Advanced DTD Concepts

Lecture 4, July 1st
Internal and External Subsets

<!DOCTYPE card SYSTEM “abook-dtd.dtd”>
[
  <!ELEMENT card (name, tel, email?)>
  <!ATTLIST card type (personal|business) #IMPLIED>
]
>

Promotes Reusability
INCLUDE and IGNORE

- <![ IGNORE
  [ declarations that are ignored ]
]>  

- <![ INCLUDE
  [ declarations that are included ]
]>
Entities

“An XML document may consist of one or more storage units ... called entities.”

- Organize large document sets
- Ensure consistency (w.r.t. freq changing information)
- Limit repetitive typing
General Entities

- Declaration

```xml
<!DOCTYPE root [ <!ENTITY entity_name entity_value> ]>
```

- Reference

```
.......&entity_name; ......
```
Default Entities Recognized in XML

- `&` = `&amp;`
- `<` = `&lt;`
- `>` = `&gt;`
- `"` = `&quot;`
- `'` = `&apos;`
External Entity

- Declaration

```xml
<!DOCTYPE root [
<!ENTITY entity_name SYSTEM entityURI> ]>
```

- Reference

```xml
......&entity_name; ......
Unparsed Entities

- Binary (non-textual) data

```xml
<!NOTATION GIF89a PUBLIC "-//Compuserve//NOTATION Graphic Interchange Format 89a//EN" "psp.exe">
<!NOTATION GIF SYSTEM "psp.exe">
<!ENTITY graphic_logo SYSTEM "logo.gif" NDATA GIF>
<!ELEMENT Company (Name, Address, MainPhoneNum)>
<!ATTLIST Company
detailedlogo ENTITY #REQUIRED
boardpictures ENTITIES #IMPLIED>

<Company detailedlogo = "graphic_logo" boardpictures = "president_picture CEO_picture">
```
XML Schema

- XML Schemas are extensible to future additions
- XML Schemas are richer and more useful than DTDs
- XML Schemas are written in XML
- XML Schemas support data types
- XML Schemas support namespaces
XML Namespaces

- Reusability
- Combination of existing vocabularies.

Problems:
- Name resolution
- Partitioning items
Namespaces Syntax

**Qualified Name**

```
<BK:BOOKSTORE XMLNS:BK="http://www.example.org/bookstore"/>
```

**Default Namespace Declaration**

```
<BOOKSTORE XMLNS="http://www.example.org/bookstore"/>
```
Namespace Scoping

- Explicitly mapped prefixes
- Default namespaces
- Overriding namespace