is to JSON
like XQuery is to XML**

*and there are plenty of problems for which
xml is a better fit*

QUERIES PARSERS

TEMPLATING ENGINES

WEB APPS APIS URL

REWRITERS SCRIPTS

FRAMEWORKS MOBILE

ENTERPRISE APPS

BROWSER LANGUAGES

XQuery

A fully fledged dynamic functional
programming language

also a query language for xml...

disagree?

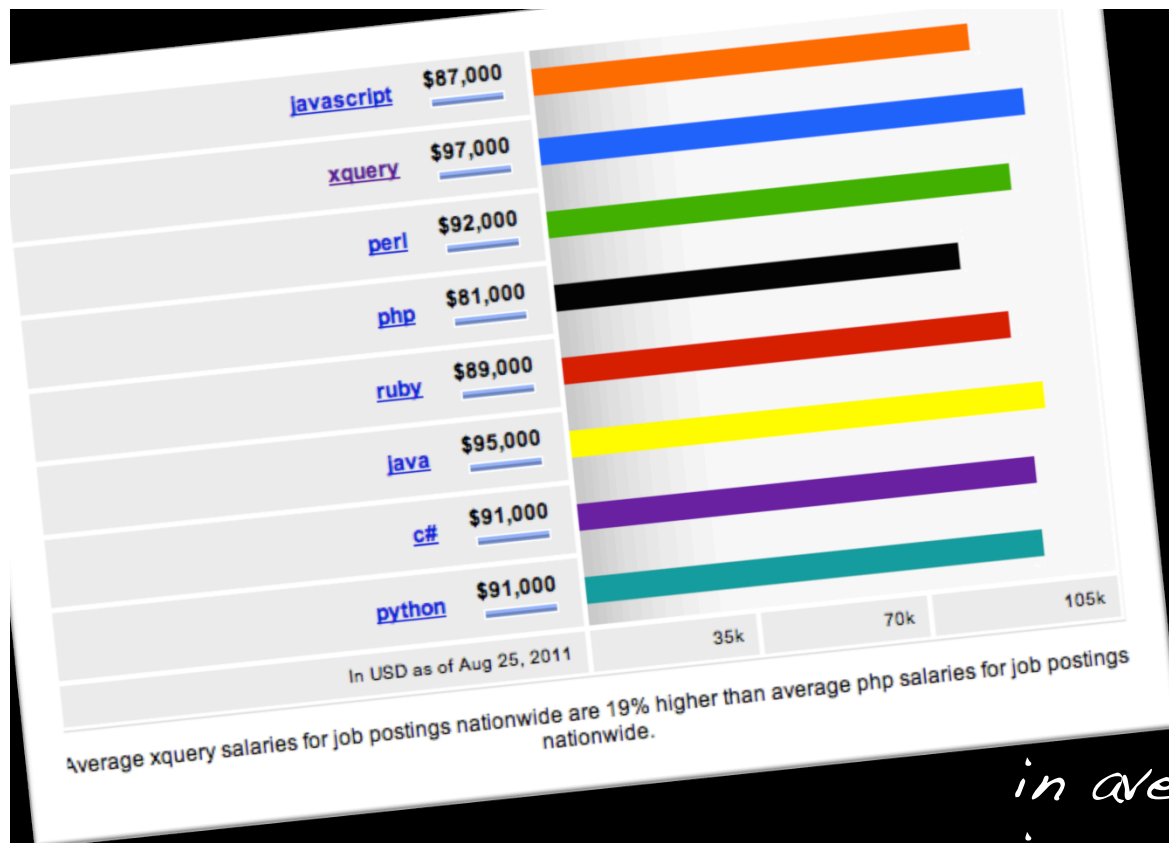
<http://bit.ly/sqlfordocs>

**STILL WANT YOUR DOCUMENT
DATABASE TO SUPPORT SQL
AND ONLY SQL?**

WHY OH WHY?



Little know facts



in average (in the uk) there is one job posting in indeed for each two people that state they know xquery in linkedin

WELL PAID

HIGH DEMAND, LOW SUPPLY

<http://writings.nunojob.com/slides/2011-bbuzz.pdf>
<http://vimeo.com/26777627>

that looks fun

**WORKING ON PB SCALE DEPLOYMENTS
WITH ACID TRANSACTIONS?**

ANYONE USING IT?

go check our customer list. it's likely you'll be surprised to find out you use marklogic after all

Yup!

free download & fair use
<http://developer.marklogic.com>

**DID I FORGOT TO MENTION THE COOL
STUFF WE DO AT MARKLOGIC?**

XQuery in one slide

W3C Open Standard

Standalone programming language

Data Focused

Single Tier Development

Rich API

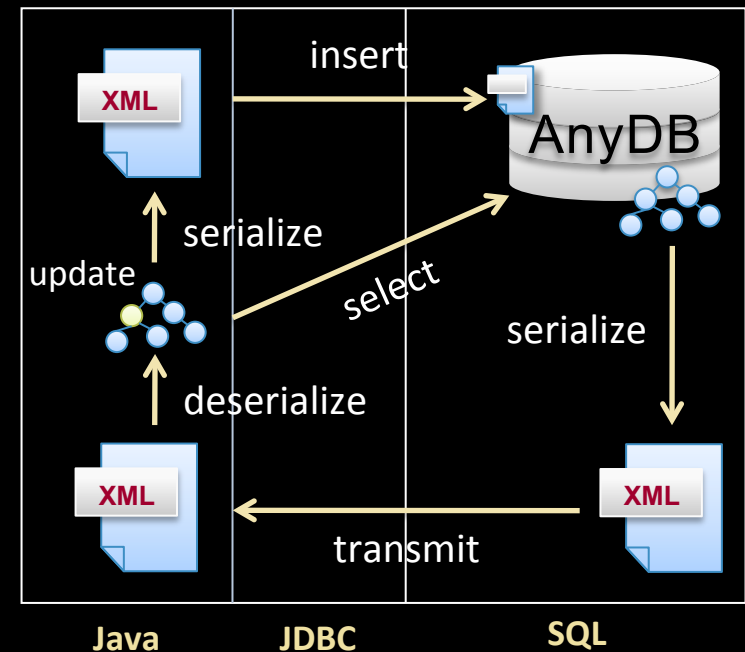
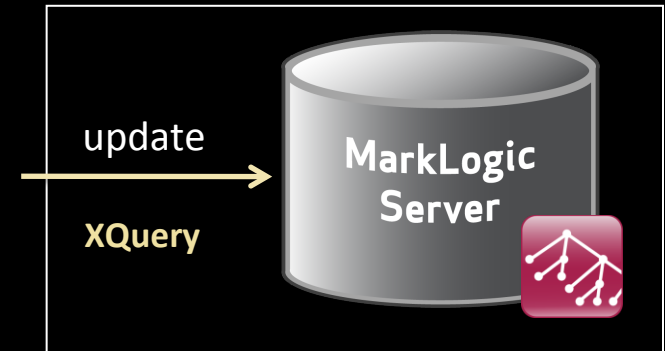
*Regular expressions,
strings, sequences, etc...*

*Extensible with your own
libraries*

Side-effect free

Great for concurrency

XDM



learn something
new every day

Thank you! Questions?

@DSCAPE