XML DTD Examples


<!ELEMENT population (#PCDATA)>
<!ATTLIST population year CDATA #IMPLIED>

<population>445</population>
<population year=”1999”>445</population>
<population year=”1998”>389</population>
<population year=”Year of the Rabbit”>445</population>

Which are valid?

*All are valid -- #IMPLIED means the attribute is optional.*

Now change the DTD:

<!ELEMENT population (#PCDATA)>
<!ATTLIST population year (1999 | 2000) #REQUIRED>

Of the same lines above, which are still valid?

*Only the second line remains valid, since the attribute is now mandatory, and must be either 1999, or 2000.*
Now, change the DTD again:

```xml
<!ELEMENT population (#PCDATA)>
<!ATTLIST population year CDATA "1999">
```

Which of the following are valid, and what is the value of the “year” attribute in each of the following?

- `<population>445</population>`
- `<population year="1999">445</population>`
- `<population year="1998">389</population>`

All are valid. The year attribute has the value “1999” in the first two, but not the last, which is “1998”.

Add a small twist:

```xml
<!ELEMENT population (#PCDATA)>
<!ATTLIST population year CDATA #FIXED "1999">
```

Which of these is valid, and what is the value of the “year” attribute in each?

- `<population>445</population>`
- `<population year="1999">445</population>`
- `<population year="1998">389</population>`
The first two are valid, the last one is not. For the first two, the value of "year" is 1999. #FIXED means the value must be the given value (1999). I.e., the attribute is fixed to the value given.
The following DTD is from RFC 2629:
M. Rose, Writing I-Ds and RFCs using XML

```
<!ENTITY % NUMBER   "CDATA">  
<!ENTITY % NUMBERS  "CDATA">  

<!ENTITY % DAY      "CDATA">  
<!ENTITY % MONTH    "CDATA">  
<!ENTITY % YEAR     "CDATA">  

<!ENTITY % URI      "CDATA">  

<!ENTITY % ATEXT    "CDATA">  
<!ENTITY % CTEXT    "#PCDATA">  

<!ENTITY % TEXT     "#PCDATA">  

<!ENTITY rfc.number "2629">  

<!--
The top-level
-->   

<!--
 attributes for the "rfc" element are supplied by the RFC editor. when preparing drafts, authors should leave them blank.
"
the "seriesNo" attribute is used if the category is, e.g., BCP.

-->

<!ELEMENT rfc         (front,middle,back?)>
<!ATTLIST rfc
  number      %NUMBER;           #IMPLIED
  obsoletes   %NUMBERS;          ""
  updates     %NUMBERS;          ""
  category    (std|bcp|info|exp|historic)          
    "info"
  seriesNo    %NUMBER;           #IMPLIED
  ipr         (full2026|noDerivativeWorks2026|none)         
    #IMPLIED
  docName     %ATEXT;            #IMPLIED>

<!--
  Front matter
  -->

<!ELEMENT front       (title,author+,date,area*,workgroup*,keyword*,abstract?,note*)>

<!-- the "abbrev" attribute is used for headers, etc.  -->
<!ELEMENT title       (%CTEXT;)>  
<!ATTLIST title
  abbrev      %ATEXT;            #IMPLIED> 

<!ELEMENT author      (organization,address?)>  
<!ATTLIST author
  initials    %ATEXT;            #IMPLIED
  surname     %ATEXT;            #IMPLIED
fullname  %ATEXT;  #IMPLIED>

<!ELEMENT organization  (%CTEXT;)>  
<!ATTLIST organization   abbrev  %ATEXT;  #IMPLIED>

<!ELEMENT address  (postal?, phone?, facsimile?, email?, uri?)>  

<!-- at most one of each the city, region, code, and country 
 elements may be present -->
<!ELEMENT postal  (street+, (city|region|code|country)*)>  
<!ELEMENT street  (%CTEXT;)>  
<!ELEMENT city  (%CTEXT;)>  
<!ELEMENT region  (%CTEXT;)>  
<!ELEMENT code  (%CTEXT;)>  
<!ELEMENT country  (%CTEXT;)>  
<!ELEMENT phone  (%CTEXT;)>  
<!ELEMENT facsimile  (%CTEXT;)>  
<!ELEMENT email  (%CTEXT;)>  
<!ELEMENT uri  (%CTEXT;)>  

<!ELEMENT date  EMPTY>  
<!ATTLIST date   day  %DAY;  #IMPLIED   
month  %MONTH;  #REQUIRED   
year  %YEAR;  #REQUIRED>  

<!-- meta-data... -->
<!ELEMENT area  (%CTEXT;)>  
<!ELEMENT workgroup  (%CTEXT;)>
<!ELEMENT keyword     (%CTEXT;)>  

<!ELEMENT abstract     (t)+>  
<!ELEMENT note     (t)+>  
<!ATTLIST note     
    title     %ATEXT;          #REQUIRED>  

<!-- The body -->  

<!ELEMENT middle     (section)+>  

<!ELEMENT section     (t|figure|section)*>  
<!ATTLIST section     
    anchor     ID                 #IMPLIED  
    title     %ATEXT;              #REQUIRED>  

<!ELEMENT t     (%TEXT;|list|figure|xref|eref|iref|vspace)*>  
<!ATTLIST t     
    hangText     %ATEXT;          #IMPLIED>  

<!-- the value of the style attribute is inherited from the closest parent -->  
<!ELEMENT list     (t++){2}>  
<!ATTLIST list     
    style     (numbers|symbols|hanging|empty)  
    "empty">
Back matter

<!-- sections, if present, are appendices -->
<!ELEMENT back (references?,section*)>

<!ELEMENT references (reference+)>
<!ELEMENT reference (front,seriesInfo*)>
<!ATTLIST reference
  anchor ID #IMPLIED
  target %URI; #IMPLIED>
<!ELEMENT seriesInfo EMPTY>
<!ATTLIST seriesInfo
  name %ATEXT; #REQUIRED
  value %ATEXT; #REQUIRED>