

Orbeon Forms

An XML Form Processing and Pipeline Engine

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Web Page Generation

1. Web browser sends request to web server using HTTP
2. Web server processes request
 1. Retrieves data
 2. Generates HTML
3. Server returns HTML back to web browser
4. Web browser displays result to user

Types of Web Pages

- **Static**
 - Content does not change from request to request
 - Modify HTML file to effect change

Types of Web Pages

- Dynamic
 - Content can change with or without user input
 - Server-side scripts (shtml - server-side javascript)
 - Common Gateway Interface (CGI)
 - Traditional languages like C/C++ or Java
 - Scripting languages like Perl or PHP
 - Sources of data
 - Text files
 - External programs
 - Database calls

User Interaction

- Input Forms
 - Text fields
 - Check boxes
 - Radio buttons
 - menu/select boxes
- Formatting output
 - Tables
 - Forms
 - Stylesheets

Server-side Validation

- CGI processes input and returns results
 - Warning/Error summaries
 - Full validation of input
 - Taylor results based on input
 - But slow

Thin vs. Fat Clients

- Example: Java Applets
- Fat Clients
 - Still requires connection to server but can perform more functions without having to contact the server each time
 - May require plug-in's or JVM
 - Slower to load
- Thin Clients
 - Loads faster but limited in scope

Partially Interactive Web Pages

- Client-side JavaScript
 - Manipulates the HTML page on the fly using Document Object Model (DOM). Browser re-renders the page upon request.
 - Allows for form validation
 - Trivial field validation
 - Enable submit button when form ready to be sent
 - Provides for minor changes to the layout
 - based on values in the web page
 - Expand/Collapse sections, etc

Fully Interactive Web Pages

- Client-side JavaScript connects to Server in the background to provide
 - Full Input Control
 - Field Validation
 - Auto-completion
 - Complex data such as dates
 - Full Output Control
 - Change values on the fly
 - Expand/Collapse sections (tabs and menus)
 - Sorted tables

Asynchronous JavaScript and XML

- Combines many web technologies
 - HTML or XHTML and CSS for presentation
 - DOM for dynamic display and interaction with data
 - XML for data interchange
 - XSLT for manipulating XML
 - JavaScript is the glue
- Data not necessarily in XML
- Connection to server not necessarily async

Ajax Development Requirements

- Ajax Frameworks

- Direct frameworks

- Requires expertise in HTML, CSS, JavaScript, Ajax and framework APIs

- Indirect frameworks

- High-level language compiled into JavaScript
- Still requires expertise in HTML & CSS

- Component frameworks

- Pre-built components such as grids, tabs and buttons

What is XForms?

- Next generation of HTML/XHTML forms
- XForms is an XML format for the specification of
 - data processing model
 - user interfaces for the XML data
- Builds upon the following XML technologies
 - XML Schema for data validation (xsd)
 - XSLT for transforming XML docs
 - XPath for navigating an XML document
 - XForms designed to be extended using XBL

XForms

- Model-View-Controller approach
 - One or more models describing the data, constraints and submissions
 - View describes what controls appear, grouping, CSS used to control appearance
 - Define rules which control how the user will navigate the website as well as how data will be processed

Orbeon Forms

<http://www.orbeon.com>

Orbeon Forms is an open source standards based forms solution to build and deploy fully interactive web forms

- Standards-based (XForms)
- Open source (LGPL)
- Based on Ajax technology
- Works in standard web browsers
- Does not require special software or plugins on the client
- Runs on any operating system that supports a standard Java Servlet container such as Apache Tomcat

Orbeon Forms

Orbeon Forms is an open source standards based forms solution to build and deploy fully interactive web forms

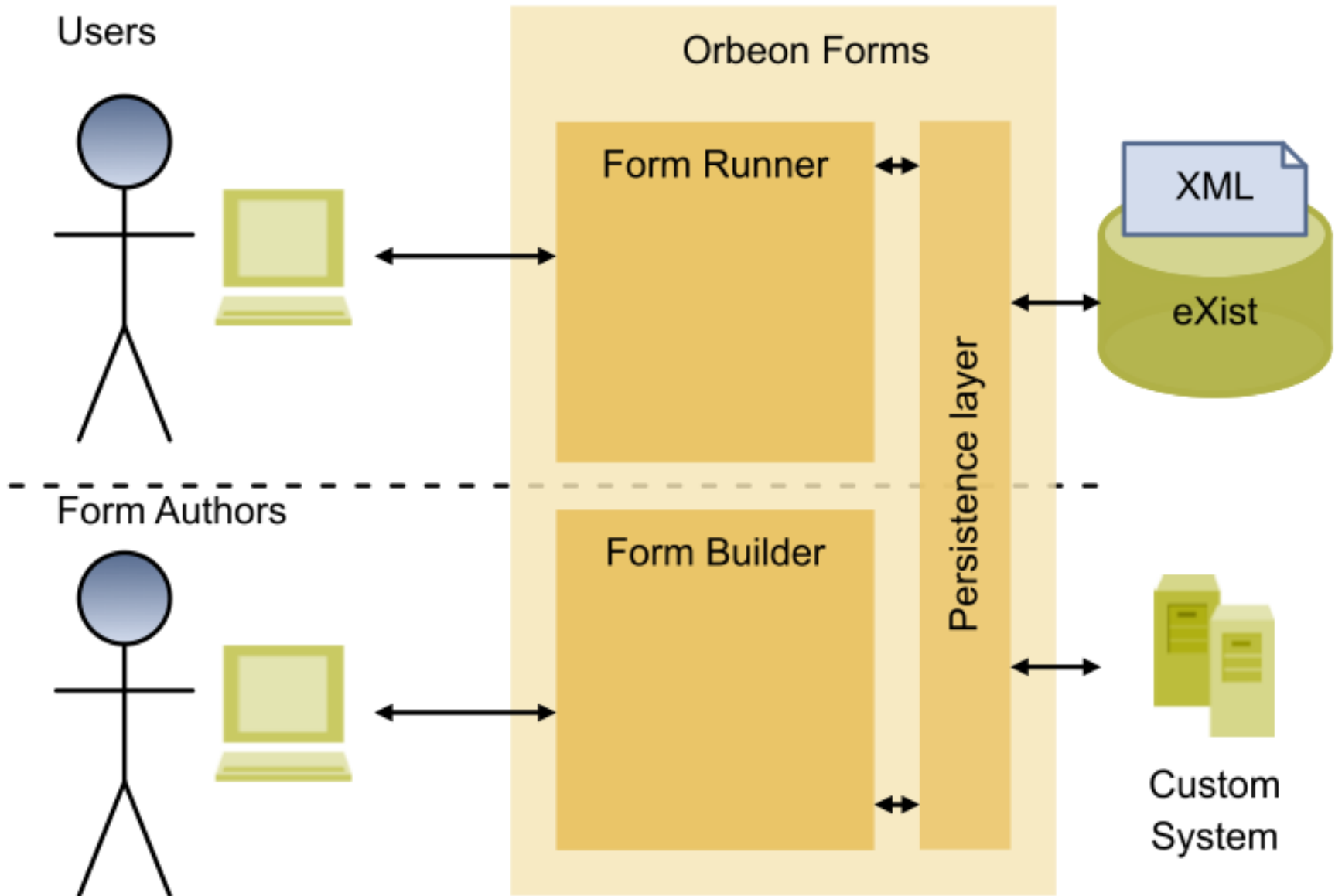
- As-you-type validation
- Optional and repeated sections
- Error summaries
- Images and attachments
- Auto-completion
- Dialogs, trees and menus
- Tabs and accordians
- Sorted tables with paging and adjustable columns
- Custom controls

Orbeon Forms

Orbeon Forms features

- Web-based visual form designer
- Runtime environment that implements
 - W3C XForms specification
 - XML Pipeline processing engine
- XForms Instance Inspector
- Handles cross browser issues

Orbeon Forms Architecture



Typical Orbeon Forms Application

Filetype	Purpose
page-flow.xml	maps URLs to views, pipelines, etc
view.xhtml	Defines model, forms, layout, etc
data.xml	XML Data
schema.xsd	XML Schema Definition -- used for validation
process.xpl	XML Pipeline -- Perform actions, read/write files, call external programs, access database, etc.
translate.xsl	XML Style sheet -- translate data to another XML document.

Hello World

```
<xhtml:html xmlns:xs-.....>
<head>
  <title>XForms Hello</title>
  <xforms:model>
    <xforms:instance>
      <first-name xmlns=""/>
    </xforms:instance>
  </xforms:model>
</head>
<body>
  <p>
    <i>This example is described in details in the <a href="/doc/intro-tutorial">Orbeon Forms Tutorial</a>.</i>
  </p>
  <p>
    <xforms:input ref="/first-name" incremental="true">
      <xforms:label>Please enter your first name:</xforms:label>
    </xforms:input>
  </p>
  <p>
    <xforms:output value="if (normalize-space(/first-name) = '') then '' else concat('Hello, ', /first-name, '!)">
  </p>
</body>
</xhtml>
```

XForms Hello

This example is described in details in the [Orbeon Forms Tutorial](#).

Please enter your first name:

Hello, claude!

<http://www.orbeon.com/orbeon/xforms-hello/>

Bookcast example

```
<td class="form-td">
  <xforms:input ref="title">
    <xforms:label class="books-label">Title</xforms:label>
    <xforms:alert>The title is required</xforms:alert>
  </xforms:input>
  <br/>
  <xforms:input ref="author">
    <xforms:label class="books-label">Author</xforms:label>
    <xforms:alert>The author is required</xforms:alert>
  </xforms:input>
  <br/>
  <xforms:select1 ref="language">
    <xforms:label class="books-label">Language</xforms:label>
    <xforms:item>
      <xforms:label>Choose One...</xforms:label>
      <xforms:value/>
    </xforms:item>
    <xforms:itemset nodeset="instance('languages-instance')/language"
      <xforms:label ref="name"/>
      <xforms:value ref="value"/>
    </xforms:itemset>
  </xforms:select1>
  <br/>
  <xforms:input ref="link">
    <xforms:label class="books-label">Link</xforms:label>
    <xforms:alert>The link is incorrect</xforms:alert>
  </xforms:input>
  <br/>
```

The screenshot shows a web form titled "Add One" with the following fields and states:

- Title:** Empty text input field with a red exclamation mark icon and a tooltip that says "The title is required".
- Author:** Empty text input field with a red exclamation mark icon.
- Language:** Dropdown menu showing "Choose One...".
- Link:** Text input field containing "http://www.orbeon.com/orbeon/xforms-book" with a red X icon.
- Rating:** Radio buttons for "None", "1", "2", "3", "4", and "5". "None" is selected.
- Notes:** Text area containing "Example data entry".

Bookcast: page-flow.xml

[RUN APPLICATION](#) [VIEW SOURCE CODE](#)

Orbeon Forms Source Code Viewer

Application: XForms Bookcast View as text View as formatted XML

atom.xpl	1,310	<pre><config xmlns="http://www.orbeon.com/oxf/controller"> <page path-info="/xforms-bookcast/" view="view.xhtml"/> <page path-info="/xforms-bookcast/atom" model="atom.xpl" view="atom.xsl"/> <epilogue url="oxf:/config/epilogue.xpl"/> </config></pre>
atom.xsl	3,510	
page-flow.xml	1,033	
sample-data.xml	2,821	
schema.xsd	2,623	
view.xhtml	14,027	

<http://www.orbeon.com/orbeon/xforms-bookcast/>

Bookcast: schema.xsd

Application: XForms Bookcast   View as text  View as formatted XML  Download

atom.xpl	1,310
atom.xsl	3,510
page-flow.xml	1,033
sample-data.xml	2,821
<u>schema.xsd</u>	2,623
view.xhtml	14,027

```
<xs:schema elementFormDefault="qualified"
attributeFormDefault="unqualified" xmlns:xs="http://www.w3.org
/2001/XMLSchema">
  <xs:element name="books">
    <xs:complexType>
      <xs:sequence minOccurs="0" maxOccurs="unbounded">
        <xs:element name="book" type="book"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="book">
    <xs:sequence>
      <xs:element name="title" type="xs:string"/>
      <xs:element name="author" type="xs:string"/>
      <xs:element name="language" type="language"/>
      <xs:element name="link" type="link"/>
      <xs:element name="rating" type="rating"/>
      <xs:element name="notes" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
  <xs:simpleType name="rating">
    <xs:restriction base="xs:string">
      <xs:enumeration value=""/>
      <xs:enumeration value="1"/>
      <xs:enumeration value="2"/>
      <xs:enumeration value="3"/>
      <xs:enumeration value="4"/>
      <xs:enumeration value="5"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:simpleType name="language">
    <xs:restriction base="xs:string">
      <xs:enumeration value=""/>
```

Bookcast: atom.xpl

Orbeon Forms Source Code Viewer

Application: XForms Bookcast   View as text  View as formatted XML  Download

atom.xpl	1,310	<pre><p:config xmlns:oxf="http://www.orbeon.com/oxf/processors" xmlns:p="http://www.orbeon.com/oxf/pipeline"> <p:param name="data" type="output"/> <p:processor name="oxf:xforms-submission"> <p:input name="submission"> <xforms:submission serialization="none" method="get" action="/exist/rest/db/orbeon/xforms-bookcast/books.xml" xmlns:xforms="http://www.w3.org/2002/xforms"/> </p:input> <p:input name="request"> <dummy/> </p:input> <p:output name="response" ref="data"/> </p:processor> </p:config></pre>
atom.xsl	3,510	
page-flow.xml	1,033	
sample-data.xml	2,821	
schema.xsd	2,623	
view.xhtml	14,027	

<http://www.orbeon.com/orbeon/xforms-bookcast/>

Bookcast: atom.xsl

Application: XForms Bookcast View as text View as formatted XML Download




atom.xpl	1,310
atom.xsl	3,510
page-flow.xml	1,033
sample-data.xml	2,821
schema.xsd	2,623
view.xhtml	14,027

```
<feed xsl:version="2.0" xmlns:xsl="http://www.w3.org/1999/XSL
/Transform" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns="http://www.w3.org/2005/Atom">
  <title>Orbeon Forms Bookcast</title>
  <subtitle>An Orbeon Forms tutorial example</subtitle>
  <updated>
    <xsl:value-of select="current-dateTime()" />
  </updated>
  <id>http://www.orbeon.com/ops/xforms-bookcast/</id>
  <link href="http://www.orbeon.com/" />
  <generator uri="http://www.orbeon.com/ops/xforms-bookcast/"
version="1.0">Orbeon Forms Bookcast</generator>
  <xsl:for-each select="/books/book">
    <entry>
      <title>
        <xsl:value-of select="concat(author, ' - ', title)" />
      </title>
      <id>
        http://www.orbeon.com/ops/xforms-bookcast/<xsl:value-of
select="concat(author, ' - ', title)" /> />
      </id>
      <updated>
        <xsl:value-of select="current-dateTime()" />
      </updated>
      <content type="xhtml" xml:lang="en">
        <div xmlns="http://www.w3.org/1999/xhtml">
          <p>
            Book information:
          </p>
          <table>
            <tr>
              <th>Title</th>
              <td>
```


Bookcast web form


XForms Bookcast

This example is described in details in the Orbeon Forms Tutorial.

 Save  Revert  Load Sample Data

+ Add One

Title	<input type="text" value="Orbeon Forms"/>
Author	<input type="text" value="Claude Felizardo"/>
Language	<input type="text" value="English"/>
Link	<input type="text" value="/www.orbeon.com/orbeon/xforms-bookcast/"/>
Rating	<input checked="" type="radio"/> None <input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
Notes	<input type="text" value="Example data entry"/>

Title	<input type="text" value="How to Create a Database"/>
Author	<input type="text" value=""/> 
Language	<input type="text" value="English"/>
Link	<input type="text" value="Choose One..."/>
Rating	<input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5
Notes	<input type="text" value="qwerty"/>

<http://www.orbeon.com/orbeon/xforms-bookcast/>

Bookcast Atom feed

Orbeon Forms Bookcast

An Orbeon Forms tutorial example

Claude Felizardo - Orbeon Forms

06/09/2010 04:30 PM

Book information:

Title Orbeon Forms

Author Claude Felizardo

Language en

Link <http://www.orbeon.com/orbeon/xforms-bookcast/>

Rating

Notes Example data entry

Ian Field - How to Create a Database

06/09/2010 04:30 PM

Book information:

Title How to Create a Database

Author Ian Field

Language en

Link

<http://www.orbeon.com/orbeon/xforms-bookcast/atom>

Example of Datatable Sorted and Paged

```
<fr:datatable paginated="true" rowsPerPage="5">
<thead>
<tr>
<th fr:sortable="true" fr:resizeable="true"
fr:sorted="descending">Date</th>
<th fr:sortable="true" fr:resizeable="true">Author</th>
<th fr:sortable="true" fr:resizeable="true">Title</th>
</tr>
</thead>
<tbody>
<tr repeat-nodeset="/atom:feed/atom:entry">
<td>
<xf:output ref="atom:published"
xxforms:format="format-dateTime(.,
'[M01]/[D01]/[Y] - [h01]:[m01]:[s01]')"/>
</td>
<td>
<a href="{atom:author/atom:uri}">
<xf:output value="atom:author/atom:name"/>
</a>
</td>
<td>
<xf:output value="atom:title"/>
</td>
</tr>
</tbody>
</fr:datatable>
```

This sample demonstrates the pagination feature of the datatable widget.

<< first < prev **1** [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) next > last >>

Date	Author	Title
06/06/2010 - 12:59:47	zakirhuseynov (Zakir Huseynov)	Mozilla XForms v0.8.7 for Firefox: После полутора лет разработки выпущена очередная версия расширения Mozilla XFor... http://bit.ly/ccx5ez
06/07/2010 - 04:13:10	windauer (Lars Windauer)	RT @betterFORM2010: betterFORM lightSteelBlue XRX edition (3.1.0) released. A complete XRX (XForms Rest XQuery) platform out of the box. Comes with demo app.
06/04/2010 - 12:57:25	wcandillon (wcandillon)	Congrats! RT @AlainCouthures: Now at W3C as Invited Expert: "Successfully joined the Forms Working Group" #xforms :-)
06/06/2010 - 11:28:37	vsharmanov (Большой Брат)	Mozilla XForms v0.8.7 for Firefox http://ff.im/-lyBbj
06/07/2010 - 02:53:35	ssethi (Sam Sethi)	Would love to see @google make Docs/Spreadsheets work like www.factual.com and also support xforms.

<< first < prev **1** [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) next > last >>

Example Tabs with Instance Inspector

SOC TCX PaKOI Fed KFOP P&A PVS DV CT Logs

Log Files

Rescan

File	Date	Size	Application	Operator
ingest_fed_6-9-2010_175452.log	Wed Jun 9 17:54:53 2010	34.97 KiB	Federation Ingest	bswift_DV_CT
ingest_tcx_6-8-2010_124614.log	Tue Jun 8 12:46:14 2010	147.00 bytes	TCX Ingest	NULL
ingest_tcx_6-8-2010_123723.log	Tue Jun 8 12:37:23 2010	1.01 KiB	TCX Ingest	NULL

Orbeon Forms XForms Instance Inspector (XBL)

View instance **Model:** main-model **Instance:** log-files-instance

Evaluate XPath **XPath expression:** /* ⓘ

Mode: Formatted Plain

```
<log-files>
  <file-entry action="" datatype="Log File" size="34.97 KiB" date="wed Jun 9 17:54:53 2010" application="Federation Ingest"
  operator="bswift_DV_CT">
    <file filename="ingest_fed_6-9-2010_175452.log" mediatype="text/plain">
      file:///work/LoadTool/logs//ingest_fed_6-9-2010_175452.log
    </file>
  </file-entry>
  <file-entry action="" datatype="Log File" size="147.00 bytes" date="Tue Jun 8 12:46:14 2010" application="TCX Ingest"
  operator="NULL">
    <file filename="ingest_tcx_6-8-2010_124614.log" mediatype="text/plain">
```

Orbeon Forms Pro and Cons

- Pros

- Leverage existing XML technologies
- Traditional "Hard" Web programming details handled
- No JavaScript skills required
- No Ajax programming skills required

- Cons

- Declarative syntax
- Heavy on XML

For more information

<http://www.orbeon.com>

- Videos, Demos, Tutorial
- Documentation
 - Wiki, User Guide, FAQ
- Support and Services
 - Professional Edition (PE)
 - Community Edition (PE)
 - Custom Solutions
 - Training