Spreadsheet using jQuery.sheet

The Spreadsheet feature can be be accessed through the jquery.sheet interface, added to Tiki since version 5.0

A review of jQuery.Sheet

Light years beyond other solutions at least as first impression, jQuery.sheet by Robert Plummer is a really wonderful library.

Usage

When adding a new spreadsheet, the interface is as usual in Tiki: you have the option to allow wiki parsing of wiki content inside the spreadsheet, plus defining some parent relationship with other spreadsheets:

When editing the spreadsheet, you can add more rows and columns, add content to them, move among the cells using the cursor keys, etc. If wiki parsing was enabled for the spreadsheet, then you can add any wiki syntax to the cell (including Wiki plugins!)
That wiki markup will be parsed when saved.

New sheets can be added when clickling at the plus sign ("+") at the bottom of the spreadsheet.

Then, this new sheet is added to the workbook.
Spreadsheet Help

<table>
<thead>
<tr>
<th>Function</th>
<th>Arguments</th>
<th>Example</th>
<th>Result</th>
<th>Additional Information</th>
<th>Sample #</th>
<th>Sample Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABS</td>
<td>numbers_as_array</td>
<td>&quot;=ABS(F4)&quot;</td>
<td>62</td>
<td></td>
<td>23</td>
<td>Hello World</td>
</tr>
<tr>
<td>AVERAGE</td>
<td>values_as_array</td>
<td>&quot;=AVERAGE(F4:F14)&quot;</td>
<td>46.92307692307692</td>
<td>Synonym:?AVG</td>
<td>45</td>
<td>True</td>
</tr>
<tr>
<td>CEILING</td>
<td>numbers_as_array</td>
<td>&quot;=CEILING(F4:F14)&quot;</td>
<td>6.21E+016</td>
<td></td>
<td>62</td>
<td>False</td>
</tr>
<tr>
<td>COUNT</td>
<td>html_as_string</td>
<td>&quot;=COUNT(F2:F14)&quot;</td>
<td>13</td>
<td></td>
<td>108</td>
<td>To High</td>
</tr>
<tr>
<td>DAYSFROM</td>
<td>url_as_string</td>
<td>&quot;=DAYSFROM(2009,4,15)&quot;</td>
<td>-11</td>
<td></td>
<td>200</td>
<td>To Low</td>
</tr>
<tr>
<td>DOLLAR</td>
<td>numbers_as_array</td>
<td>&quot;=DOLLAR(F13)&quot;</td>
<td>55.00</td>
<td></td>
<td>36</td>
<td>Perfect</td>
</tr>
<tr>
<td>FALSE</td>
<td>number, decimals, noCommas?</td>
<td>&quot;=IF(F4 &lt; 100, TRUE(), FALSE())&quot;</td>
<td>TRUE</td>
<td></td>
<td>17</td>
<td>number</td>
</tr>
<tr>
<td>FIXED</td>
<td>number, decimals, noCommas?</td>
<td>&quot;=FIXED(F4+F14)&quot;</td>
<td>41.00</td>
<td></td>
<td>99</td>
<td>numbers_as_array</td>
</tr>
<tr>
<td>FLOOR</td>
<td>numbers_as_array</td>
<td>&quot;=FLOOR(F4-F5)&quot;</td>
<td>-46</td>
<td>Synonym: INT</td>
<td>100</td>
<td>values_as_array</td>
</tr>
<tr>
<td>HYPERLINK</td>
<td></td>
<td>&quot;=HYPERLINK(&quot;<a href="http://www.jquery.com">http://www.jquery.com</a>&quot;, &quot;jQuery's website&quot;)&quot;</td>
<td>jQuery's website</td>
<td></td>
<td>-100</td>
<td>html_as_string</td>
</tr>
<tr>
<td>IF</td>
<td>IF(logical_test, value_if_true, value_if_false)</td>
<td>&quot;=IF(F12 &lt; 100, TRUE(), FALSE())&quot;</td>
<td>TRUE</td>
<td>Can have nested IF functions. The url can be sensitive to numbers. Also, on initial load, because the image doesn't really have a size, the outerheight can be distorted. An easy way to offset this is to have some text in front of it that's taller than the image :).</td>
<td>-14</td>
<td>url_as_string</td>
</tr>
<tr>
<td>IMG</td>
<td></td>
<td>&quot;=IMG(&quot;<a href="http://ui.jquery.com/images/logo.gif">http://ui.jquery.com/images/logo.gif</a>&quot;)&quot;</td>
<td></td>
<td></td>
<td>55</td>
<td>values</td>
</tr>
<tr>
<td>MAX</td>
<td>values_as_array</td>
<td>&quot;=MAX(F3:F13)&quot;</td>
<td>200</td>
<td></td>
<td>-21</td>
<td></td>
</tr>
<tr>
<td>MIN</td>
<td>values_as_array</td>
<td>&quot;=MIN(F3:F13)&quot;</td>
<td>-100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N</td>
<td>numbers_as_array</td>
<td>&quot;=N(F3)&quot;</td>
<td>45</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Function</td>
<td>Description</td>
<td>Result</td>
<td>Dependancy</td>
<td>Synonym</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>-------------</td>
<td>--------</td>
<td>------------</td>
<td>---------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PI</td>
<td>&quot;=PI()&quot;</td>
<td>3.14159265358979</td>
<td>If you use &quot;=PI&quot; it will return the actual function as text, which is incorrect. Use &quot;=PI()&quot;.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TODAY</td>
<td>&quot;=TODAY()&quot;</td>
<td>Wed Sep 15 2010 14:32:35 GMT-0400 (Eastern Daylight Time)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TRUE</td>
<td>&quot;=TRUE()</td>
<td></td>
<td>FALSE()&quot;</td>
<td>TRUE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUM values as array</td>
<td>&quot;=SUM(F2:F13)&quot;</td>
<td>631</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROUND numbers as array</td>
<td>&quot;=ROUND(1.6)&quot;</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAND</td>
<td>&quot;=RAND()&quot;</td>
<td>0.2405688383833392</td>
<td></td>
<td>Synonym: RND</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Cell Navigation**

- **Left Arrow**: Active cell moves left if possible.  
  Synonym: `jQuery.sheet.evt.cellClick()`, `jS.evt.cellClick()`
- **Right Arrow**: Active cell moves right if possible.  
  Synonym: `jQuery.sheet.evt.cellClick()`, `jS.evt.cellClick()`
- **Up Arrow**: Active cell moves up if possible.  
  Synonym: `jQuery.sheet.evt.cellClick()`, `jS.evt.cellClick()`
- **Down Arrow**: Active cell moves down if possible.  
  Synonym: `jQuery.sheet.evt.cellClick()`, `jS.evt.cellClick()`
- **Escape**: Active cell is removed from focus.  
  Synonym: `jQuery.sheet.evt.cellEditAbandon()`, `jS.evt.cellEditAbandon()`
- **Enter**: Starts in-place edit / Active cell moves down if possible.  
  Synonym: `jQuery.sheet.evt.formulaKeyDown()`, `jS.evt.formulaKeyDown()`
- **Ctrl + Enter**: Ends in-place edit / Active cell moves down if possible.  
  Synonym: `jQuery.sheet.evt.formulaKeyDown()`, `jS.evt.formulaKeyDown()`
- **Tab**: Active cell moves right if possible.  
  Synonym: `jQuery.sheet.evt.cellClick()`, `jS.evt.cellClick()`

**Chart Type**

- **Vertical Bar**: 
  Example: `"=BARCHART(D2:D13)"`
  Chart Data: Month Year

```
<svg height="172" width="421" version="1.1" xmlns="http://www.w3.org/2000/svg"><desc>Created with Raphaël</desc><path d="M80,139L58,139L58,127L80,127Z" stroke="none" fill="#1751a7"/> 4 Jan 2001
```

- **Horizontal Bar**: 
  Example: `"=HBARCHART(D2:D13)"`
  Chart Data: Month Year

```
```
Inputs are for capturing fixed data, such as a drop down list (INPUT.SELECT), or a checkbox (INPUT.CHECKBOX)

<table>
<thead>
<tr>
<th>Input Type</th>
<th>Example</th>
<th>Data Number</th>
<th>Data String</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select List</td>
<td>&quot;=INPUT.SELECT(D3:D10)&quot;</td>
<td>34</td>
<td>Lorem Proin Aliquam</td>
</tr>
<tr>
<td>Radio List</td>
<td>&quot;=INPUT.RADIO(E3:E10)&quot;</td>
<td>-20</td>
<td>Proin</td>
</tr>
<tr>
<td>Checkbox</td>
<td>&quot;=INPUT.CHECKBOX(E3)&quot;</td>
<td>123</td>
<td>Aliquam</td>
</tr>
<tr>
<td>Detect if Checkbox is Checked</td>
<td>&quot;=INPUT.ISCHECKED(C5)&quot;</td>
<td>FALSE</td>
<td>3</td>
</tr>
</tbody>
</table>

Function | Arguments | Example | Results | Additional Information | Sample # | Sample Text
---------|-----------|---------|---------|------------------------|----------|-------------------
FACTORIAL | number    | '=FACTORIAL(5)' | 120     |                        |          |                   |
COMBINATION | number, number | '=COMBINATION(7,5)' | 21     |                        |          |                   |
PERMUTATION | number, number | '=PERMUTATION(7,5)' | 2520   |                        |          |                   |
GAMMA | number |         |         |                        |          |                   |
PRECISION | num, precision |         |         |                        |          |                   |
MINIMUM | array |         |         |                        |          |                   |
MODE | array |         |         |                        |          |                   |
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<td></td>
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<td>FIXED</td>
<td>number, decimals,</td>
<td>&quot;=FIXED(F4+F14)&quot;</td>
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<td>Two decimal places</td>
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The url can be sensitive to numbers. Also, on initial load, because the image doesn't really have a size, the outerheight can be distorted. An easy way to offset this is to have some text in front of it that's taller than the image :).

| MAX values as array | =MAX(F3:F13) | 200 |
| MIN values as array | =MIN(F3:F13) | -100 |
| N numbers as array  | =N(F3)      | 45  |

If you use "=PI" it will return the actual function as text, which is incorrect. Use "=PI()".

| PI                     | =PI()       | 3.141592653589793 |
| TODAY                  | =TODAY()    | Wed Sep 15 2010 14:32:35 GMT-0400 (Eastern Daylight Time) |
| TRUE                   | =TRUE() || FALSE() | TRUE |
| SUM values as array    | =SUM(F2:F13) | 631 |
| ROUND numbers as array | =ROUND(1.6) | 2 |
| RAND                   | =RAND()     | 0.2405688383833392 Synonym: RND |

References:

- Jquery
- Spreadsheet
- Tiki5

Tiki6 features

A lot of work has happened from Tiki5 to Tiki6,

- Fill down, fill right
  - including formulas which update
- colors of cell and text
- Copy-paste from Excel
- Make cells referencing variable names
  - Done - through use of calculations engine function CELLREF (example: "=CELLREF('mycell')"), but you must first set the cell's name using jQuery.sheet.instancei.setCellRef()
- Remember columns size
- Added startup option "minSize: {rows: 15, cols: 5}" and fn "checkMinSize" that will automatically add columns/rows
• Merge & unmerge cell
• Better error reporting (ex.: if a formula has a loop)
• Uses AJAX for smoother user experience

PluginSheet
- Show a range of cells (or single cell). Default shows all. e.g. "D1:F3" (or "e14:e14")
  - This allows using in a wiki page the result from a spreadsheet cell! (that's going to be
    very powerful for dynamic reports in wiki pages, not only of graphs but also from specific
    results from calculations). Budgets for projects, shown in wiki pages dynamically, etc.
    Templates of invoices, etc.
- Now handles multisheet

The project plugin "jsanalysis" was dropped due to license issues, but it has been migrated those
same functions to a new library for sheet: "jquery.sheet.advancedfn". Thus, we can now use this in
the future for more advanced functions used in sheet for those users who need them. List of functions
included:
  - FACTORIAL: jQuery.factorial,
  - COMBINATION: jQuery.combination,
  - PERMUTATION: jQuery.permutation,
  - GAMMA: jQuery.gamma,
  - PRECISION: jQuery.precision,
  - MINIMUM: jQuery.minimum,
  - MAXIMUM: jQuery.maximum,
  - MEAN: jQuery.mean,
  - SUM: jQuery.sum,
  - MODE: jQuery.mode,
  - MEDIAN: jQuery.median,
  - QUARTILES: jQuery.quartiles,
  - VARIANCE: jQuery.variance,
  - MEANDEV: jQuery.meandev,
  - STDEV: jQuery.stdev,
  - COVARIANCE: jQuery.covariance,
  - CORR_COEFF: jQuery.corr_coeff,
  - UNIFORM: jQuery.uniform,
  - BINOMIAL: jQuery.binomial,
  - BINOMIALCDF: jQuery.binomialcdf,
  - NEGBIN: jQuery.negbin,
  - NEGBINCFD: jQuery.negbincdf,
  - HYPGEOM: jQuery.hypgeom,
  - HYPGEOMCDF: jQuery.hypgeomcdf,
  - EXPONENTIALCDF: jQuery.exponentialcdf,
  - POISSON: jQuery.poisson,
  - POISSONCDF: jQuery.poissoncdf,
  - NORMCDF: jQuery.normcdf,
  - LINEAR_REG_EQ: jQuery.linear_reg_eq,
  - SECANTMETHOD: jQuery.secantmethod,
  - FIVEPT: jQuery.fivept,
History: sheet differences shown

Since Tiki6 spreadsheets versions can be compared showing easily differences between any pair of versions: pink background for deleted content, green background when new content has been added, and prepending a "+" sign for the new text added, and a negative "-" sign for text deleted.

Example:

Sheet in edit mode, showing the new toolbar specific from the spreadsheet feature:

![2009s Timeline](image)

When you click in the "History" button below each spreadsheet when it is in view mode, you are shown a table to choose which versions you want to compare:

![2009s Timeline](image)

Then, after you select any pair, you can click on "compare", and you can see the differences between those two versions of the same spreadsheet:
Note that scrollbars will be locked together to ease navigation on them both synchronized on the same columns at the same time with a single scrollbar movement.

**New syntax for formulas**

You can use some formulas like in OOo Calc or MS Excel, using slightly different syntax (because the JQ Spreadsheet is using Javascript for the formulas):

```
=IF(E10="Y",695,IF(E10="N",495,"ERROR"))
```

or like this

```
=IF(SHEET1:E10="N",0.08,IF(SHEET1:E10="Y",0.25,"ERROR"))
```

**Aliases:**

- Spreadsheet Jquery | Spreadsheet jquery.sheet | jquery.sheet