

# XML DTD Attributes

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

[https://www.truugo.com/xml\\_validator/](https://www.truugo.com/xml_validator/)

[xmlvalidator.new-studio.org/](https://xmlvalidator.new-studio.org/)

# attribute types

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

# Entity

intro2.xml

Modify the given code for using entity

```
<?xml version = "1.0"?>
<!-- intro2.xml -->
<!DOCTYPE myMessage [
  <!ELEMENT myMessage ( message )>
  <!ELEMENT message ( #PCDATA )>
  <!ENTITY myEntityA "Entity Value A">
  <!ATTLIST message id CDATA #REQUIRED>
]>
<myMessage>
  <message id = "445 myEntityA">
    Welcome to XML! myEntityA
  </message>
</myMessage>
```

Try to provide special characters.

# XML Validator Online

XML Validator Online Tool. Validates XML fragments and

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

## XML

```
<!ENTITY myEntityA "Entity Value A">
<!ATTLIST message id CDATA #REQUIRED>
]>
<myMessage>
  <message id = "445 &myEntityA; ">
    Welcome to XML! &myEntityA;
  </message>
</myMessage>
```

Validate

## Validation Result

Valid

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

```
<!-- 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.

## XML Validator Online

XML Validator Online Tool. Validates XML fragments and tests for well-formedness

### XML

```
<!ENTITY myEntityA "Entity Value A">
<!ATTLIST message id NMTOKEN #REQUIRED>
<!ATTLIST message number CDATA #REQUIRED>
]>
<myMessage>
  <message id = "234" number ="123Hexa &myEntityA;">
    Welcome to XML! &myEntityA;
  </message>
</myMessage>
```

Validate

### Validation Result

Valid

## XML Validator Online

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### XML

```
<!ENTITY myEntityA "Entity Value A">
<!ATTLIST message id NMTOKEN #REQUIRED>
<!ATTLIST message number CDATA #REQUIRED>
]>
<myMessage>
  <message id = "234" >
    Welcome to XML! &myEntityA;
  </message>
</myMessage>
```

Validate

### Validation Result

Invalid:  
Reason: DOMDocument::loadXML(): Element message does not carry attribute number in Entity, line: 13

# Test ID type with multiple values...

```
<?xml version = "1.0"?>
<!-- IDExample.xml -->
<!DOCTYPE bookstore [
  <!ELEMENT bookstore ( shipping+, book+ )>
  <!ELEMENT shipping ( duration )>
  <!ATTLIST shipping shipID ID #REQUIRED>
  <!ELEMENT book ( #PCDATA )>
  <!ATTLIST book shippedBy IDREF #IMPLIED>
  <!ELEMENT duration ( #PCDATA )>
]>
```

```
<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>
```

# XML Validator Online

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## XML

```
</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

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

# IDREFS

Modify IDExample.xml

```
<?xml version = "1.0"?>
<!-- IDExample.xml -->
<!DOCTYPE bookstore [
  <!ELEMENT bookstore ( shipping+, book+ )>
  <!ELEMENT shipping ( duration )>
  <!ATTLIST shipping shipID ID #REQUIRED>
  <!ELEMENT book ( #PCDATA )>
  <!ATTLIST book shippedBy IDREFS #IMPLIED>
  <!ELEMENT duration ( #PCDATA )>
]>
```

```
<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">
```

## XML Validator Online

XML Validator Online Tool. Validates XML fragments and

### XML

```
</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

Valid

# NMTOKEN Type

Modify intro2.xml to test MNTOKEN type.

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

# XML Validator Online

XML Validator Online Tool. Validates XML fragments and

## XML

```
<!ELEMENT myMessage ( message )>
<!ELEMENT message ( #PCDATA )>
<!ATTLIST message id NMTOKEN #REQUIRED>
]>
<myMessage>
  <message id = "445">
    Welcome to XML!
  </message>
</myMessage>
```

Validate

## Validation Result

Valid

# Think about the difference between CDATA and NMTOKEN

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

# XML Validator Online

XML Validator Online Tool. Validates XML fragments and tests for well-formedness

## XML

```
<!ELEMENT myMessage ( message )>
<!ELEMENT message ( #PCDATA )>
<!ATTLIST message id NMTOKEN #REQUIRED>
]>
<myMessage>
  <message id = "445 123">
    Welcome to XML!
  </message>
</myMessage>
```

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

XML Validator Online Tool. Validates XML fragments and tests for well-formedness

## XML

```
<!ELEMENT myMessage ( message )>
<!ELEMENT message ( #PCDATA )>
<!ATTLIST message id NMTOKENS #REQUIRED>
]>
<myMessage>
  <message id = "445 123">
    Welcome to XML!
  </message>
</myMessage>
```

Validate

## Validation Result

Valid

# XML Validator Online

XML Validator Online Tool. Validates XML fragment

## XML

```
<!ELEMENT myMessage ( message )>
<!ELEMENT message ( #PCDATA )>
<!ATTLIST message id CDATA #REQUIRED>
]>
<myMessage>
  <message id = "445 234">
    Welcome to XML!
  </message>
</myMessage>
```

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 Validator Online

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### XML

```
<!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 )>
```

Validate

### Validation Result

Valid

# attribute types

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