

## Review E: Table elements

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# 1 Table elements

DITA topics support two types of tables: table and simple table.

The `<table>` element uses the OASIS Exchange Table Model, formerly known as the CALS table model. It provides a wide variety of controls over the display properties of the data and even the table structure itself.

The `<simpletable>` element is structurally less complex than the `<table>` element and so is an easier base for specialization. The `<simpletable>` element does not provide as much control over formatting. It is useful for describing lists of data with regular headings, such as telephone directory listings or configuration settings.

## 1.1 `<colspec>`

A column specification provides information about a single column in a table that is based on the OASIS Exchange Table Model. The information might include a column name and number, cell content alignment, or column width.

### Attributes

The following attributes are available on this element: [universal attributes](#) (without the Metadata attribute group), `@base`, `@align`, `@char`, `@charoff`, `@colsep`, `@rowsep`, `@rowheader`, and the attributes defined below.

#### `@colnum`

Specifies the number of this column in the table, counting from the first logical column to the last column.

**Comment by robander on Dec 20 2021**

Question from Zoe: do these need to be in order? What if you have three column specifications with numbers 1/3/5?

#### `@colname`

Specifies a name for the column. The `<entry>` element can use `@colname` to refer to the name of this column.

#### `@colwidth`

Specifies the column width. Valid values are either a proportional or fixed measure:

**Proportional measure**

"5\*" indicates five times the proportion.

**Fixed measure**

Coefficients are positive integers or fixed point numbers. The fixed unit values are case-insensitive. The allowed units of measure are cm (centimeters), in (inches), pi (picas), and pt (points). The default unit of measure is pt.

The null string is treated as a proportional measure of "1\*".

For more information, see [XML Exchange Table Model Document Type Definition](#).

**Comment by Kristen J Eberlein on 20 December 2021**

I added the above (expanded) information about @colwidth based on a review comment by Gershon Joseph. I think it should be less exhaustive, perhaps just a simple explanation that both proportional and fixed measures are supported, and then point off to the authoritative document.

## Example

See `<table>` (10).

## 1.2 `<entry>`

A table entry represents a single cell in a table that is based on the OASIS Exchange Table Model.

### Attributes

The following attributes are available on this element: [universal attributes](#) (without the Metadata attribute group), `@base`, `@rev`, `@align`, `@char`, `@charoff`, `@colsep`, `@rowsep`, and `@valign`, and the attributes defined below.

#### **@colname**

Specifies the column name in which an entry is found. The value is a reference to the `@colname` attribute on the `<colspec>` element.

#### **@headers**

**Specifies which entries in the current table provide headers for this cell.** The `@headers` attribute contains an unordered set of unique, space-separated tokens, each of which is an ID reference of an entry from the same table.

#### **@nameend**

Specifies the last logical column that is included in a horizontal span. The value is a reference to the `@colname` attribute on the `<colspec>` element.

#### **@namest**

Specifies the first logical column that is included in a horizontal span. The value is a reference to the `@colname` attribute on the `<colspec>` element.

#### **@morerows**

Specifies the number of additional rows to add in a vertical span.

#### **@rotate**

Specifies whether the contents of the entry are rotated. The following values are valid:

**1**

The contents of the cell are rotated 90 degrees counterclockwise.

**0**

No rotation occurs.

**-dita-use-conref-target**

See for more information.

#### **@scope**

Specifies that the current entry is a header for other table entries. The following values are valid:

**col**

The current entry is a header for all cells in the column.

**colgroup**

The current entry is a header for all cells in the columns that are spanned by this entry.

**row**

The current entry is a header for all cells in the row.

**rowgroup**

The current entry is a header for all cells in the rows that are spanned by this entry.

**-dita-use-conref-target**

See for more information.

**Comment by robander on Dec 20 2021**

If the TC agrees we could state that the use of `<thead>` implies a setting of `scope="colgroup"` (not sure if we should call that a processing default or something else). Basically a `thead` means everything in there is a heading for the relevant columns, so it is not required to set this attribute.

Same question for `<sthead>` as well.

**Example**

See [<table>](#) (10).

**1.3 <row>**

A table row is a single row in a table that is based on the OASIS Exchange Table Model.

**Attributes**

The following attributes are available on this element: [universal attributes](#), [@rowsep](#) and [@valign](#).

**Example**

See [<table>](#) (10).

**1.4 <simpletable>**

Simple tables are a basic tabular environment designed to present organized content.

**Usage information**

The `<simpletable>` is designed for **close** compatibility with HTML5 tables. It can be used for basic tabular data such as phone directory listings or parts lists. It can contain a title and allows column and row spanning. The `@keycol` attribute indicates which column represents the "key" or term-like column of the structure.

The `<simpletable>` element can be used as the base for specialized structures, such as the property and choice tables that are available in the Technical Content edition.

**Attributes**

The following attributes are available on this element: [universal attributes](#), [display attributes](#), [simpletable attributes](#), and [@spectitle](#).

## Examples

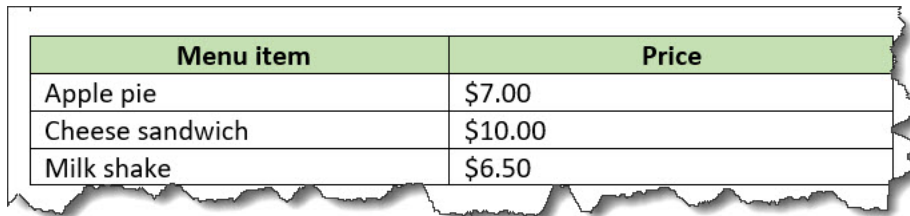
This section contains examples of how the `<simpletable>` element can be used.

### Figure 1: Example of a simple table

The following code sample shows a simple table that contains **menu items and prices**:

```
<simpletable>
  <sthead>
    <stentry>Menu item</stentry>
    <stentry>Price</stentry>
  </sthead>
  <strow>
    <stentry>Apple pie</stentry>
    <stentry>$7.00</stentry>
  </strow>
  <strow>
    <stentry>Cheese sandwich</stentry>
    <stentry>$10.00</stentry>
  </strow>
  <strow>
    <stentry>Milk shake</stentry>
    <stentry>$6.50</stentry>
  </strow>
</simpletable>
```

The simple table might be rendered as follows:



Menu item	Price
Apple pie	\$7.00
Cheese sandwich	\$10.00
Milk shake	\$6.50

### Figure 2: Example of a simple table with column and row spanning

The following code sample shows a simple table that tracks meals. It has a title and column and row spans.

```
<simpletable>
  <title>Food log for Wednesday</title>
  <sthead>
    <stentry>Meal</stentry>
    <stentry>Food</stentry>
  </sthead>
  <strow>
    <stentry colspan="2">Fasting period</stentry>
  </strow>
  <strow>
    <stentry>Lunch</stentry>
    <stentry rowspan="2">Pasta</stentry>
  </strow>
  <strow>
    <stentry>Dinner</stentry>
  </strow>
</simpletable>
```

The simple table might be rendered as follows:

Meal	Food
Fasting period	
Lunch	Pasta
Dinner	

**Figure 3: Example of a simple table that uses @keycol**

The following code sample shows a simple table that contains information about menu items: calories and price. The @keycol attribute indicates that the first column, which contains the menu items, is the header column. This indicates that first column is treated as a vertical header.

```
<simpletable keycol="1">
  <sthead>
    <stentry>Menu item</stentry>
    <stentry>Calories</stentry>
    <stentry>Price</stentry>
  </sthead>
  <strow>
    <stentry>Chicken dish</stentry>
    <stentry>850</stentry>
    <stentry>$12.00</stentry>
  </strow>
  <strow>
    <stentry>Vegetarian dish</stentry>
    <stentry>525</stentry>
    <stentry>$9.00</stentry>
  </strow>
  <strow>
    <stentry>Vegan dish</stentry>
    <stentry>475</stentry>
    <stentry>$7.00</stentry>
  </strow>
</simpletable>
```

This simple table might be rendered as follows:

Menu item	Calories	Price
<b>Chicken dish</b>	850	\$12.00
<b>Vegetarian dish</b>	525	\$9.00
<b>Vegan dish</b>	475	\$7.00

In the above sample rendering, the content of the key column is bolded. However, note that rendering of the header column is left up to the implementation.

## 1.5 <stentry>

A simple table entry represents a single cell within a simple table.

### Attributes

The following attributes are available on this element: [universal attributes](#), [@specentry](#), and the attributes defined below.

### **@colspan**

Specifies the number of columns that a cell is to span inside a simple table.

### **@headers**

Specifies which entries in the current table provide headers for this cell. The `@headers` attribute contains an unordered set of unique, space-separated tokens, each of which is an ID reference of an entry from the same table.

### **@rowspan**

Specifies the number of rows that a cell is to span inside a simple table.

### **@scope**

Specifies that the current entry is a header for other table entries. The following values are valid:

#### **col**

The current entry is a header for all cells in the column.

#### **colgroup**

The current entry is a header for all cells in the columns that are spanned by this entry.

#### **row**

The current entry is a header for all cells in the row.

#### **rowgroup**

The current entry is a header for all cells in the rows that are spanned by this entry.

#### **-dita-use-conref-target**

See for more information.

#### **Comment by robander on Dec 20 2021**

If the TC agrees we could state that the use of `<thead>` implies a setting of `scope="colgroup"` (not sure if we should call that a processing default or something else). Basically a `thead` means everything in there is a heading for the relevant columns, so it is not required to set this attribute.

Same question for `<sthead>` as well.

## **Example**

See `<simpletable>` (6).

## **1.6 <sthead>**

A simple table header is an optional header row for a simple table.

## **Usage information**

#### **Comment by Kristen J Eberlein on 21 December 2021**

This topic needs to mention the role that table headers play in ensuring that content is accessible. It should link to the new material (not yet developed) about accessibility.

## **Attributes**

The following attributes are available on this element: [universal attributes](#).



## Example

See `<simpletable>` (6).

## 1.7 `<strow>`

A simple table row is a single row in a simple table.

## Attributes

The following attributes are available on this element: [universal attributes](#).

## Example

See `<simpletable>` (6).

## 1.8 `<table>`

A table based on the OASIS Exchange Table Model organizes arbitrarily complex relationships of tabular information. This standard table markup provides a wide variety of controls over the display properties of the data and even the table structure itself.

## Usage information

The DITA `<table>` element is based on the OASIS Exchange Table Model, augmented with DITA attributes that enable accessibility, specialization, content reference, and other DITA processing.

An optional `<title>` inside the `<table>` element provides a caption to describe the table. In addition, the optional `<desc>` element enables a table description.

See [1.4 simpletable](#) (5) for a simplified table model that is closer to the HTML5 table model, and which can be more easily specialized to represent regular relationships of data.

In DITA tables, in place of the `@expand` attribute used by other DITA elements, the `@pgwide` attribute is used in order to conform to the OASIS Exchange Table Model.

## Attributes

The following attributes are available on this element: [universal attributes](#), `@colsep`, `@frame`, `@rowsep`, `@rowheader`, `@scale`, and the attributes defined below.

### **@orient**

Specifies the orientation of the table in page-based [output formats](#). This attribute is primarily useful for print-oriented display. The following values are valid:

#### **port**

**Portrait page orientation. The page is oriented with its long side vertical and its short side horizontal.**

#### **land**

**Landscape page orientation. The page is oriented with its long side horizontal and its short side vertical.**

#### **-dita-use-conref-target**

See for more information.

### **@pgwide**

Specifies the horizontal placement of the element for print-oriented rendering. The following values are valid:

1

Places the element on the left page margin

0

Aligns the element with the left margin of the current text line and takes indentation into account

## Examples

This section contains **examples** of how the `<table>` element can be used.

### Figure 4: Example of a table

The following code sample shows a table that is used to provide reference information about animals and gestation:

```
<table>
  <tgroup cols="2">
    <colspec colwidth="121*" />
    <colspec colwidth="76*" />
    <thead>
      <row>
        <entry valign="top">Animal</entry>
        <entry valign="top">Gestation (in months)</entry>
      </row>
    </thead>
    <tbody>
      <row>
        <entry>Elephant (African and Asian)</entry>
        <entry>19-22</entry>
      </row>
      <row>
        <entry>Giraffe</entry>
        <entry>15</entry>
      </row>
      <row>
        <entry>Rhinoceros</entry>
        <entry>14-16</entry>
      </row>
      <row>
        <entry>Hippopotamus</entry>
        <entry>7 1/2</entry>
      </row>
    </tbody>
  </tgroup>
</table>
```

The formatted output might be displayed as follows:

Animal	Gestation (in months)
Elephant (African and Asian)	19-22
Giraffe	15
Rhinoceros	14-16
Hippopotamus	7 1/2

In this example, the use of the `<thead>` element for the header enables processors or screen readers to identify a header relationship between any cell in the table body and the matching header cell above that column.

**Figure 5: Example of a complex table with implied accessibility markup**

**Comment by robander on Oct 5 2020**

Per discussion with Kris: would be good to have a section on accessibility in the architectural spec; if that is created, some of these examples might be better placed there.

In the following code sample, the table uses `<thead>` to identify header rows and `@rowheader` to identify a header column. This header relationship can be used to automatically create renderings of the table in other formats, such as HTML, that can be navigated using a screen reader or other assistive technology.

```
<table frame="all" rowheader="firstcol">
  <title>Sample of automated table accessibility</title>
  <desc>Names are listed in the column c1. Points are listed in both data columns, with
    expected points in column c2 and actual points in column c3.</desc>
  <tgroup cols="3">
    <colspec colname="c1"/>
    <colspec colname="c2"/>
    <colspec colname="c3"/>
    <thead>
      <row>
        <entry morerows="1">Name</entry>
        <entry namest="c2" nameend="c3">Points</entry>
      </row>
      <row>
        <entry>Expected</entry>
        <entry>Actual</entry>
      </row>
    </thead>
    <tbody>
      <row>
        <entry>Mark</entry>
        <entry>10,000</entry>
        <entry>11,123.45</entry>
      </row>
      <row>
        <entry>Peter</entry>
        <entry>9,000</entry>
        <entry>11,012.34</entry>
      </row>
      <row>
        <entry>Cindy</entry>
        <entry>10,000</entry>
        <entry>10,987.64</entry>
      </row>
    </tbody>
  </tgroup>
</table>
```

In this code sample, navigation information for assistive technology is derived from two sources:

- The `<thead>` element contains two rows, and indicates that each `<entry>` in those rows is a header cell for that column. This means that each body cell can be associated with the header cell or cells above the column. For example, in the second body row, the entry "Peter" can be associated with the header "Name"; similarly, the entry "9,000" can be associated with the headers "Expected" and "Points".
- The `@rowheader` attribute implies that the first column plays a similar roll as a header. This means that each body cell in columns two and three can be associated with the header cell in column one. For example, in the second body row, the entry "9,000" can be associated with the header "Peter".

As a result of these two sets of headers, a rendering of the table can associate the entry "9,000" with three headers: "Peter", "Expected", and "Points", making it fully navigable by a screen reader or other assistive technology.

The formatted output might be displayed as follows:

Name	Points	
	Expected	Actual
Mark	10,000	11,123.45
Peter	9,000	11,012.34
Cindy	10,000	10,987.64

**Figure 6: Example of a complex table with some manually specified accessibility markup**

In some complex tables, the `<thead>` element and `@rowheader` attribute might not be enough to support all accessibility needs. Assume that the table above is flipped so that the names are listed across the top row, instead of in the first column, as shown in the following screen capture:

Name		Mark	Peter	Cindy
Points	Expected	10,000	9,000	10,000
	Actual	11,123.45	11,012.34	10,987.64

In this case the `@rowheader` attribute cannot be used, because it is only able to specify the first column as a header column. In this case, the `@scope` attribute can be used to indicate that entries in the first and second columns function as headers for the entire row (or row group, in the case of a cell that spans more than one row).

The following code sample demonstrates the use of the `@scope` attribute to facilitate navigation of these rows by a screen reader or other assistive technology. **Note** that the `<thead>` element is still used to imply a header relationship with the names at the top of each column.

```
<table frame="all">
  <title>Sample with two header columns</title>
  <tgroup cols="5">
    <colspec colname="c1"/>
    <colspec colname="c2"/>
    <colspec colname="c3"/>
    <colspec colname="c4"/>
    <colspec colname="c5"/>
  <thead>
    <row>
      <entry namest="c1" nameend="c2">Name</entry>
      <entry>Mark</entry>
      <entry>Peter</entry>
      <entry>Cindy</entry>
    </row>
  </thead>
  <tbody>
    <row>
      <entry morerows="1" scope="rowgroup"><b>Points</b></entry>
      <entry scope="row"><b>Expected</b></entry>
      <entry>10,000</entry>
      <entry>9,000</entry>
      <entry>10,000</entry>
    </row>
    <row>
      <entry scope="row"><b>Actual</b></entry>
```

```

    <entry>11,123.45</entry>
    <entry>11,012.34</entry>
    <entry>10,987.64</entry>
  </row>
</tbody>
</tgroup>
</table>

```

**Figure 7: Example of a complex table with manual accessibility markup**

In extremely complex tables, such as those with a single header cell in the middle of the table, fine-grained accessibility controls are available to explicitly associate any content cell with any header cell. This might also be useful for cases where processors do not support the implied accessibility relationships described above.

In the following sample, header cells are identified using the @id attribute, which is referenced using the @headers attribute on appropriate content cells. This makes all header relationships in the table explicit. Note that this sample ignores the @scope attribute, which could be used to exercise manual control without setting as many attribute values; it also ignores the fact that <thead> creates a header relationship even when the @id and @headers attributes are not used.

**Comment by Kristen J Eberlein on 20 December 2021**

Do we want to use a different example here? It's a bit confusing to read, since the result output is very similar to the "Example of a complex table with implied accessibility markup".

```

<table frame="all">
  <title>Sample with fully manual accessibility control</title>
  <desc>Names are listed in the column c1. Points are listed in both data columns, with
  expected points in column c2 and actual points in column c3.</desc>
  <tgroup cols="3">
    <colspec colname="c1"/>
    <colspec colname="c2"/>
    <colspec colname="c3"/>
    <thead>
      <row>
        <entry morerows="1"> </entry>
        <entry name="c2" nameend="c3" id="pts">Points</entry>
      </row>
      <row>
        <entry id="exp" headers="pts">Expected</entry>
        <entry id="act" headers="pts">Actual</entry>
      </row>
    </thead>
    <tbody>
      <row>
        <entry id="name1">Mark</entry>
        <entry headers="name1 exp pts">10,000</entry>
        <entry headers="name1 act pts">11,123.45</entry>
      </row>
      <row>
        <entry id="name2">Peter</entry>
        <entry headers="name2 exp pts">9,000</entry>
        <entry headers="name2 act pts">11,012.34</entry>
      </row>
      <row>
        <entry id="name3">Cindy</entry>
        <entry headers="name3 exp pts">10,000</entry>
        <entry headers="name3 act pts">10,987.64</entry>
      </row>
    </tbody>
  </tgroup>
</table>

```

The formatted output might be displayed as follows:

	Points	
	Expected	Actual
Mark	10,000	11,123.45
Peter	9,000	11,012.34
Cindy	10,000	10,987.64

## 1.9 <tbody>

A table body is a group of rows in a table that is based on the OASIS Exchange Table Model.

### Attributes

The following attributes are available on this element: [universal attributes](#) and [@valign](#).

### Example

See [<table>](#) (10).

## 1.10 <tgroup>

A table group is a grouping of a table header and table body, based on the OASIS Exchange Table Model.

### Attributes

The following attributes are available on this element: [universal attributes](#), [@align](#), [@colsep](#), [@rowsep](#), and the attribute defined below.

#### @cols (REQUIRED)

Specifies the number of columns in a [<tgroup>](#).

### Example

See [1.8 table](#) (9).

## 1.11 <thead>

A table header contains one or more header rows in a table that is based on the OASIS Exchange Table Model.

### Usage information

#### Comment by Kristen J Eberlein on 21 December 2021

This topic needs to mention the role that table headers play in ensuring that content is accessible. It should link to the new material (not yet developed) about accessibility.

### Attributes

The following attributes are available on this element: [universal attributes](#) and [@valign](#).

## Example

See [<table>](#) (10).

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