

Examples of Document Type Definition in XML

Sheng Zhong (sheng.zhong@yale.edu)

Here are some examples of document type definition (DTD). The DTDs are written in **bold** and *italic* fonts, and the annotations are written in roman. You can refer to <http://www.xml.com> if you want to learn more about XML.

Ex1. Paper

Suppose that there is a special kind of paper that must have a title, an author, and a body. We assign the author a unique ID and may include his or her address as an optional attribute. The body consists of one or more chapters, followed by a series of references. Because this paper belongs to the company "XYZ international," a copyright claim may appear in the paper.

```
<!DOCTYPE docpaper [  
  defining a document type named "docpaper"  
<!ELEMENT paper (title, author, body)>  
  defining an element named "paper"  
<!ELEMENT title (#PCDATA)+>  
  defining an element named "title," which contains some parseable character data (PCDATA)  
<!ELEMENT author (#PCDATA)+>  
  defining an element named "author"...  
<!ELEMENT body (chapter+, references) >  
  defining an element named "body," which contains one or more "chapters," and then an element  
  named "references"  
<!ELEMENT chapter (#PCDATA)+>  
<!ELEMENT references (#PCDATA)*>  
<!ATTLIST author  
  defining the attributes of the element "author"  
  authorid  
  ID  
  #REQUIRED  
  the attribute "authorid" is of type "ID" and must appear  
  address  
  CDATA  
  #IMPLIED  
  the attribute "address" is of type "CDATA" and can be optional  
>  
<!ENTITY copyright  
"XYZ international. All rights reserved.">  
  defining an entity "copyright" as the string "XYZ ... reserved"  
>
```

Ex2. Catalog Entry

Consider a catalog entry for a computer. It has a type that specifies whether this is a laptop or a desktop computer. In the catalog, the manufacturer, the line, the model, and the specifications must be listed. Specifications consist of speed, memory, disk, weight, and price.

```
<!DOCTYPE doccat [  
<!ELEMENT computer (manufacturer, line, model, specifications)>  
<!ELEMENT line (#PCDATA)*>  
<!ELEMENT model (#PCDATA)*>  
<!ELEMENT specifications (speed, memory, disk, weight, price)>  
<!ELEMENT speed (#PCDATA)*>  
<!ELEMENT memory (#PCDATA)*>  
<!ELEMENT disk (#PCDATA)*>  
<!ELEMENT weight (#PCDATA)*>  
<!ELEMENT price (#PCDATA)*>  
<!ATTLIST computer  
  type  
  CDATA  
  #REQUIRED  
>  
<!ATTLIST speed  
  unit  
  CDATA  
  #REQUIRED  
>  
<!ATTLIST memory  
  unit  
  CDATA  
  #REQUIRED  
>  
<!ATTLIST disk  
  unit  
  CDATA  
  #REQUIRED  
>  
<!ATTLIST weight  
  unit  
  CDATA  
  #REQUIRED  
>  
<!ATTLIST price  
  currency  
  CDATA  
  #REQUIRED  
>  
>  
>
```

Ex3. Service Request

A software company provides technical support service to its customers. A customer can request the service by filing a document. The request consists of the customer information (including the name, the address, and the telephone number) and the task. There is a track number associated with each request. The task can be urgent or normal, and normal is the default.

```
<!DOCTYPE docreq [  
<!ELEMENT request (customer, task)>  
<!ELEMENT customer (name, address, tel)>  
<!ELEMENT name (#PCDATA)+>  
<!ELEMENT address (#PCDATA)+>  
<!ELEMENT tel (#PCDATA)+>  
<!ELEMENT task (#PCDATA)*>  
<!ATTLIST request  
  trackno  
  ID  
  #REQUIRED  
>  
<!ATTLIST task  
  type  
  (urgent | normal) 'normal'  
>  
]>
```