**[MS-DOM1]:**

**Internet Explorer Document Object Model (DOM) Level 1**

**Standards Support Document**



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**Revision Summary**

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|  | |  |  | |  |  |  |  |  |  | |  |
| 07/25/2012 | |  | 3.1 | |  |  | Minor |  |  | Clarified the meaning of the technical content. | |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |



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**1 Introduction**

This document describes the level of support provided by Windows® Internet Explorer® for the

*Document Object Model (DOM) Level 1 Specification Version 1.0* [[DOM Level 1](http://go.microsoft.com/fwlink/?LinkId=163965)],W3CRecommendation 1 October, 1998. Internet Explorer displays webpages written in HTML.

The  [[DOM Level 1]](http://go.microsoft.com/fwlink/?LinkId=163965) specification may contain guidance for authors of HTML and XML documents, browser users and user agents (browser applications). Statements found in this document apply only to normative requirements in the specification targeted to user agents, not those targeted to authors.

1. **Glossary**

**MAY, SHOULD, MUST, SHOULD NOT, MUST NOT:** These terms (in all caps) are used asdescribed in  [[RFC2119](http://go.microsoft.com/fwlink/?LinkId=90317)]. All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

1. **References**

References to Microsoft Open Specifications documentation do not include a publishing year because links are to the latest version of the technical documents, which are updated frequently. References to other documents include a publishing year when one is available.

1. **Normative References**

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact  [dochelp@microsoft.co](mailto:dochelp@microsoft.com)m. We will assist you in finding the relevant information. Please check the archive site,  [http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C962](http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624)4, as an additional source.

[DOM Level 1] Worldwide Web Consortium (W3C), "Document Object Model (DOM) Level 1 Specification", Version 1.0, W3C Recommendation, October 1998,  [http://www.w3.org/TR/1998/REC-DOM-Level-1-19981001](http://go.microsoft.com/fwlink/?LinkId=163965)/

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997,  [http://www.rfc-editor.org/rfc/rfc2119.tx](http://go.microsoft.com/fwlink/?LinkId=90317)t

1. **Informative References**

None.

1. **Microsoft Implementations**

The following Microsoft products implement some portion of the  [[DOM Level 1]](http://go.microsoft.com/fwlink/?LinkId=163965) specification:

Windows® Internet Explorer® 7

Windows® Internet Explorer® 8

Windows® Internet Explorer® 9

Windows® Internet Explorer® 10



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In addition, each version of Internet Explorer implements multiple document modes, which can vary individually in their support of the standard. The following table lists the document modes available in each version of Internet Explorer:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Browser Version** |  |  | **Document Modes Supported** |  |  |
|  |  |  |  |  |
|  |  |  |  |  |  |  |
| Internet Explorer 7 | |  |  | Quirks mode | |  |
|  |  |  |  | Standards mode | |  |
|  | |  |  |  | |  |
| Internet Explorer 8 | |  |  | Quirks mode | |  |
|  |  |  |  | IE7 mode | |  |
|  |  |  |  | IE8 mode | |  |
|  | |  |  |  | |  |
| Internet Explorer 9 | |  |  | Quirks mode | |  |
|  |  |  |  | IE7 mode | |  |
|  |  |  |  | IE8 mode | |  |
|  |  |  |  | IE9 mode | |  |
|  | |  |  |  | |  |
| Internet Explorer 10 | |  |  | Quirks mode | |  |
|  |  |  |  | IE7 mode | |  |
|  |  |  |  | IE8 mode | |  |
|  |  |  |  | IE9 mode | |  |
|  |  |  |  | IE10 Mode | |  |
|  |  |  |  |  |  |  |

Throughout this document, the document mode appears first followed by the browser version in parentheses. Only those document modes and versions of Internet Explorer for which there is a variation note will be listed. If the document mode is not listed, conformance to the specification can be assumed.

**Note** "Standards mode" in Internet Explorer 7 and "IE7 mode" in Internet Explorer 8 refer to thesame document mode. "IE7 mode" is the preferred way of referring to this document mode across all versions of the browser.

1. **Standards Support Requirements**

To conform to  [[DOM Level 1](http://go.microsoft.com/fwlink/?LinkId=163965)], a user agent must implement all required portions of the specification. Any optional portions that have been implemented must also be implemented as described by the specification. Normative language is usually used to define both required and optional portions. (For more information, see  [[RFC2119](http://go.microsoft.com/fwlink/?LinkId=90317)].)

The following table lists the sections of  [[DOM Level 1]](http://go.microsoft.com/fwlink/?LinkId=163965) and whether they are considered normative or informative.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Sections** |  |  | **Normative/Informative** |  |
|  |  |  |  |  |  |
| 1-2 | |  |  | Normative | |
|  | |  |  |  | |
| Appendix A | |  |  | Informative | |
|  | |  |  |  | |
| Appendices B-E | |  |  | Normative | |
|  |  |  |  |  |  |



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1. **Notation**

The following notations are used in this document to differentiate between notes of clarification, variation from the specification, and extension points.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Notation** |  |  | **Explanation** |  |  |
|  |  |  |  |  |
|  |  |  |  |  |  |  |
| C#### | | |  | This identifies a clarification of ambiguity in the target specification. This includes imprecise |  |  |
|  |  |  |  | statements, omitted information, discrepancies, and errata. This does not include data |  |  |
|  |  |  |  | formatting clarifications. |  |  |
|  | | |  |  |  |  |
| V#### | | |  | This identifies an intended point of variability in the target specification such as the use of |  |  |
|  |  |  |  | MAY, SHOULD, or RECOMMENDED. (See  [[RFC2119](http://go.microsoft.com/fwlink/?LinkId=90317)].) This does not include extensibility |  |  |
|  |  |  |  | points. |  |  |
|  | | |  |  |  |  |
| E#### | | |  | Because the use of extensibility points (such as optional implementation-specific data) can |  |  |
|  |  |  |  | impair interoperability, this profile identifies such points in the target specification. |  |  |
|  |  |  |  |  |  |  |



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**2 Standards Support Statements**

This section contains a full list of variations, clarifications, and extension points in the Microsoft implementation of  [[DOM Level 1]](http://go.microsoft.com/fwlink/?LinkId=163965).

Section  [2.1](#page7) includes only those variations that violate a MUST requirement in the target specification.

Section  [2.2](#page29) describes further variations from MAY and SHOULD requirements.

Section  [2.3](#page46) identifies variations in error handling.

Section  [2.4](#page46) identifies variations that impact security

1. **Normative Variations**

The following subsections detail the normative variations from MUST requirements in  [[DOM Level 1]](http://go.microsoft.com/fwlink/?LinkId=163965).

1. **[DOM Level 1] Section 1.2, Fundamental Interfaces**

V0001:

The specification states:

IDL Definition exception DOMException {

unsigned short code; };

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **DOMException** interface is not supported.

V0002:

The specification states:

While it is true that a Document object could fulfil this role, a Document object can potentially be a heavyweight object, depending on the underlying implementation. What is really needed for this is a very lightweight object. DocumentFragment is such an object.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **DocumentFragment** interface is derived from the **Document** interface. The **createDocumentFragment** method returns a full **Document** object.

V0003:

The specification states:

IDL Definition

interface DocumentFragment : Node {



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};

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **DocumentFragment** interface is derived from the **Document** interface. The **Document** interface is derived from the **Node** interface.

V0004:

The specification states:

Method createElement

Creates an element of the type specified. Note that the instance returned implements the Element interface, so attributes can be specified directly on the returned object.

Parameters

tagName The name of the element type to instantiate. For XML, this is case-sensitive. For HTML, the tagName parameter may be provided in any case, but it must be mapped

to the canonical uppercase form by the DOM implementation.

Return Value

A new Element object.

Exceptions

DOMException

INVALID\_CHARACTER\_ERR: Raised if the specified name contains an invalid character.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The following variation apply:

The **createElement** method is overloaded with one that takes no parameters. When no parameters are given, this method returns an element with a **tagName** of null.

The **createElement** method accepts full element declaration strings that contain otherwise invalid characters for the **tagName** parameter. A parameter string such as "<div id='div1'>" would return a **div** element with an **id** of div1. An INVALID\_CHARACTER\_ERR exception is not raised in this case.

*Quirks Mode, IE7 Mode, IE8 Mode, and IE9 Mode (All Versions)*

When an element that contains an XMLNS declaration (such as <html XMLNS:mns='http://www.contoso.com'>) is specified for the **tagName** parameter, the value of the **tagUrn** property for the new element is set to the specified URI.

V0005:

The specification states:

interface Document : Node

Method createCDATASection

Creates a CDATASection node whose value is the specified string.



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Parameters data

The data for the CDATASection contents.

Return Value

The new CDATASection object.

Exceptions

DOMException NOT\_SUPPORTED\_ERR: Raised if this document is an HTML document.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **createCDATASection** method of the **Document** interface is not supported.

V0006:

The specification states:

interface Document : Node

Method createProcessingInstruction

Creates a ProcessingInstruction node given the specified name and data strings.

Parameters target

The target part of the processing instruction. data The data for the node.

Return Value

The new ProcessingInstruction object.

Exceptions

DOMException INVALID\_CHARACTER\_ERR: Raised if an invalid character is specified. NOT\_SUPPORTED\_ERR: Raised if this document is an HTML document.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **createProcessingInstruction** method of the **Document** interface is not supported.

V0008:

The specification states:

|  |  |  |
| --- | --- | --- |
| IDL Definition |  |  |
| interface Node { |  |  |
| // NodeType |  |  |
| const unsigned short | ELEMENT\_NODE | = 1; |
| const unsigned short | ATTRIBUTE\_NODE | = 2; |
| const unsigned short | TEXT\_NODE | = 3; |
| const unsigned short | CDATA\_SECTION\_NODE = 4; | |
| const unsigned short | ENTITY\_REFERENCE\_NODE = 5; | |
| const unsigned short | ENTITY\_NODE | = 6; |
| const unsigned short | PROCESSING\_INSTRUCTION\_NODE = 7; | |
| const unsigned short | COMMENT\_NODE | = 8; |
| const unsigned short | DOCUMENT\_NODE | = 9; |



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const unsigned short const unsigned short const unsigned short

DOCUMENT\_TYPE\_NODE = 10; DOCUMENT\_FRAGMENT\_NODE = 11;

|  |  |
| --- | --- |
| NOTATION\_NODE | = 12; |

|  |  |  |
| --- | --- | --- |
| readonly attribute | DOMString | nodeName; |
| attribute | DOMString | nodeValue; |
|  |  | // raises(DOMException) on setting |
|  |  | // raises(DOMException) on retrieval |
| readonly attribute | unsigned short | nodeType; |
| readonly attribute | Node | parentNode; |
| readonly attribute | NodeList | childNodes; |
| readonly attribute | Node | firstChild; |
| readonly attribute | Node | lastChild; |
| readonly attribute | Node | previousSibling; |
| readonly attribute | Node | nextSibling; |
| readonly attribute | NamedNodeMap | attributes; |
| readonly attribute | Document | ownerDocument; |
| Node | insertBefore(in Node newChild, | |
|  |  | in Node refChild) |
|  |  | raises(DOMException); |
| Node | replaceChild(in Node newChild, | |
|  |  | in Node oldChild) |
|  |  | raises(DOMException); |
| Node | removeChild(in Node oldChild) | |
|  |  | raises(DOMException); |
| Node | appendChild(in Node newChild) | |
|  |  | raises(DOMException); |
| boolean | hasChildNodes(); | |
| Node | cloneNode(in boolean deep); | |

};

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The following constants are not accessible by name:

ELEMENT\_NODE

ATTRIBUTE\_NODE

TEXT\_NODE

CDATA\_SECTION\_NODE

ENTITY\_REFERENCE\_NODE

ENTITY\_NODE

PROCESSING\_INSTRUCTION\_NODE

COMMENT\_NODE

DOCUMENT\_NODE

DOCUMENT\_TYPE\_NODE

DOCUMENT\_FRAGMENT\_NODE

NOTATION\_NODE



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V0009:

The specification states:

Definition group

NodeType

An integer indicating which type of node this is.

Defined Constants

ELEMENT\_NODE The node is a Element.

ATTRIBUTE\_NODE The node is an Attr.

TEXT\_NODE The node is a Text node.

CDATA\_SECTION\_NODE The node is a CDATASection.

ENTITY\_REFERENCE\_NODE The node is an EntityReference.

ENTITY\_NODE The node is an Entity.

PROCESSING\_INSTRUCTION\_NODE The node is a ProcessingInstruction.

COMMENT\_NODE The node is a Comment.

DOCUMENT\_NODE The node is a Document.

DOCUMENT\_TYPE\_NODE The node is a DocumentType.

DOCUMENT\_FRAGMENT\_NODE The node is a DocumentFragment.

NOTATION\_NODE The node is a Notation.

The values of nodeName, nodeValue, and attributes vary according to the node type as follows:

nodeName, nodeValue, attributes

Element tagName, null, NamedNodeMap

Attr name of attribute, value of attribute, null

Text #text, content of the text node, null

CDATASection #cdata-section, content of the CDATA Section, null

EntityReference name of entity referenced, null, null

Entity entity name, null, null

ProcessingInstruction target, entire content excluding the target, null

Comment #comment, content of the comment, null

Document #document, null, null

DocumentType document type name, null, null

DocumentFragment #document-fragment, null, null

Notation notation name, null, null

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The following constants are not supported:

ELEMENT\_NODE

ATTRIBUTE\_NODE

TEXT\_NODE

CDATA\_SECTION\_NODE

ENTITY\_REFERENCE\_NODE

ENTITY\_NODE

PROCESSING\_INSTRUCTION\_NODE

COMMENT\_NODE

DOCUMENT\_NODE



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DOCUMENT\_TYPE\_NODE

DOCUMENT\_FRAGMENT\_NODE

NOTATION\_NODE

A document type declaration is treated as a **Comment** object instead of a **DocumentType** object

V0010:

The specification states:

Attribute nodeName

The name of this node, depending on its type; see the table above.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **nodeName** property returns uppercase values except for elements with names that resemble namespaces (such as <test:elementName>) when a proprietary namespace has been declared. In this case, the **nodeName** property drops the element prefixes and does not return uppercase values.

V0011:

The specification states:

Attribute parentNode

The parent of this node. All nodes, except Document, DocumentFragment, and Attr may have a parent. However, if a node has just been created and not yet added to the tree, or if it has been removed from the tree, this is null.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

When an element without a parent has child nodes, an **HTMLDocument** object is created and set as the parent of that element.

V0012:

The specification states:

Attribute childNodes

A NodeList that contains all children of this node. If there are no children, this is a NodeList containing no nodes. The content of the returned NodeList is "live" in the sense that, for instance, changes to the children of the node object that it was created from are immediately reflected in the nodes returned by the NodeList accessors; it is not a static snapshot of the content of the node. This is true for every NodeList, including the ones returned by the getElementsByTagName method.

*All Document Modes (Internet Explorer 8)*



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Splitting multiple text nodes under an element using the **splitText** method can cause the **childNodes** collection update to be delayed. Other tree modifications cause the **childNodes** collection to synchronize again.

V0013:

The specification states:

Method

insertBefore Inserts the node newChild before the existing child node refChild. If refChild is null, insert newChild at the end of the list of children. If newChild is a DocumentFragment object, all of its children are inserted, in the same order, before refChild. If the newChild is already in the tree, it is first removed.

Parameters

newChild The node to insert.

refChild The reference node, i.e., the node before which the new node must be inserted.

Return Value

The node being inserted.

Exceptions

DOMException HIERARCHY\_REQUEST\_ERR: Raised if this node is of a type that does not allow children of the type of the newChild node, or if the node to insert is one of this node's ancestors.

WRONG\_DOCUMENT\_ERR: Raised if newChild was created from a different document than the one that created this node.

NO\_MODIFICATION\_ALLOWED\_ERR: Raised if this node is readonly. NOT\_FOUND\_ERR: Raised if refChild is not a child of this node.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The conditions to trigger the exceptions HIERARCHY\_REQUEST\_ERR and WRONG\_DOCUMENT\_ERR both result in an HRESULT 0x80070057, which creates a JavaScript Error message "Invalid argument."

The following elements cause an exception when trying to dynamically insert or append new nodes:

**APPLET**

**AREA**

**BASE**

**BGSOUND**

**BR**

**COL**

**COMMENT**

**EMBED**

**FRAME**

**HR**



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**IFRAME**

**IMG**

**INPUT**

**ISINDEX**

**LINK**

**META**

**NEXTID**

**NOEMBED**

**NOFRAMES**

**NOSCRIPT**

**OBJECT**

**PARAM**

**SCRIPT**

**STYLE**

**WBR**

V0014:

The specification states:

Method

replaceChild Replaces the child node oldChild with newChild in the list of children, and returns the oldChild node. If the newChild is already in the tree, it is first removed.

Parameters

newChild The new node to put in the child list. oldChild The node being replaced in the list.

Return Value

The node replaced.

Exceptions DOMException HIERARCHY\_REQUEST\_ERR: Raised if this node is of a type that does not allow children of the type of the newChild node, or it the node to put in is one of this node's ancestors.

WRONG\_DOCUMENT\_ERR: Raised if newChild was created from a different document than the one that created this node.

NO\_MODIFICATION\_ALLOWED\_ERR: Raised if this node is readonly. NOT\_FOUND\_ERR: Raised if oldChild is not a child of this node.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*



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The conditions to trigger HIERARCHY\_REQUEST\_ERR, WRONG\_DOCUMENT\_ERR, and NOT\_FOUND\_ERR all result in an HRESULT 0x80070057, which creates a JavaScript Error message "Invalid argument."

V0015:

The specification states:

Method

removeChild Removes the child node indicated by oldChild from the list of children, and returns it.

Parameters

oldChild The node being removed.

Return Value

The node removed.

Exceptions

DOMException NO\_MODIFICATION\_ALLOWED\_ERR: Raised if this node is readonly. NOT\_FOUND\_ERR: Raised if oldChild is not a child of this node.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

If the child node indicated by the **oldChild** parameter is not from the list of child nodes, the **removeChild** method of the **Node** interface raises a **JSError** exception with an error message of"Invalid argument" and an HRESULT of 0x80070057.

V0016:

The specification states:

Method

appendChild Adds the node newChild to the end of the list of children of this node. If the newChild is already in the tree, it is first removed.

Parameters

newChild The node to add. If it is a DocumentFragment object, the entire contents of the document fragment are moved into the child list of this node

Return Value

The node added.

Exceptions

DOMException HIERARCHY\_REQUEST\_ERR: Raised if this node is of a type that does not allow children of the type of the newChild node, or if the node to append is one of this node's ancestors.

WRONG\_DOCUMENT\_ERR: Raised if newChild was created from a different document than the one that created this node.

NO\_MODIFICATION\_ALLOWED\_ERR: Raised if this node is readonly.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The conditions to trigger HIERARCHY\_REQUEST\_ERR and WRONG\_DOCUMENT\_ERR both result in an HRESULT 0x80070057, which creates a JavaScript Error message "Invalid argument."



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The following elements cause an exception when trying to dynamically insert or append new nodes:

**APPLET**

**AREA**

**BASE**

**BGSOUND**

**BR**

**COL**

**COMMENT**

**EMBED**

**FRAME**

**HR**

**IFRAME**

**IMG**

**INPUT**

**ISINDEX**

**LINK**

**META**

**NEXTID**

**NOEMBED**

**NOFRAMES**

**NOSCRIPT**

**OBJECT**

**PARAM**

**SCRIPT**

**STYLE**

**WBR**

V0017:

The specification states:

Method

setNamedItem Adds a node using its nodeName attribute. As the nodeName attribute is used to derive the name which the node must be stored under, multiple nodes of



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certain types (those that have a "special" string value) cannot be stored as the names would clash. This is seen as preferable to allowing nodes to be aliased.

Parameters

arg A node to store in a named node map. The node will later be accessible using the value of the nodeName attribute of the node. If a node with that name is already present in the map, it is replaced by the new one.

Return Value

If the new Node replaces an existing node with the same name the previously existing Node is returned, otherwise null is returned.

Exceptions

DOMException WRONG\_DOCUMENT\_ERR: Raised if arg was created from a different document than the one that created the NamedNodeMap. NO\_MODIFICATION\_ALLOWED\_ERR: Raised if this NamedNodeMap is readonly. INUSE\_ATTRIBUTE\_ERR: Raised if arg is an Attr that is already an attribute of another Element object. The DOM user must explicitly clone Attr nodes to re-use them in other elements.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The following variations apply:

The WRONG\_DOCUMENT\_ERR exception is not raised if the **arg** parameter was created from a document other than the one that created **NamedNodeMap**.

Instead of the INUSE\_ATTRIBUTE\_ERR exception, if **arg** is an **Attr** that is already an attribute of another **Element** object, the **setNamedItem** method of the **Node** interface raises a JSError exception with an error message of "Invalid argument" and an HRESULT of 0x80070057.

V0018:

The specification states:

Method

item Returns the indexth item in the map. If index is greater than or equal to the number of nodes in the map, this returns null.

Parameters

index Index into the map.

Return Value

The node at the indexth position in the NamedNodeMap, or null if that is not a valid index.

This method raises no exceptions.

*Quirks Mode and IE7 Mode (All Versions)*

Instead of returning null when the **index** parameter is greater than the number of nodes in the map, the **item** method of the **Node** interface throws a JSError exception with an error message of

"Invalid argument" and an HRESULT of 0x80070057.

V0019:



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The specification states:

Method

substringData Extracts a range of data from the node.

Parameters

offset Start offset of substring to extract. count The number of characters to extract.

Return Value

The specified substring. If the sum of offset and count exceeds the length, then all characters to the end of the data are returned.

Exceptions

DOMException INDEX\_SIZE\_ERR: Raised if the specified offset is negative or greater than the number of characters in data, or if the specified count is negative. DOMSTRING\_SIZE\_ERR: Raised if the specified range of text does not fit into a DOMString.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The following variations apply:

No exception is raised if the offset is greater than the number of 16-bit units in the data.

Instead of the **INDEX\_SIZE\_ERR** DOMException, if the specified offset is negative or greater than the number of characters in the data or the specified count is negative, the **substringData** method of the **Node** interface raises a JScript Error exception with an error message of "Invalid argument" and an HRESULT of 0x80070057.

V0020:

The specification states:

Attribute specified

If this attribute was explicitly given a value in the original document, this is true; otherwise, it is false. Note that the implementation is in charge of this attribute, not the user. If the user changes the value of the attribute (even if it ends up having the same value as the default value) then the specified flag is automatically flipped to true. To re-specify the attribute as the default value from the DTD, the user must delete the attribute. The implementation will then make a new attribute available with specified set to false and the default value (if one exists). In summary:

* If the attribute has an assigned value in the document then specified is true, and the value is the assigned value.
* If the attribute has no assigned value in the document and has a default value in the DTD, then specified is false, and the value is the default value in the DTD.

*Quirks Mode and IE7 Mode (All Versions)*

The value of the **specified** attribute is not automatically flipped when the associated attribute is changed.

V0021:

The specification states:



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Elements may have attributes associated with them; since the Element interface inherits from Node, the generic Node interface method getAttributes may be used to retrieve the set of all attributes for an element. There are methods on the Element interface to retrieve either an Attr object by name or an attribute value by name. In XML, where an attribute value may contain entity references, an Attr object should be retrieved to examine the possibly fairly complex sub-tree representing the attribute value. On the other hand, in HTML, where all attributes have simple string values, methods to directly access an attribute value can safely be used as a convenience.

*All Document Modes (All Versions)*

The **getAttributes** method is not supported.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

Attribute subtrees are not supported.

*IE9 Mode and IE10 Mode (All Versions)*

For any given attribute, only a single, immutable text node is supported as the subtree. V0022:

The specification states:

Attribute tagName

The name of the element. For example, in: <elementExample id="demo"> ...

</elementExample> ,tagName has the value "elementExample". Note that this is case-preserving in XML, as are all of the operations of the DOM. The HTML DOM returns the tagName of an HTML element in the canonical uppercase form, regardless of the case in the source HTML document.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **tagName** property returns uppercase values except for elements with names that resemble namespaces (such as <test:elementName>) when a proprietary namespace has been declared. In this case, the **tagName** property drops the element prefixes and does not return uppercase values.

V0023:

The specification states:

Method

getAttribute Retrieves an attribute value by name.

Parameters

name The name of the attribute to retrieve.

Return Value The Attr value as a string, or the empty string if that attribute does not have a specified or default value.

This method raises no exceptions.



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*Quirks Mode and IE7 Mode (All Versions)*

The **getAttribute** method supports a second parameter called **iFlags**. The **iFlags** parameter controls case sensitivity and object interpolation. By default, **iFlags** is set to 0, which indicates that the property search done by the **getAttribute** method is not case-sensitive and returns an interpolated value if the property is found.

V0024:

The specification states:

Method

setAttribute Adds a new attribute. If an attribute with that name is already present in the element, its value is changed to be that of the value parameter. This value is a simple string, it is not parsed as it is being set. So any markup (such as syntax to be recognized as an entity reference) is treated as literal text, and needs to be appropriately escaped by the implementation when it is written out. In order to assign an attribute value that contains entity references, the user must create an Attr node plus any Text and EntityReference nodes, build

the appropriate subtree, and use setAttributeNode to assign it as the value of an attribute.

Parameters

name The name of the attribute to create or alter. value Value to set in string form.

Exceptions DOMException INVALID\_CHARACTER\_ERR: Raised if the specified name contains an invalid character.

NO\_MODIFICATION\_ALLOWED\_ERR: Raised if this node is readonly.

This method returns nothing.

*Quirks Mode and IE7 Mode (All Versions)*

The following variations apply:

The **setAttribute** method assigns attributes in a case-sensitive manner (expected case-insensitive for HTML).

The second parameter of the **setAttribute** method accepts only strings, not objects. An optional third parameter controls case sensitivity.

Attributes that apply a boolean initial state to the associated DOM properties (for example, **value** and **checked**) are incorrectly associated with their live property rather than their default property. For example, the **setAttribute** method ('checked', 'checked') toggles the DOM **checked** property (the live view of a check box) rather than the **defaultChecked** property(initial value).

The HTML **style** attribute and attributes that are event handlers do not apply their conditions when used with **setAttribute**.

The **setAttribute** method requires DOM property names to apply effects for certain attribute names, such as **className** (instead of 'class'), **htmlFor** (instead of 'for'), and **httpEquiv** (instead of 'http-equiv').

V0025:

The specification states:



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Method

removeAttribute Removes an attribute by name. If the removed attribute has a default value it is immediately replaced.

Parameters

name The name of the attribute to remove.

Exceptions DOMException NO\_MODIFICATION\_ALLOWED\_ERR: Raised if this node is readonly.

This method returns nothing.

*Quirks Mode and IE7 Mode (All Versions)*

The following variations apply:

The **removeAttribute** method supports an additional parameter called **iCaseSensitive**. The **iCaseSensitive** parameter specifies whether to use a case-sensitive search to find the attribute.Removal of event handler attributes (such as **onClick**) or the style attribute does not cause the actual event handler to be removed, or the inline style to be removed.

Default attributes are not re-created after the attribute is removed.

*All Document Modes (All Versions)*

The following variations apply:

The **removeAttribute** method of the **Element** interface exists on **CSSStyleDeclaration** objects that are used for inline styles, runtime styles, and style rules.

The **removeAttribute** method returns a Boolean value that indicates whether the operation has succeeded or failed. The **removeAttribute** method is also available on the following objects: **element.currentStyle**, **element.runtimeStyle**, **element.style**, and **stylesheet.style**.

V0026:

The specification states:

Method

removeAttributeNode Removes the specified attribute. Parameters

oldAttr The Attr node to remove from the attribute list. If the removed Attr has a default value it is immediately replaced.

Return Value The Attr node that was removed.

Exceptions DOMException NO\_MODIFICATION\_ALLOWED\_ERR: Raised if this node is readonly. NOT\_FOUND\_ERR: Raised if oldAttr is not an attribute of the element.

*Quirks Mode and IE7 Mode (All Versions)*

Default attributes are not re-created after an attribute is removed with the **removeAttributeNode** method. Removal of event handler attributes (such as **onclick**) or the **style** attribute does not cause the actual event handler or the inline style to be removed.

V0027:



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The specification states:

Method getElementsByTagName

Returns a NodeList of all descendant elements with a given tag name, in the order in which they would be encountered in a preorder traversal of the Element tree.

Parameters

name The name of the tag to match on. The special value "\*" matches all tags.

Return Value

A list of matching Element nodes.

This method raises no exceptions.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The following variations apply:

When called on an **object** element, where the value "\*" is passed in as the value of the **name** parameter, the **getElementsByTagName** method returns an empty **NodeList**.

When called on an **OBJECT** element, where param is passed in as the value of the **name** parameter, the **getElementsByTagName** method returns a **NodeList** that contains all the **PARAM** elements in the document.

V0028:

The specification states:

Method splitText

Breaks this Text node into two Text nodes at the specified offset, keeping both in the tree as siblings. This node then only contains all the content up to the offset point. And a new Text node, which is inserted as the next sibling of this node, contains all the content at and after the offset point.

Parameters

offset The offset at which to split, starting from 0.

Return Value

The new Text node.

Exceptions

DOMException INDEX\_SIZE\_ERR: Raised if the specified offset is negative or greater than the number of characters in data.

NO\_MODIFICATION\_ALLOWED\_ERR: Raised if this node is readonly.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **offset** parameter is treated as though it is optional. If no offset is provided, then a default offset of 0 is used.

*All Document Modes (Internet Explorer 8)*



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The **childNodes** objects are kept in a cache and are invalidated whenever there is a modification to the markup. Calling the **splitText** method of the **Text** interface does not trigger a markup modification. The **childNodes** collection does not show changes made by **splitText** until the markup is modified, for example, by changing the text of a **DIV** element anywhere on the page.

1. **[DOM Level 1] Section 2.4, Objects related to HTML documents**

V0029:

The specification states:

Attribute domain

The domain name of the server that served the document, or a null string if the server cannot be identified by a domain name.

*All Document Modes (All Versions)*

An empty string is assigned to the value of the **domain** attribute when the local machine is the server.

1. **[DOM Level 1] Section 2.5.5, Object definitions**

V0030:

The specification states:

interface HTMLSelectElement : HTMLElement

Method

add Add a new element to the collection of OPTION elements for this SELECT.

Parameters

element The element to add.

before The element to insert before, or NULL for the head of the list.

This method returns nothing.

This method raises no exceptions.

*Quirks Mode and IE7 Mode (All Versions)*

The **add** method of the **HTMLSelectElement** interface is not supported.

*IE8 Mode, IE9 Mode, and IE10 Mode (All Versions)*

The **add** method of the **HTMLSelectElement** appends the element to the bottom of the list when the **before** parameter is null.

V0031:

The specification states:

IDL Definition

interface HTMLOptionElement : HTMLElement {



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|  |  |  |
| --- | --- | --- |
| readonly attribute | HTMLFormElement | form; |
| attribute | boolean | defaultSelected; |
| readonly attribute | DOMString | text; |
| attribute | long | index; |
| attribute | boolean | disabled; |
| attribute | DOMString | label; |
| readonly attribute | boolean | selected; |
| attribute | DOMString | value; |
| }; |  |  |

*All Document Modes (All Versions)*

The **text** attribute of the **HTMLOptionElement** interface is not read-only.

V0032:

The specification states:

Attribute align

Aligns this object (vertically or horizontally) with respect to its surrounding

text. See the align attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

When specified in HTML, the **align** attribute of the **INPUT** element is ignored and the DOM **align** attribute returns an empty string.

V0033:

The specification states:

Attribute useMap

Use client-side image map. See the usemap attribute definition in HTML 4.0.

*All Document Modes (All Versions)*

The value of the **useMap** attribute is set to the value of the **usemap** attribute in HTML. This string is not constrained to the name of the associated **MAP** element.

V0034:

The specification states:

Attribute value

Reset sequence number when used in OL See the value attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*All Document Modes (All Versions)*



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The **value** attribute of an **LI** element cannot be used to reset the sequence number in an **OL** element.

V0035:

The specification states:

IDL Definition

interface HTMLPreElement : HTMLElement {

attribute long width;

};

*All Document Modes (All Versions)*

The **width** attribute of a **PRE** element is treated as a string.

V0036:

The specification states:

interface HTMLBaseFontElement : HTMLElement interface HTMLFontElement : HTMLElement

Attribute color

Font color. See the color attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*All Document Modes (All Versions)*

If the value of the **color** attribute is specified as a color string (such as black) in HTML, the value is converted and stored as a hexadecimal RGB color value in the DOM **color** attribute.

V0037:

The specification states:

IDL Definition

interface HTMLAppletElement : HTMLElement {

|  |  |  |
| --- | --- | --- |
| attribute | DOMString | align; |
| attribute | DOMString | alt; |
| attribute | DOMString | archive; |
| attribute | DOMString | code; |
| attribute | DOMString | codeBase; |
| attribute | DOMString | height; |
| attribute | DOMString | hspace; |
| attribute | DOMString | name; |
| attribute | DOMString | object; |
| attribute | DOMString | vspace; |
| attribute | DOMString | width;}; |

*All Document Modes (All Versions)*

The following variations apply:



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The value of the **hspace** attribute is of type **number**.

The value of the **vspace** attribute is of type **number**.

The value of the **object** attribute is of type **object**.

V0038:

The specification states:

Attribute object

Serialized applet file. See the object attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*All Document Modes (All Versions)*

The **object** attribute of the **APPLET** element is not supported.

V0039:

The specification states:

interface HTMLScriptElement : HTMLElement

Attribute src

URI designating an external script. See the src attribute definition in HTML 4.0.

*IE8 Mode, IE9 Mode, and IE10 Mode (All Versions)*

When the value of the **src** attribute for the **SCRIPT** element is specified in HTML as a relative URI, the value is converted and stored as an absolute URI in the **src** attribute of the

**HTMLScriptElement**.

V0041:

The specification states:

Attribute bgColor

Cell background color. See the bgcolor attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*All Document Modes (All Versions)*

If the value of the **bgcolor** attribute is specified as a color string (such as black) in HTML, the value is converted and stored as a hexadecimal RGB color value in the DOM **bgColor** attribute.

V0042:

The specification states:

Attribute align



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Horizontal alignment of data within cells of this row. See the align attribute definition in HTML 4.0.

*All Document Modes (All Versions)*

The char and justify values are not supported for the **align** attribute of a **TR** element. V0043:

The specification states:

Attribute ch

Alignment character for cells in a column. See the char attribute definition in HTML 4.0.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **ch** attribute on the **TR** element is not supported. The **ch** attribute can be written to and read from the DOM, but it does not change the alignment of text within a cell.

V0044:

The specification states:

Attribute chOff

Offset of alignment character. See the charoff attribute definition in HTML 4.0.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **chOff** attribute on the **TR** element is not supported. The **ch** attribute can be written to and read from the DOM, but it does not change the offset of the alignment.

V0045:

The specification states:

Attribute rowSpan

Number of rows spanned by cell. See the rowspan attribute definition in HTML 4.0.

*Quirks Mode and IE7 Mode (All Versions)*

If the **rowspan** attribute specified on a cell is greater than the number of rows in a table, the value of this attribute is modified to become equal to the number of rows in the table.

V0047:

The specification states:

Attribute marginHeight

Frame margin height, in pixels. See the marginheight attribute definition in HTML 4.0.



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*All Document Modes (All Versions)*

The **marginHeight** attribute is an expando attribute. If the **marginheight** attribute and value are declared in markup, the value is stored and returned by the **marginHeight** attribute. If no value is specified, **marginHeight** is undefined.

V0048:

The specification states:

marginWidth

Frame margin width, in pixels. See the marginwidth attribute definition in HTML 4.0.

*All Document Modes (All Versions)*

**marginWidth** is an expando attribute. If the **marginwidth** attribute and value are declared inmarkup, the value is stored and returned by the **marginWidth** attribute. If no value is specified, **marginWidth** is undefined.

V0049:

The specification states:

name

The frame name (object of the target attribute). See the name attribute definition in HTML 4.0.

*All Document Modes (All Versions)*

**name** is an expando attribute. If the **name** attribute and value are declared in markup, the value isstored and returned by the **name** attribute. If no value is specified, **name** returns an empty string in the DOM.

V0050:

The specification states:

Attribute scrolling

Specify whether or not the frame should have scrollbars. See the scrolling attribute definition in HTML 4.0.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **scrolling** attribute is an expando attribute. If the **scrolling** attribute and value are declared in markup, the value is stored and returned by the **scrolling** attribute. If no value is specified, **scrolling** is undefined in the DOM.

V0051:

The specification states:

Attribute longDesc

URI designating a long description of this image or frame. See the longdesc



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attribute definition in HTML 4.0.

*IE8 Mode, IE9 Mode, and IE10 Mode (All Versions)*

When the value of the **longdesc** attribute for the **IFRAME** element is specified in HTML as a relative URI, the value is converted and stored as an absolute URI in the **longDesc** attribute of the **HTMLIFrameElement**. If not already present, a slash is appended to the end of the URI when a filename is not specified.

V0052:

The specification states:

Attribute src

A URI designating the initial frame contents. See the src attribute definition in HTML 4.0.

*IE8 Mode, IE9 Mode, and IE10 Mode (All Versions)*

The **src** attribute is treated as an absolute URI. If no trailing slash is provided, the slash is included when the attribute is fixed up to become an absolute URI before being applied to the DOM property.

1. **Clarifications**

The following subsections identify clarifications to recommendations made by  [[DOM Level 1]](http://go.microsoft.com/fwlink/?LinkId=163965).

1. **[DOM Level 1] Section 1.2, Fundamental Interfaces**

C0001:

The specification states:

Method

createDocumentFragment Creates an empty DocumentFragment object.

Return Value

A new DocumentFragment.

This method has no parameters.

This method raises no exceptions.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **createDocumentFragment** method returns an object that is derived from the **document** interface.

C0002:

The specification states:

Method

createTextNode Creates a Text node given the specified string.



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Parameters

data The data for the node.

Return Value

The new Text object.

This method raises no exceptions.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **data** parameter is treated as optional. The **createTextNode** method creates a text node even when no parameter is provided.

C0003:

The specification states:

Method

createComment Creates a Comment node given the specified string.

Parameters

data The data for the node.

Return Value

The new Comment object.

This method raises no exceptions.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **data** parameter is treated as optional. The **createComment** method creates a COMMENT node even when no parameter is provided.

C0004:

The specification states:

Method

getAttributeNode Retrieves an Attr node by name.

Parameters

name The name of the attribute to retrieve.

Return Value

The Attr node with the specified attribute name or null if there is no such attribute.

This method raises no exceptions.

*Quirks Mode and IE7 Mode (All Versions)*

The **nodeValue** attribute of the object returned from the **getAttributeNode** method returns an empty string if an attribute has not been assigned a value in HTML.

*IE8 Mode (All Versions)*



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The **getAttributeNode** method returns null if an attribute is specified but has not been assigned a value in HTML.

C0005:

The specification states:

Method normalize

Puts all Text nodes in the full depth of the sub-tree underneath this

Element into a "normal" form where only markup (e.g., tags, comments, processing instructions, CDATA sections, and entity references) separates Text nodes, i.e., there are no adjacent Text nodes. This can be used to ensure that the DOM view of a document is the same as if it were saved and re-loaded, and is useful when operations (such as XPointer lookups) that depend on a particular document tree structure are to be used.

This method has no parameters.

This method returns nothing.

This method raises no exceptions.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The following clarifications apply:

If the **normalize** method is called on an empty text node, the text node is not combined with adjacent text nodes that have content.

If the **normalize** method is called on a text node that is empty and is the only child node of an element, the text node is not removed.

1. **[DOM Level 1] Section 2.4, Objects related to HTML documents**

C0006:

The specification states:

Attribute cookie

The cookies associated with this document.

*All Document Modes (All Versions)*

An item is not added to the cookie collection if the optional path=<some\_path> string sequence specifies a file name. The value of <some\_path> is limited to a subset of URLs for which the cookie is valid.

*All Document Modes (Internet Explorer 7)*

The maximum size for the value of the **cookie** attribute is defined as 4096 bytes (4 KB).

*All Document Modes (All Versions except Internet Explorer 7)*

The maximum size for the value of the **cookie** attribute is defined as 10240 bytes (10Kb).



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C0007:

The specification states:

Method

getElementsByName Returns the (possibly empty) collection of elements whose name value is given by elementName.

Parameters

elementName The name attribute value for an element.

Return Value The matching elements.

This method raises no exceptions.

*IE8 Mode, IE9 Mode, and IE10 Mode (All Versions)*

A collection of elements is returned where each element name, id, or uniquename attribute value matches the **elementName** parameter.

1. **[DOM Level 1] Section 2.5.1, Property Attributes**

C0008:

The specification states:

The return value of an attribute that has a data type that is a value list is always capitalized, independent of the case of the value in the source document.

*All Document Modes (All Versions)*

Value list attribute values are converted to lowercase.

1. **[DOM Level 1] Section 2.5.5, Object definitions**

C0009:

The specification states:

Attributes aLink

Color of active links (after mouse-button down, but before mouse-button up). See

the alink attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*Quirks Mode and IE7 Mode (All Versions)*

The value of the **aLink** attribute is always converted into a hexadecimal RGB value when it is stored in the DOM or retrieved using the **getAttribute** method.

*IE8 Mode, IE9 Mode, and IE10 Mode (All Versions)*

The value of the **aLink** property of the **HTMLBodyElement** interface is stored in the DOM as a hexadecimal RGB value (i.e. setting it to "blue" yields #0000FF for the color when retrieved via

BODY.aLink).



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C0010:

The specification states:

Attribute background

URI of the background texture tile image. See the background attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*IE8 Mode (All Versions)*

When the value of the **background** attribute for the **BODY** element is specified in HTML as a relative URI, the value is converted and stored as an absolute URI in the **background** attribute of the **HTMLBodyElement**.

C0011:

The specification states:

Attribute bgColor

Document background color. See the bgcolor attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*All Document Modes (All Versions)*

If the value of the **bgcolor** attribute is specified as a color string (such as black) in HTML, the value is converted and stored as a hexadecimal RGB color value in the **bgColor** attribute of the

**HTMLBodyElement** interface.

C0012:

The specification states:

Attribute link

Color of links that are not active and unvisited. See the link attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*All Document Modes (All Versions)*

If the value of the **link** attribute is specified as a color string (such as black) in HTML, the value is converted and stored as a hexadecimal RGB color value in the **link** attribute of the

**HTMLBodyElement** interface.

C0013:

The specification states:

Attribute text

Document text color. See the text attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.



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*All Document Modes (All Versions)*

If the value of the **text** attribute is specified as a color string (such as black) in HTML, the value is converted and stored as a hexadecimal RGB color value in the **text** attribute of the

**HTMLBodyElement** interface.

C0014:

The specification states:

Attribute vLink

Color of links that have been visited by the user. See the vlink attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*All Document Modes (All Versions)*

If the value of the **vlink** attribute is specified as a color string (such as black) in HTML, the value is converted and stored as a hexadecimal RGB color value in the **vLink** attribute of the

**HTMLBodyElement** interface.

C0015:

The specification states:

Attribute elements

Returns a collection of all control elements in the form.

*All Document Modes (All Versions)*

**FIELDSET** elements are included when compiling theelementscollection of a form.

C0016:

The specification states:

Attribute length

The number of form controls in the form.

*All Document Modes (All Versions)*

The **FIELDSET** element is included when counting the number of form controls in a form.

C0017:

The specification states:

Attribute acceptCharset

List of character sets supported by the server. See the accept-charset attribute definition in HTML 4.0.



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*All Document Modes (All Versions)*

The value of acceptCharset is set to unknown when no value is supplied for the **accept-charset** attribute of a **FORM** element.

C0018:

The specification states:

Attribute action

Server-side form handler. See the action attribute definition in HTML 4.0.

*IE8 Mode and IE9 (All Versions)*

When the value of the **action** attribute for the **FORM** element is specified in HTML as a relative URI, the value is converted and stored as an absolute URI in the **action** attribute of the **HTMLFormElement**. If not already present, a slash is appended to the end of the URI when a filename is not specified.

C0019:

The specification states:

Attribute type

The type of control created.

*All Document Modes (All Versions)*

The **type** attribute returns a value of select-one.

C0020:

The specification states:

Attribute value

The current form control value.

*All Document Modes (All Versions)*

The **value** attribute of **HTMLSelectElement** returns the value of the **OPTION** element identified by the **selectedIndex** attribute of **HTMLSelectElement**.

C0021:

The specification states:

Attribute length

The number of options in this SELECT.

*All Document Modes (All Versions)*



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The following clarifications apply:

The length attribute is not read-only.

When the value of the length attribute is increased, the number of items in the **select** list collection is increased by appending empty items to the end of the list. The **length** property of the element is adjusted accordingly.

When the value of the length attribute is decreased, the number of items in the **select** list collection is decreased by removing items from the end of the list. The **length** property of the element is adjusted accordingly, and the removed items and their values are not recoverable.

C0022:

The specification states:

Attribute disabled

The control is unavailable in this context. See the disabled attribute definition in HTML 4.0.

*All Document Modes (All Versions)*

**HTMLSelectElement.disabled** returnstrueif the content attribute is set to a value other thanfalse or no value.

Various attributes of a disabled element are allowed to be set and the disabled element updated accordingly. For example, if the **length** attribute of a disabled **SELECT** element is set, the number of items in the **select** list collection is updated, and the disabled element is rendered.

C0023:

The specification states:

Attribute tabIndex

Index that represents the element's position in the tabbing order. See the tabindex attribute definition in HTML 4.0.

*All Document Modes (All Versions)*

The value of the **tabIndex** attribute is returned as 0 if the **tabIndex** attribute of the element is declared and the attribute value is not specified or invalid.

C0024:

The specification states:

Attribute index

The index of this OPTION in its parent SELECT.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **index** attribute is read-only.



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C0025:

The specification states:

Form control.

Note. Depending upon the environment the page is being viewed, the value property may be read-only for the file upload input type. For the "password" input type, the actual value returned may be masked to prevent unauthorized use. See the INPUT element definition in HTML 4.0.

*All Document Modes (All Versions)*

The following clarifications apply:

The **value** attribute cannot be set or retrieved if the **type** attribute of the **INPUT** element has a value of file.

If an **INPUT** element has a **type** attribute with a value of password, the text field is not masked when the value for the field is retrieved from the **value** attribute of **HTMLInputElement**.

C0026:

The specification states:

Attribute type

The type of button. See the type attribute definition in HTML 4.0.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **type** attribute of a button cannot be set.

C0027:

The specification states:

Attribute value

The current form control value. See the value attribute definition in HTML 4.0.

*Quirks Mode and IE7 Mode (All Versions)*

Text contained by a **BUTTON** element is returned by the **value** attribute of **HTMLButtonElement**. If no text is contained by the **BUTTON** element, the value of the **value** attribute for the **BUTTON** element is returned. If no value is assigned or the **value** attribute is not specified for the **BUTTON** element, the **value** attribute of **HTMLButtonElement** returns an empty string.

C0029:

The specification states:

Attribute href

The URI of the linked resource. See the href attribute definition in HTML 4.0.



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*IE8 Mode and IE9 (All Versions)*

When the value of the **href** attribute for the **A** element is specified in HTML as a relative URI, the value is converted and stored as an absolute URI in the **href** attribute of the **HTMLAnchorElement**. If not already present, a slash is appended to the end of the URI when a filename is not specified.

C0030:

The specification states:

|  |  |  |
| --- | --- | --- |
| IDL Definition |  |  |
| interface HTMLImageElement : HTMLElement { | |  |
| attribute | DOMString | lowSrc; |
| attribute | DOMString | name; |
| attribute | DOMString | align; |
| attribute | DOMString | alt; |
| attribute | DOMString | border; |
| attribute | DOMString | height; |
| attribute | DOMString | hspace; |
| attribute | boolean | isMap; |
| attribute | DOMString | longDesc; |
| attribute | DOMString | src; |
| attribute | DOMString | useMap; |
| attribute | DOMString | vspace; |
| attribute | DOMString | width; |
| }; |  |  |

*All Document Modes (All Versions)*

The following clarifications apply:

The height, width, vspace, and hspace attributes are converted to long integers

The lowSrc attribute is not supported

C0031:

The specification states:

Attribute longDesc

URI designating a long description of this image or frame. See the longdesc attribute definition in HTML 4.0.

*IE8 Mode, IE9 Mode, and IE10 Mode (All Versions)*

When the value of the **longdesc** attribute for the **IMG** element is specified in HTML as a relative URI, the value is converted and stored as an absolute URI in the **longDesc** attribute of the **HTMLImageElement**. If not already present, a slash is appended to the end of the URI when a filename is not specified.

C0032:

The specification states:



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Attribute src

URI designating the source of this image. See the src attribute definition in HTML 4.0.

*All Document Modes (All Versions)*

The **src** value is converted into an absolute URI.

C0033:

The specification states:

Attribute align

Aligns this object (vertically or horizontally) with respect to its surrounding text. See the align attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*All Document Modes (All Versions)*

The **align** attribute returns an empty string as a default value.

C0034:

The specification states:

Attribute codeBase

Base URI for classid, data, and archive attributes. See the codebase attribute definition in HTML 4.0.

*All Document Modes (All Versions)*

The **codeBase** attribute returns an empty string as a default value.

C0035:

The specification states:

Attribute codeType

Content type for data downloaded via classid attribute. See the codetype attribute definition in HTML 4.0.

*All Document Modes (All Versions)*

The **codeType** attribute returns an empty string as a default value.

C0036:

The specification states:

Attribute data



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A URI specifying the location of the object's data. See the data attribute definition in HTML 4.0.

*IE8 Mode, IE9 Mode, and IE10 Mode (All Versions)*

When the value of the **data** attribute for the **OBJECT** element is specified in HTML as a relative URI, the value is converted and stored as an absolute URI in the **data** attribute of the

**HTMLObjectElement**.

C0037:

The specification states:

Attribute hspace

Horizontal space to the left and right of this image, applet, or object. See the hspace attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*All Document Modes (All Versions)*

The **hspace** attribute is treated as a number.

C0038:

The specification states:

Attribute vspace

Vertical space above and below this image, applet, or object. See the vspace attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*All Document Modes (All Versions)*

The **vspace** attribute is treated as a number.

C0039:

The specification states:

|  |  |  |
| --- | --- | --- |
| IDL Definition |  |  |
| interface HTMLParamElement : HTMLElement { | |  |
| attribute | DOMString | name; |
| attribute | DOMString | type; |
| attribute | DOMString | value; |
| attribute | DOMString | valueType; |
| }; |  |  |

*All Document Modes (All Versions)*

The default value for **valueType** is an empty string.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*



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If the **name** attribute is not provided on the **PARAM** element by the author, the element is not created in the DOM by the HTML parser.

C0040:

The specification states:

Attribute valueType

Information about the meaning of the value attribute value. See the valuetype attribute definition in HTML 4.0.

*Quirks Mode and IE7 Mode (All Versions)*

The default value for the **valueType** attribute is an empty string.

C0041:

The specification states:

Attribute hspace

Horizontal space to the left and right of this image, applet, or object. See the hspace attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*All Document Modes (All Versions)*

The **hspace** attribute is treated as a number.

C0042:

The specification states:

Attribute href

The URI of the linked resource. See the href attribute definition in HTML 4.0.

*IE8 Mode, IE9 Mode, and IE10 Mode (All Versions)*

When reading the value of the **href** attribute specified in markup, an extra slash (/) is added at end of the string to make it an absolute URI if it is not already an absolute URI. If the value of the **href** attribute is set through script, then the extra slash is not added.

C0043:

The specification states:

Attribute shape

The shape of the active area. The coordinates are given by coords. See the shape attribute definition in HTML 4.0

*Quirks Mode and IE7 Mode (All Versions)*



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Shape attribute elements are capitalized when read from the DOM. For example, HTML markup shape="circle" is read by the DOM as CIRCLE.

*IE8 Mode, IE9 Mode, and IE10 Mode (All Versions)*

shape="default" is interpreted as "rect".

C0044:

The specification states:

Method

deleteRow Delete a table row. Parameters

index The index of the row to be deleted. This method returns nothing.

This method raises no exceptions.

*All Document Modes (All Versions)*

The **deleteRow** method with no parameters is also supported. When calling the **deleteRow** method with no parameters, the last row of the table is deleted.

C0045:

The specification states:

Interface HTMLTableSectionElement

Attribute align

Horizontal alignment of data in cells. See the align attribute for HTMLTheadElement for details.

*All Document Modes (All Versions)*

The **Align** attribute is supported as described. However, the **HTMLTheadElement** interface referred to in the specification for the **Align** attribute is not defined in  [[DOM Level 1]](http://go.microsoft.com/fwlink/?LinkId=163965).

C0046:

The specification states:

Attribute ch

Alignment character for cells in a column. See the char attribute definition in HTML 4.0.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **ch** attribute is always returned as an empty string.

C0047:

The specification states:

Attribute



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chOff

Offset of alignment character. See the charoff attribute definition in HTML 4.0.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **chOff** attribute is always returned as an empty string.

C0048:

The specification states:

Interface HTMLTableSectionElement

Attribute vAlign

Vertical alignment of data in cells. See the valign attribute for HTMLTheadElement for details.

*All Document Modes (All Versions)*

The **vAlign** attribute is supported as described. However, the **HTMLTheadElement** interface referred to in the specification for the **vAlign** attribute is not defined in  [[DOM Level 1]](http://go.microsoft.com/fwlink/?LinkId=163965).

C0049:

The specification states:

Method

insertRow Insert a row into this section. Parameters

index The row number where to insert a new row. Return Value

The newly created row.

This method raises no exceptions.

*All Document Modes (All Versions)*

Specifying a value of -1 for the **index** parameter causes the **insertRow** method to append a new row to the bottom of the table.

C0050:

The specification states:

Method

deleteRow Delete a row from this section. Parameters

index The index of the row to be deleted. This method returns nothing.

This method raises no exceptions.

*All Document Modes (All Versions)*



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Specifying a value of -1 for the **index** parameter causes the **deleteRow** method to remove the last row of the table. This behavior is expected in DOM L2 but not in DOM L1.

C0051:

The specification states:

Attribute align

Horizontal alignment of data in cell. See the align attribute definition in HTML 4.0.

*All Document Modes (All Versions)*

The values char or justify are not recognized as valid choices for the **align** attribute in a **TD** element. If char or justify are set in HTML for a **TD** element, **td.align** evaluates to an empty string.

C0052:

The specification states:

Attribute bgColor

Cell background color. See the bgcolor attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*Quirks Mode and IE7 Mode (All Versions)*

The value of the **bgColor** attribute in a **TD** element is always converted to a hexadecimal RGB value when it is stored in the DOM. For example, setting the **bgColor** attribute of a **TD** element to blue in HTML yields a value of #0000FF for the **bgColor** attribute when retrieved using the **getAttribute** method.

*IE8 Mode, IE9 Mode, and IE10 Mode (All Versions)*

The value of the **bgColor** attribute in a **TD** element remains the same as the author's original setting in HTML. For example, setting the **bgColor** attribute of a **TD** element to blue in HTML yields a value of blue when using the **getAttribute** method to retrieve the color.

However, the value of the **bgColor** property of the **HTMLFontElement** interface is stored in the DOM as a hexadecimal RGB value (for example, setting it to blue in HTML yields #0000FF for the color when retrieved using TD.bgColor).

C0053:

The specification states:

Attribute ch

Alignment character for cells in a column. See the char attribute definition in HTML 4.0.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **char** attribute is not associated with the **ch** attribute in the DOM.



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C0054:

The specification states:

Attribute chOff

Offset of alignment character. See the charoff attribute definition in HTML 4.0.

*Quirks Mode, IE7 Mode, and IE8 Mode (All Versions)*

The **chOff** attribute is not supported.

C0055:

The specification states:

Attribute height

Cell height. See the height attribute definition in HTML 4.0. This attribute is deprecated in HTML 4.0.

*All Document Modes (All Versions)*

The value of the **height** attribute is serialized by dropping the "px" suffix when set in the DOM. For example, writing <td height="100px"> in markup, accessing **td.height** from the DOM, returns 100. However, percentage values are unmodified. For example, with <td height="100%"> in markup, the DOM returns 100%.

C0056:

The specification states:

|  |  |  |
| --- | --- | --- |
| IDL Definition |  |  |
| interface HTMLFrameElement : HTMLElement { | |  |
| attribute | DOMString | frameBorder; |
| attribute | DOMString | longDesc; |
| attribute | DOMString | marginHeight; |
| attribute | DOMString | marginWidth; |
| attribute | DOMString | name; |
| attribute | boolean | noResize; |
| attribute | DOMString | scrolling; |
| attribute | DOMString | src; |
| }; |  |  |

*IE8 Mode, IE9 Mode, and IE10 Mode (All Versions)*

If the value of the **longdesc** attribute or **src** attribute for the **FRAME** element is specified in HTML as a relative URI, the value is converted and stored as an absolute URI in the **longDesc** attribute or **src** attribute, respectively, of the **HTMLFrameElement**. If not already present, a slash is appendedto the end of the URI when a file name is not specified.

C0057:

The specification states:



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interface HTMLFrameElement : HTMLElement

Attribute

noResize of type boolean

When true, forbid user from resizing frame. See the noresize attribute definition in HTML 4.0.

*All Document Modes (All Versions)*

The following clarifications apply:

The value of the **noresize** attribute is stored as a string.

This attribute is an expando. If the **noresize** attribute is assigned a value in HTML, that value is returned as the value of the **noResize** DOM attribute rather than the Boolean value true.

If the **noresize** attribute is not specified in HTML, or is specified without a value, the **noResize** DOM attribute returns a value of undefined rather than a default Boolean value of false.

1. **Error Handling**

There are no additional considerations for error handling.

1. **Security**

There are no additional security considerations.



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**3 Change Tracking**

This section identifies changes that were made to the [MS-DOM1] protocol document between the February 2012 and July 2012 releases. Changes are classified as New, Major, Minor, Editorial, or No change.

The revision class **New** means that a new document is being released.

The revision class **Major** means that the technical content in the document was significantly revised. Major changes affect protocol interoperability or implementation. Examples of major changes are:

A document revision that incorporates changes to interoperability requirements or functionality.

An extensive rewrite, addition, or deletion of major portions of content.

The removal of a document from the documentation set.

Changes made for template compliance.

The revision class **Minor** means that the meaning of the technical content was clarified. Minor changes do not affect protocol interoperability or implementation. Examples of minor changes are updates to clarify ambiguity at the sentence, paragraph, or table level.

The revision class **Editorial** means that the language and formatting in the technical content was changed. Editorial changes apply to grammatical, formatting, and style issues.

The revision class **No change** means that no new technical or language changes were introduced. The technical content of the document is identical to the last released version, but minor editorial and formatting changes, as well as updates to the header and footer information, and to the revision summary, may have been made.

Major and minor changes can be described further using the following change types:

New content added.

Content updated.

Content removed.

New product behavior note added.

Product behavior note updated.

Product behavior note removed.

New protocol syntax added.

Protocol syntax updated.

Protocol syntax removed.

New content added due to protocol revision.

Content updated due to protocol revision.

Content removed due to protocol revision.

New protocol syntax added due to protocol revision.



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Protocol syntax updated due to protocol revision.

Protocol syntax removed due to protocol revision.

New content added for template compliance.

Content updated for template compliance.

Content removed for template compliance.

Obsolete document removed.

Editorial changes are always classified with the change type **Editorially updated.**

Some important terms used in the change type descriptions are defined as follows:

**Protocol syntax** refers to data elements (such as packets, structures, enumerations, andmethods) as well as interfaces.

**Protocol revision** refers to changes made to a protocol that affect the bits that are sent overthe wire.

The changes made to this document are listed in the following table. For more information, please contact  [protocol@microsoft.com](mailto:protocol@microsoft.com).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  |  |  | **Major** |  |  |  |
|  | **Tracking number (if applicable)** |  | **change** |  |  |  |
|  |  |  |
| **Section** | **and description** |  | **(Y or N)** |  | **Change type** |  |
|  |  |  |  |  |  |  |
| 1 | Updated document to remove beta tagging. |  | N | | Content updated. |  |
| Introduction |  |  |  |  |  |  |
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