XML DTD Attributes

https://www.online-toolz.com/tools/xmlvalidator.php

https://www.truugo.com/xml_validator/

xmlvalidator.new-studio.org/

attribute types

- CDATA
- ENTITY
- ID
- IDREF
- IDREFS
- NMTOKEN
- NMTOKENS



```
<?xml version = "1.0"?>
                           Modify the given code for using entity
<!-- intro2.xml -->
<!DOCTYPE myMessage [</pre>
  <!ELEMENT myMessage ( message )>
  <!ELEMENT message ( #PCDATA )>
  <!ENTITY myEntityA "Entity Value A">
  <!ATTLIST message id CDATA #REQUIRED>
]>
<myMessage>
                                              Try to provide
  <message id = "445 myEntityA">
                                             special characters.
    Welcome to XML! myEntityA
  </message>
</myMessage>
```

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https://www.online-toolz.com/tools/xml-validator.php

XML

This XML file does not appear to have any style information associated with it.

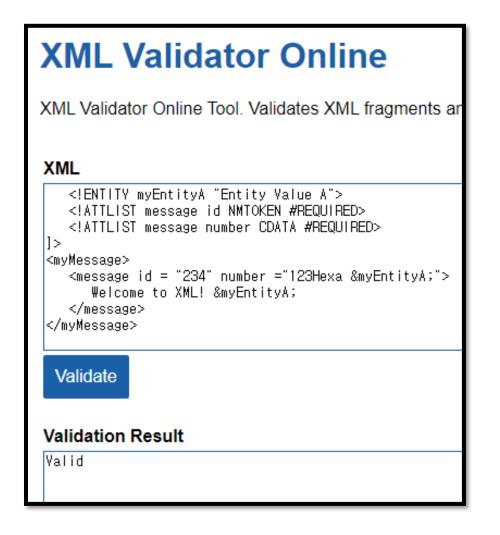
Validate

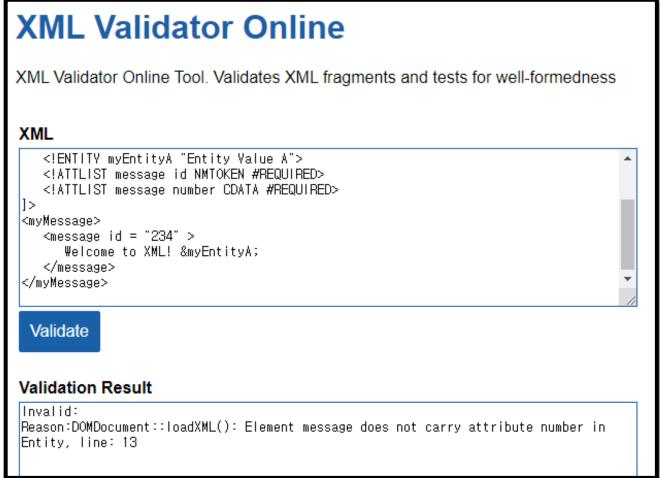
Validation Result

```
<!-- intro2.xml -->
▼<myMessage>
    <message id="445 Entity Value A "> Welcome to XML! Entity Value A </message>
</myMessage>
```

https://www.online-toolz.com/tools/xml-validator.php

Expand the example code for testing ENTITY type.





Test ID type with multiple values...

```
<bookstore>
  <shipping shipID = "s1">
    <duration>2 to 4 days</duration>
  </shipping>
  <shipping shipID = "s2">
    <duration>1 day</duration>
  </shipping>
  <book shippedBy = "s2">
    Java How to Program 3rd edition.
  </book>
  <book shippedBy = "s2">
    C How to Program 3rd edition.
  </book>
  <book shippedBy = "s1 s2">
    C++ How to Program 3rd edition.
  </book>
</bookstore>
```

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XML

Validate

Validation Result

```
Invalid:
Reason:DOMDocument::loadXML(): IDREF attribute shippedBy references an unknown ID
"s1 s2" in Entity, line: 29
```

IDREFS

Modify IDExample.xml

```
<bookstore>
  <shipping shipID = "s1">
    <duration>2 to 4 days</duration>
  </shipping>
  <shipping shipID = "s2">
    <duration>1 day</duration>
  </shipping>
  <book shippedBy = "s2">
    Java How to Program 3rd edition.
  </book>
  <book shippedBy = "s2">
    C How to Program 3rd edition.
  </book>
  <book shippedBy = "s1 s2">
    C++ How to Program 3rd edition.
  </book>
</bookstore>
```

```
<!ATTLIST book shippedBy IDREFS #IMPLIED> ... 
<book shippedBy = "s1 s2">
```

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XML

```
</book>
</book>
<book shippedBy = "s2">
C How to Program 3rd edition.
</book>
<book shippedBy = "s1 s2">
C++ How to Program 3rd edition.
</book>
</bookstore>
```

Validate

Validation Result

NMTOKEN Type

Modify intro2.xml to test MNTOKEN type.

```
<?xml version = "1.0"?>
<!DOCTYPE myMessage [</pre>
  <!ELEMENT myMessage ( message )>
  <!ELEMENT message ( #PCDATA )>
  <!ATTLIST message id NMTOKEN #REQUIRED>
]>
<myMessage>
  <message id = "445">
    Welcome to XML!
  </message>
</myMessage>
```

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XML

Validate

Validation Result

Think about the difference between CDATA and NMTOKEN

```
<?xml version = "1.0"?>
<!DOCTYPE myMessage [</pre>
  <!ELEMENT myMessage ( message )>
  <!ELEMENT message ( #PCDATA )>
  <!ATTLIST message id CDATA #REQUIRED>
]>
<myMessage>
  <message id = "445">
    Welcome to XML!
  </message>
</myMessage>
```

Is this OK? Test with a validator.

```
<?xml version = "1.0"?>
<!DOCTYPE myMessage [</pre>
  <!ELEMENT myMessage ( message )>
  <!ELEMENT message ( #PCDATA )>
  <!ATTLIST message id NMTOKEN #REQUIRED>
]>
<myMessage>
  <message id = "445 234">
    Welcome to XML!
  </message>
</myMessage>
```

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XML

Validate

Validation Result

```
Invalid:
```

Reason:DOMDocument::loadXML(): Syntax of value for attribute id of message is not valid in Entity, line: 8

XML Validator Online

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XML

Validate

Validation Result

XML Validator Online Tool. Validates XML fragment

XML

Validate

Validation Result

Valid

https://www.online-toolz.com/tools/xml-validator.php

Test with

https://www.online-toolz.com/tools/xml-validator.php

Try to combine the example XML data and DTD.

```
<?xml version = "1.0"?>
<!DOCTYPE letter [
<!ELEMENT letter (contact+, salutation, paragraph+, closing, signature)>
<!ELEMENT contact ( name, address1, address2, city, state, zip, phone, flag )>
<!ATTLIST contact type CDATA #IMPLIED>
<!ELEMENT name ( #PCDATA )>
<!ELEMENT address1 ( #PCDATA )>
<!ELEMENT address2 ( #PCDATA )>
<!ELEMENT city ( #PCDATA )>
<!ELEMENT state ( #PCDATA )>
<!ELEMENT zip ( #PCDATA )>
<!ELEMENT phone ( #PCDATA )>
<!ELEMENT flag EMPTY>
<!ATTLIST flag gender (M | F) "M">
<!ELEMENT salutation ( #PCDATA )>
<!ELEMENT closing ( #PCDATA )>
<!ELEMENT paragraph ( #PCDATA )>
<!ELEMENT signature ( #PCDATA )>
]>
```

```
<?xml version = "1.0"?>
<!DOCTYPE letter SYSTEM "letter.dtd">
<letter>
  <contact type = "from">
    <name>John Doe</name>
    <address1>123 Main St.</address1>
    <address2></address2>
    <city>Anytown</city>
    <state>Anystate</state>
    <zip>12345</zip>
    <phone>555-1234</phone>
    <flag gender = "M"/> </contact>
    <contact type = "to">
    <name>Joe Schmoe</name>
    <address1>Box 12345</address1>
    <address2>15 Any Ave.</address2>
    <city>Othertown</city>
    <state>Otherstate</state>
    <zip>67890</zip>
    <phone>555-4321</phone>
    <flag gender = "M"/> </contact>
    <salutation>Dear Sir:</salutation>
  <paragraph>It is our ....</paragraph>
  <closing>Sincerely</closing>
  <signature>Mr. Doe</signature>
</letter>
```

DTD

```
<!ELEMENT letter ( contact+, salutation,
paragraph+, closing, signature )>
<!ELEMENT contact ( name, address1, address2,
city, state,
  zip, phone, flag )>
<!ATTLIST contact type CDATA #IMPLIED>
<!ELEMENT name ( #PCDATA )>
<!ELEMENT address1 ( #PCDATA )>
<!ELEMENT address2 ( #PCDATA )>
<!ELEMENT city ( #PCDATA )>
<!ELEMENT state ( #PCDATA )>
<!ELEMENT zip ( #PCDATA )>
<!ELEMENT phone (#PCDATA)>
<!ELEMENT flag EMPTY>

≼!ATTLIST flag gender (M | F) "M">
<!ELEMENT salutation ( #PCDATA )>
<!ELEMENT closing ( #PCDATA )>
<!ELEMENT paragraph ( #PCDATA )>
<!ELEMENT signature ( #PCDATA )>
```

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XML

Validation Result

Validate

attribute types

- CDATA
- ENTITY
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- IDREF
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- NMTOKEN
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