



XML, la estructura de la realidad

Andrés Bustamante - 2004



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Introducción

- Contexto
- eXtensible Markup Language
- SGML: Standard Generalized Markup Language. Estandar ISO para definicion de metodos de representacion de la informacion, independiente de maquinas y personas.
- Aplicaciones SGML: Lenguajes
- XML: Subset de SGML



HTML... el primogénito

- `<HTML></HTML>`
- Anidación
- Atributos : nombre – valor
 - `<FORM METHOD="POST" ACTION="script.php">`
 - Por favor seleccione un tipo de tarjeta de credito para el pedido
 - `<INPUT TYPE="radio" NAME="CCType" VALUE="Visa">`
 - `<INPUT TYPE="radio" NAME="CCType" VALUE="MC">`
 - `</FORM>`
- Especificaciones Formales HTML: DTD
 - Strict DTD
 - Transitional DTD
 - Frameset DTD



De HTML a XHTML

- eXtensible Hypertext Markup Language
- www.w3.org
- Estricto, Bien formado
 - Declaración DOCTYPE
 - Elemento raíz <HTML>
 - Elementos y atributos en minúscula
 - Valores de atributo entre comillas
 - Anidación adecuada, no superpuesta



XML historico

- 1996: Lenguaje de Marcas Extensible, versión sencilla de SGML
- 1997: XML, Java and the future (SUN):
 - Posibilidad de crear nuevas etiquetas (elementos) y atributos.
 - Niveles anidados de complejidad a cualquier nivel
 - Validación de estructura en tiempo real
- 1997: W3C XML 1.0
- 1998: XML.QL: A query language for XML
- 2000: XHTML 1.0 ; XSL (XSLT); Firmas, Xforms, Xpath, Schemas



Haciendo XML

- Determinación del problema
- Elementos, atributos, requisitos
- Revisión de “patrones”?
 - CML (Chemical)
 - GEML (Genetica)
 - MathML (Matematicas)
 - PetroXML
 - ThML (Teologico!)
 - WDSL
 - eBXml
- Redefinir – Especializar a dominio?
- Crear modelos de datos
- Crear DTD
- Crear y probar documentos XML



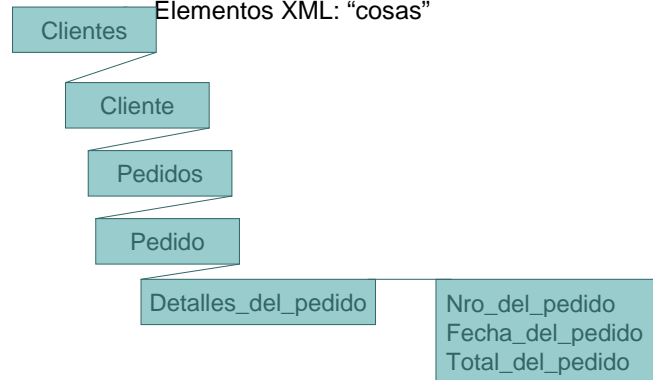
Creando XML

- Las gracias:
 - Extensible
 - Entendimiento Hombre – Maquina
 - Comunicación Maquina – Maquina
 - Texto Sencillo
 - Condiciones (ej 200 char max)
- Componentes
 - Bien formado / Valido
 - Entidades y datos XML
 - Vocabulario XML (DTDs)
 - Caracteres XML : Unicode
 - Nombres XML: XML, numeros
 - Secciones: Prologo, cuerpo, epilogo `<?xml version="1.0"?>`




Dentro de XML

- o DTD: Internas o externas
- o Elementos XML: "cosas"



Dentro de XML


- o `<cliente></cliente>`
- o Atributos: No contienen elementos hijo
 - CDATA
 - ID
 - IDREF
 - ENTITY
 - NOTATION
- o Valores:
 - #REQUIRED
 - #IMPLIED
 - #FIXED



```

<!-- Customer version 1.0 DTD
This DTD is an example for the book
XML Beginner's Guide, and builds a
customers and orders management system.
Copyright Dave Mercer 2001, 2002
-->
<!ELEMENT Customers ANY>
<!ELEMENT Customer (#PCDATA | Orders+ )>
<!ATTLIST Customer
  customerid ID #REQUIRED
  phone CDATA #IMPLIED
  email CDATA #REQUIRED
  fulladdress CDATA #IMPLIED >
<!ELEMENT Orders (Order*)>
<!ELEMENT Order (OrderDetails, OrderItems)>
<!ELEMENT OrderDetails EMPTY>
<!ATTLIST OrderDetails
  OrderNumber ID #REQUIRED
  OrderDate CDATA #REQUIRED
  OrderTotal CDATA "0.00" >
<!ELEMENT OrderItems (OrderItem+)>
<!ELEMENT OrderItem (ItemCost,ItemPrice)>
<!ATTLIST OrderItem
  SKUNumber CDATA #REQUIRED
  ItemNumber CDATA #REQUIRED
  Quantity CDATA "0"
  ItemName CDATA #IMPLIED
  ForOrder IDREF #REQUIRED>
<!ELEMENT ItemCost (#PCDATA)>
<!ELEMENT ItemPrice (#PCDATA)>

```



```

<Customer customerid="cid222"
email=js@e4free.com
fulladdress="234 Your Street,
Your City, YourState, 90000">Jane Smith
<Orders>
<Order>
<OrderDetails OrderNumber="onid222"
OrderDate="1/12/01"/>
<OrderItems>
<OrderItem SKUNumber="2121"
ItemNumber="2121-2"
ForOrder="onid222">
<ItemCost>200</ItemCost>
<ItemPrice>1200</ItemPrice>
</OrderItem>
</OrderItems>
</Order>
</Orders>
</Customer>
</Customers>

```



Algunas Aplicaciones

- SMIL
 - Posicionamiento
 - Temporalidad
 - Secuenciamiento
- Xforms: The goal of XForms is to provide the 20% of necessary functionality to eliminate 80% of the need for scripting
 - Limitaciones actuales
 - Pobre integración con XML
 - Se depende del scripting dada sus características limitadas
 - Solo corren bien en desktop browsers (limitación de plataforma)
 - Características de accesibilidad limitadas
 - Problemas a nivel de presentación
 - Xforms:
 - Excellent XML integration (including XML Schema)
 - Provide commonly-requested features in a declarative way, including calculation and validation
 - Device independent, yet still useful on desktop browsers
 - Strong separation of purpose from presentation
 - Universal accessibility



XForms



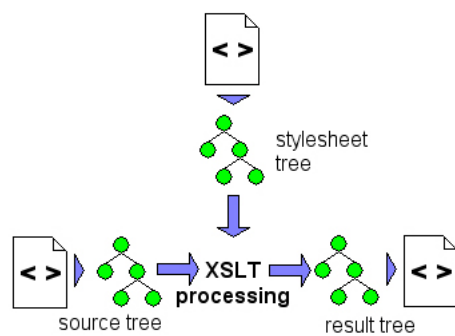
XForms form control	Closest XHTML equivalent	Description
<input>	<input type="text">	For entry of small amounts of text
<textarea>	<textarea>	For entry of large amounts of text
<secret>	<input type="password">	For entry of sensitive information
<output>	N/A	For inline display of any instance data
<range>	N/A	For smooth "volume control" selection of a value
<upload>	<input type="file">	For upload of file or device data
<trigger>	<button>	For activation of form events
<submit>	<input type="submit">	For submission of form data
<select>	<select multiple="multiple"> or multiple <input type="checkbox">	For selection of zero, one, or many options
<select1>	<select> or multiple <input type="radio">	For selection of just one option among several

XMLEvents... y el DOM



XSL/XSLT

- CCS2 : Hojas de Estilo en Cascada
- H3 { color : red ; font-style : italic;}
- XSL: Estilos en XML
- XSLT: Plantillas (Xpath)



Web Services

Y el camino de MS .Net



Contenido

- Introducción
- Definiciones
- .Net
- Beneficios de .Net



Introducción

- Web Services represents a new platform on which developers can build the same distributed applications they've always built, but this time with interoperability as the highest priority
- Intentos previos: DCOM, CORBA, RMI
- Estandarización, interoperabilidad?
- Enterprise Application Integration (EAI) and Business-to-Business Integration (B2Bi).
- XML al rescate



Wire Level Contract

UDDI	Registry of endpoints
WSDL	Endpoint description
XSD	Portable type system
SOAP	Framing, protocol binding
XML 1.0 + Namespaces	Serialized messages

■ Wire protocols ■ Description languages
■ Discovery mechanisms



Definiendo

- **XML 1.0 and Namespaces: Sintaxis para representación de información**
- **XML Schema : DTD**
- **SOAP** : HTTP headers and body
- **WSDL**: Endpoint y su comportamiento
- **UDDI** : Universal Discovery Definition Interface



Getting Started on .Net

- The .NET Framework is a development and execution environment that allows different programming languages & libraries to work together seamlessly to create Windows-based applications that are easier to build, manage, deploy, and integrate with other networked systems. The .NET Framework consists of:
 - **The Common Language Runtime (CLR)**
 - **The Framework Class Libraries (FCL)**
(ADO.NET ASP.NET)
- The .NET Framework provides the basic infrastructure that Windows-based applications need to make Microsoft's .NET vision of connecting information, people, systems, and devices a reality:
 - **Support for standard networking protocols & specifications**
 - **Support for different programming languages**
 - **Support for programming libraries developed in different languages**
 - **Support for different platforms**



CLR & FCL

- Modelo consistente de programación
- Modelo de programación simplificado
- Corre una vez, corre siempre
- Múltiples plataformas
- Integración de lenguajes
- Reutilización de código
- Asignación de recursos automática
- Seguridad