

## Review E: Table elements

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# 1 Table elements

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

The `<table>` element uses the OASIS Exchange Table Model, **a simplification of the CALS table model**. The DITA table 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 much control over formatting, **although it permits titles and row and column spanning**.

## 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), `@align`, `@base`, `@char`, `@charoff`, `@colsep`, `@rowheader`, `@rowsep`, and the attributes defined below.

#### **@colnum**

Specifies the number of the column in the table, **where 1 represents the first logical column**.

#### **@colname**

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

#### **@colwidth**

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

##### **Proportional measure**

A value of "5\*" indicates five times the proportion.

##### **Fixed measure**

A value of a coefficient followed by a unit of measurement. The 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.

**If the `@colwidth` attribute is not specified or is empty, a proportional measure of "1\*" is assumed.**

### Example

See `<table>` (9).

## 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), [@align](#), [@base](#), [@char](#), [@charoff](#), [@colsep](#), [@rev](#), [@rowsep](#), [@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:

**0**

Indicates that no rotation occurs.

**1**

Indicates that the contents of the cell are rotated 90 degrees counterclockwise.

#### -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**

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

**colgroup**

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

**row**

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

**rowgroup**

Indicates that 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.

## Example

See `<table>` (9).

## 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>` (9).

## 1.4 `<simpletable>`

A **simple table** is a basic tabular environment **that is** designed to present organized content.

## Usage information

The `<simpletable>` element is designed for **close** compatibility with HTML5 tables. It can contain a title and allows column and row spanning. **The `@keycol` attribute indicates the key column. A key column contains content that represents the key to the tabular structure.**

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

## Rendering expectations

**When a key column is specified for a simple table, it is treated as a vertical header.**

## 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>
</simpletable>
```

```

<stentry>Milk shake</stentry>
<stentry>$6.50</stentry>
</strow>
</simpletable>

```

The simple table might be rendered in the following way:

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. The table 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 in the following way:

*Table 3: Food log for Wednesday*

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 the caloric content and prices of menu items. The @keycol attribute indicates that the first column, which contains the menu items, is the key column.

```

<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 in the following way:

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

In the sample rendering, the content of the key column is highlighted with bold formatting. However, note that rendering of the key 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

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

##### colgroup

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

##### row

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

##### rowgroup

Indicates that 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.

### **Example**

See `<simpletable>` (5).

## **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>` (5).

## **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>` (5).

## **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 `<table>` element is based on the OASIS Exchange Table Model. **However, it is** augmented with DITA attributes that enable accessibility, content reference, specialization, and more.

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 **closely aligned with** the HTML5 table model, and which can be easily specialized.



For <table>, in place of the @expanse attribute that is 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, @rowheader, @rowsep, @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

Indicates portrait page orientation. The page is oriented with its long side vertical and its short side horizontal.

#### land

Indicates 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:

#### 0

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

#### 1

Places the element on the left page margin

## 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>
    </tbody>
  </tgroup>
</table>
```

```

</row>
<row>
  <entry>Hippopotamus</entry>
  <entry>7 1/2</entry>
</row>
</tbody>
</tgroup>
</table>

```

The formatted output might be rendered in the following way:

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 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 the `<thead>` element to identify header rows and the `@rowheader` attribute to identify a header column. **These header relationships** 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>
    </tbody>
  </tgroup>
</table>

```

```

</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 `header` 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 **that is specified on `<table>` indicates** that the first column plays a role 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", **thus** making it fully navigable by a screen reader or other assistive technology.

The formatted output might be **rendered in the following way:**

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

**Here,** 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 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 namest="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 rendered in the following way:

	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 **collection** of rows in a table that is based on the OASIS Exchange Table Model. It contains the table rows that contain content.

### Attributes

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

### Example

See [<table>](#) (9).

## 1.10 <tgroup>

A table group is a **wrapper that contains column specifications, a table header, and the table body in a table that is 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 table group.

### **Example**

See [1.8 table](#) (8).

## **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>](#) (9).

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