Technical Guide for Spreadsheet

This document provides information about the functionalities of the widget for data entry and management.

Conventions

This guide uses the following conventions:

Item	Convention
Buttons, menus, tabs, dialog titles	**boldface** font
Keyboard buttons, names of functions	screen font
Selection sequences of buttons or options	**Data** > **Data Validation**

Overview

The Kendo UI Spreadsheet is used for the implementation of related data and its visualization in a tabular format (rows and columns). This kind of data structuring provides for an easier management and analysis. The widget renders the touch and feel of a Microsoft Excel table by offering many cell-formatting options, styles, and themes while utilizing simpler and easy-to-master user interface.

Figure 1: Main Elements of the Spreadsheet
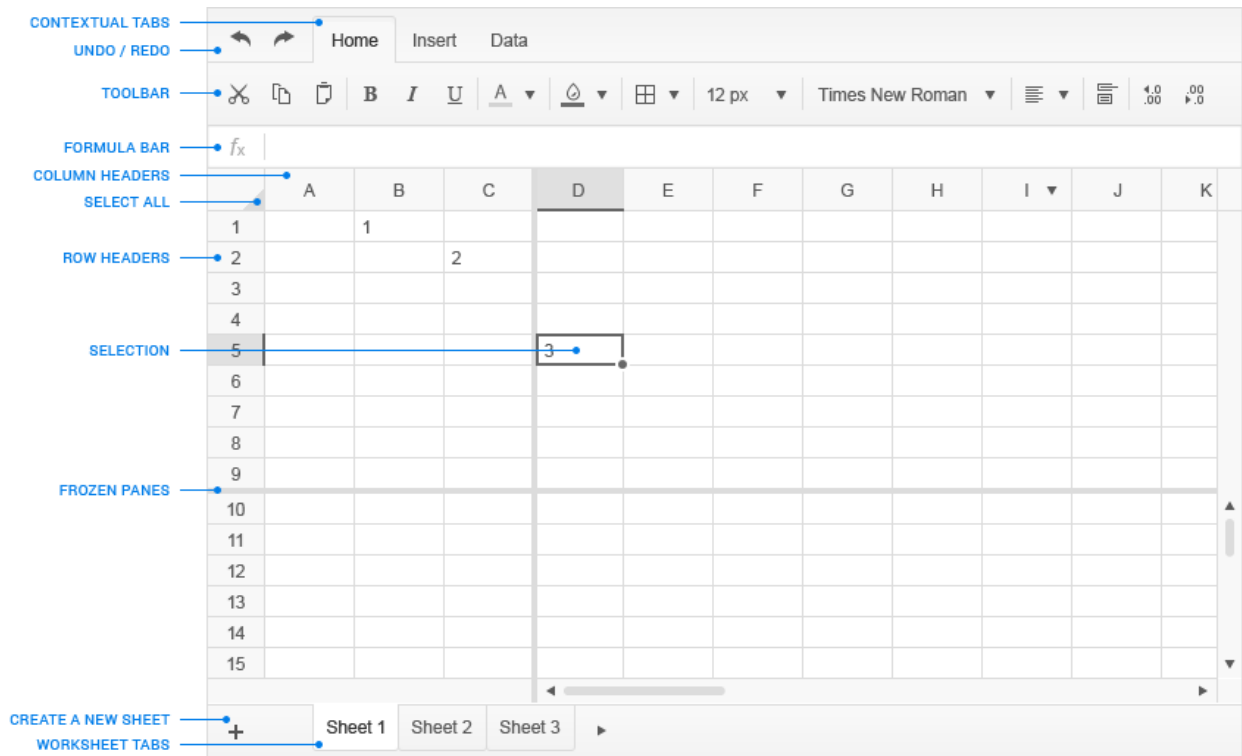
Actions

Sheets

When you open the Spreadsheet, the widget automatically generates a worksheet and applies to it a collection of default settings.

What you want	How to get there
Select	Click **Select All** [ ] located to the left of column header **A** and above row header **1** on the active sheet
Create	Click **+** on the Sheet Tab Bar to create a new sheet
Rename	Double-click the tab of the sheet you want to rename and modify it Press **Enter** to exit, or click anywhere on the sheet
Reorder	Click and hold the sheet tab, and drag it to the desired location on the Sheet Tab Bar
Delete	Click **X** [ ] on the tab of the sheet you want to remove

Cells

What you want	How to get there
Select/activate	Click a cell
Select a range of cells	Click a cell Extend the selection by holding down the mouse while marking the selection you want
Edit	Double-click a cell
Copy content	Select a cell Click **Copy** [ ] on the **Toolbar**, or right-click the desired cell to display the context menu and choose **Copy** from it, or use the **Ctrl + C** keyboard shortcut
Cut content	Select a cell Click **Cut** [ ] on the **Toolbar**, or right-click the desired cell to display the context menu and choose **Cut** from it, or use the **Ctrl + X** keyboard shortcut
Paste content	Click the cell where you want to place the copied or cut content Click **Paste** [ ] on the **Toolbar**, or right-click the desired cell to display the context menu and choose **Paste** from it, or use the **Ctrl + V** keyboard shortcut
Delete content	Select a cell Press **Delete** on your keyboard to remove its content
Align content	Select a cell Click **Alignment** [ ] on the **Toolbar** Choose a style form the drop-down list
Wrap content	Select a cell that contains the content you want to wrap Click **Wrap Text** [ ] on the **Toolbar**
Merge cells	Select the cells you want to merge Right-click the selection > **Merge** Select the option from the **Merge Cells** pop-up window
Merge cells (via **Toolbar**)	Select the cells you want to merge Click **Merge Cells** [ ] on the **Toolbar** Choose an option from the drop-down list
Add a background color	Select a cell Click **Background** [ ] on the **Toolbar** Choose a color from the drop-down list to apply to the cell background
Choose border styles and colors	Select a cell Click **Borders** [ ] on the **Toolbar** Select the border style and/or the color from the drop-down list

What you want	How to get there
	Click anywhere on the sheet to exit

Rows

What you want	How to get there
Select/activate	Click the row header against of the row you want to select
Insert	Select a row by clicking on the respective row header Click the **Insert** tab from the **Menu** Click **Add Row Below** [ ] or **Add Row Above** [ ] on the **Toolbar**
Delete	Right-click the row header Choose **Delete**
Delete (via **Toolbar**)	Select a row by clicking on its row header In the **Menu** click **Insert** On the **Toolbar** click **Delete Row** [ ]
Hide	Select the rows by clicking on the respective row header Right-click the row header Choose **Hide**
Wrap content	Select a row Click **Wrap Text** [ ] on the **Toolbar**
Resize the height of a row	Select a row or a cell from a row Hover the pointer over the row header field until either the upper or bottom field border is highlighted Click the highlighted area and hold while dragging it to the desired height. Release the hold.
Add a background color	Select a row On the **Toolbar** click **Background** [ ] Select the color from the drop-down list
Choose border styles and colors	Select a row Click **Borders** [ ] on the **Toolbar** Select the border style and/or the color from the drop-down list Click anywhere on the worksheet to exit

Columns

What you want	How to get there
Select/activate	Click the column header against the column you want to select
Insert	Select a column by clicking on the respective column header Click the **Insert** tab from the **Menu** On the **Toolbar** click **Add Column Left** [ ] or **Add Column Right** [ ]
Delete	Select the columns by clicking on the respective column header In the **Menu** click **Insert** On the **Toolbar** click **Delete Column** [ ]
Hide	Select a column by clicking on the respective column header Right-click the column header Choose **Hide**
Wrap content	Select the column whose content you want to wrap Click **Wrap Text** [ ] on the **Toolbar**
Resize the width of a column	Select a column or a cell within a column Hover the pointer over the column header field until either the left or right border is highlighted Click the highlighted area and hold while dragging it to the desired width. Release the hold.
Add a background color	Select a column On the **Toolbar** click **Background** [ ] Select the color from the drop-down list
Choose border styles and colors	Select a column Click **Borders** [ ] on the **Toolbar** Select the border style and/or the color from the drop-down list Click anywhere on the sheet to exit

Fonts

What you want	How to get there
Choose fonts	Select the cells to which you want to apply the font On the **Toolbar** click **Font** [ ] Choose a font type from the drop-down list
Edit font sizes	Select the cells to which you want to apply the font size On the **Toolbar** click **Font Size** [ ] Choose the font size from the predetermined values in drop-down list
Format fonts	Select the cells where you want to format the font

What you want	How to get there
	Use any of the following commands: To make make the font **bold**, click **Bold** [ ] on the **Toolbar** To make make the font *italic*, click **Italic** [ ] on the **Toolbar** To make make the font <u>underlined</u>, click **Underline** [ ] on the **Toolbar**

Filters

What you want	How to get there
Sort fields	Click **Data** on the **Tab Bar** Select a column Click **Sort** [ ] on the **Toolbar** and choose any of the two options from the drop-down list: **Sort range A to Z** sorts the content within the selected columns in ascending order **Sort range Z to A** sorts the content within the selected columns in descending alphabetical order
Unsort fields	Click **Undo** [ ] on the **Menu** to reverse the sorting you made. Or Add a new column. Check which is the last active field of the columns whose data you want to sort. Then add a subsequent number (1, 2, 3, etc.) to each field of the recently added column ending with the field in the same row as the last field of the columns whose content you want to sort. In this way you can revert the sorting of the target columns by applying the sorting option in ascending order to the recently added helper column.
Filter information	Click **Data** on the **Tab Bar** Select the columns to which you want to apply the filtering criteria Click **Filter** [ ] on the **Toolbar** Choose from the drop-down list of options: **Sort range A to Z** sorts the data within the columns in ascending alphabetical order **Sort range Z to A** sorts the data within the columns in descending alphabetical order **Filter by condition** filters the data within the column by applying any of the conditions from the drop-down list of options. Each of them can be applied to text fields, dates, or numbers: <u>Text fields</u>: Choose any of the options referring to texts from the **Filter by condition** drop-down list. Fill in the field below to set the filter condition. Click **Apply**. For example, choose **Text starts with**, set the condition to **E**, and click **Apply**. The result shows all rows containing text fields that start with an **E**. You

What you want	How to get there
	can alphabetically sort the filtered information by clicking **Sort range A to Z** or **Sort range Z to A**.
	Dates: Choose any of the options referring to dates from the **Filter by condition** drop-down list. Fill in the field below to set the filter condition. Click **Apply**. For example, choose **Date is**, set the condition to **6/30/2014**, and click **Apply**. The result is a list of only rows containing fields that display the date 6/30/2014. Note that the date format may differ depending on the order of date components. Make sure you check the current format before applying this filter.
	Numbers: Choose any of the options referring to numbers from the **Filter by condition** drop-down list. Fill in the field below to set the filter condition. Click **Apply**. For example, choose **Is equal to**, set the condition to **10230**, and click **Apply**. The result is a list of only rows containing fields that display the number 10230.
	To retrieve all applied filters and sorting conditions, from **Filter by condition** choose **None** > **Apply**.
	Filter by value provides more options for filtering numbers. Select the checkbox against **All** to clear all conditions and view all rows within the active sheet Uncheck **All** to clear all checkboxes, and choose the values according to which you want to filter the data in the selected columns.

File Import and Export

You are able to export the content of your Spreadsheet to Portable Document Format (PDF) or Excel format (.xlsx) files, as well as import Excel Workbook content to the Spreadsheet.

What you want	How to get there
Import files	Click **Open** [ ] on the **Toolbar**. From the dialog box select the Excel Workbook you want to import by clicking on it. Click **Open** to load its content.
Export files	Click **Export** [ ]. Export to Excel 2. In the **File name** field fill in a name for the file that is going to be exported. 3. From the **Save as type** drop-down list choose **Excel Workbook (.xlsx)**. 4. Click **Save** to locally download the exported Excel file and follow your browser instructions to proceed further on.

What you want	How to get there
	Export in PDF
	2. In the **File name** field fill in a name for the file that is going to be exported.
	3. From the drop-down list against **Save as type** choose **Portable Document Format (.pdf)**.
	4. From the **Export** drop-down list choose which part of the content you want to export—the entire workbook, active sheet, or a partial content selection.
	5. From the **Paper size** drop-down list pick the size in which you want the exported file to be displayed.
	6. From the **Margins** drop-down list select what the margins of the resulting pages—normal, narrow, or wide.
	7. Indicate whether you want to display the content of the resulting file in a horizontal or vertical orientation by clicking on the respective icon.
	8. By checking **Guidelines** against **Print**, your exported PDF document is going to display its content in a table format with gridlines. If you want to disable the gridlines, uncheck the button. By default, **Guidelines** is checked for you to provide for the better visualization of the content.
	9. Checking the **Fit to page** option against **Scale** is going to automatically make the content from your spreadsheets fit within the boundaries of the exported PDF document. By default, **Fit to page** is checked for you to provide for the better visualization of the content.
	10. By checking the **Horizontally** option against **Center**, the content of the exported PDF file is going to be centered according to the horizontal margins of each exported sheet. By checking the **Vertically** option against **Center**, the content of the exported PDF file is going to be centered according to the vertical margins of each exported sheet. By default, both options are checked for you to provide for the better visualization of the content.
	11. Click **Save** to locally download the exported PDF file and follow your browser instructions to proceed further on.

Other

What you want	How to get there
Auto fill	Insert textual, numeric, or textual and numeric characters of one and the same pattern in at least two subsequent column cells. For example, 1, 2. Select these cells. To copy the data series automatically, drag the fill handle across, down, or up the cells you want to fill.

What you want	How to get there
	Note that the **Auto Fill** command copies the format of the cells with the initial data series and will apply it to the target ones. If you select just one cell and drag the fill handle to auto-complete adjacent cells, the command copies, but does not change in the existing pattern, the content from the initial cell to each of the target ones.
Freeze panes	Select the row or column which you want to freeze From the **Toolbar** click **Freeze Panes** Choose the option from the drop-down list
Apply the Undo function	Click **Undo** [ ] on the **Menu** to reverse the actions you made during your current session. The number of actions you can reverse using Undo is unlimited.
Apply the Redo function	Click **Redo** [ ] on the **Menu** to repeat the actions you made during your current session. The number of actions you can repeat using Redo is unlimited.
Increase decimal values	Click **Increase Decimal** [ ] on the **Toolbar** to increase the number of digits after the decimal point
Decrease decimal values	Click **Decrease Decimal** [ ] on the **Toolbar** to decrease the number of digits after the decimal point
Customize the format of numbers	Select the cells where you want to format the font Click **Custom Format** [ ] on the **Toolbar** Select an option from the drop-down list. The style of formatting is hinted to the right of each option.
Further customize the format of numbers	Select the cells whose content you want to format Click **Custom Format** [ ] > **More Formats**. Choose any of the following options: **Number** customizes the format of numerical input **Currency** customizes the format of currency input **Date** customizes the format of date input
Apply formulas and functions	Select a cell Go to the **Formula Bar** and type an equal sign [**=**] Type your formula/function and press **Enter** once done to see the outcome of your input in the cell. Note that when you start writing a function, the **AutoComplete** prompts you with the syntax.
Edit formulas and functions	Double-click a cell to display the formula/function in the **Formula Bar** Change the formula/function and press **Enter**
Validate data	Data validation allows you to predetermine the format and constrain the value of the content of a single cell or cells within a range, column, or row: Select a cell or a range of cells In the **Menu** click **Data** > **Data Validation** to open the **Data Validation** window

What you want	How to get there
	Choose the criterion from the drop-down list of options. A new window with criteria-specific options appears. Use the prompts and drop-down options to set the rules for modifying the content.
Choose data from predefined values	The Spreadsheet supports the implementation of custom editors. They facilitate your input of data in a cell by providing you with predefined date and list values that are already placed in the necessary format. For example, if you are asked to fill in a date in a cell, clicking the icon of the custom editor of that cell provides you with a calendar. Choose the desired date without bothering about the syntax you are supposed to use to fill it in. Select a cell. An icon appears right next to it. Click on it to see the options that are predefined for you to choose from.
Define names for cells and ranges of cells	It is possible to define a custom name for a cell or a range of cells in the Spreadsheet. As a result, instead of typing the range in formulas later on, you can directly refer to the range by its name. Select a cell or a range of cells by using the mouse. For example, select the **A1:C3** range. Click on the **Name Box** of the Spreadsheet. Type in the name of the range that is currently selected. For example, name the range **MyRange**. Press **Enter**. Go to a cell outside the range and type in the **Formula Bar** a formula which refers to the range by its name. For example, **=SUM(MyRange)+2**.
Delete names of cells and ranges of cells	Select the name of the cell or the range of cells from the **Name Box**. Click **X**.

Important

- To close an active drop-down list or menu or exit an open window and then return to the worksheet, click **Cancel** whenever displayed as a command.
- To apply an options you have already selected, click **Apply** whenever displayed as a command.

Formulas and Functions

The Spreadsheet supports many of the Excel formulas and functions as seen in the List of Formulas and Functions.

Keyboard Navigation

The Spreadsheet supports many of the Excel keyboard shortcuts as seen in the List of Keyboard Shortcuts.

Known Limitations

- Because of specific requirements, browsers might not support the **Paste** command when it is initiated from the context menu or from the **Toolbar**. If you try to apply the command in either of these ways, a popup message is displayed informing you about the limitation. Use the keyboard navigation to achieve the desired result.
- Formulas that are very deeply nested, such as **=sin(cos(sin(cos(...))))** or **=A1+A2+A3+...+A200**, might produce a stack overflow error. Even though the latter does not seem nested, it is internally treated as **=((((...(A1+A2)+A3)+A4)+...+)+A200))**.

Solution

Use **SUM** when your case is similar to the second example of the nested formulas above. If to use **SUM** is not possible, avoid nesting values more than 100 levels deep. Note that the maximum depth depends on the browser, but one hundred is considered to be a safe limit.

List of Formulas and Functions

The following table provides a list of the formulas and functions the Spreadsheet supports.

Formulas and functions	Description
ABS	Returns the absolute (nonnegative) value of a number
ACOS	Returns the principal value of the arccosine of a number. The angle is returned in radians.
ACOSH	Returns the principal value of the inverse hyperbolic cosine of a number
ACOT	Returns the principal value of the arccotangent of a number. The angle is returned in radians.
ACOTH	Returns the hyperbolic arccotangent of a number
ADDRESS	Returns a cell address (reference) as a text
AGGREGATE	Returns an aggregate of a list or database
ARABIC	Converts Roman numbers to Arabic as numbers
AREAS	Returns the number of areas in a reference
ASIN	Returns the principal value of the arcsine of a number. The angle is returned in radians.
ASINH	Returns the principal value of the inverse hyperbolic sine of a number
ATAN	Returns the principal value of the arctangent of a number. The angle is returned in radians.
ATAN2	Returns the principal value of the arctangent from x- and y-coordinates in radians
ATANH	Returns the principal value of the inverse hyperbolic tangent of a number
AVEDEV	Calculates the average of the absolute deviations of listed values
AVERAGE	Returns the average of a set of numbers

Formulas and functions	Description
AVERAGEA	Returns the average of values, including numbers, text, and logical values
AVERAGEIF	Returns the average of all cells in a range based on a given criteria
AVERAGEIFS	Returns the average of all cells in a range based on multiple criteria
BASE	Converts a number into a text representation with the given base
BETA.DIST	Returns the beta cumulative distribution function
BETA.INV	Returns the inverse of the cumulative distribution function for a specified beta distribution
BETADIST	Returns the value of the probability density function or the cumulative distribution function for the beta distribution
BINOM.DIST	Returns the individual term binomial distribution probability
BINOM.DIST.RANGE	Returns the probability of a trial result using a binomial distribution
BINOM.INV	Returns the smallest value for which the cumulative binomial distribution is less than or equal to a criterion value
BINOMDIST	Returns the binomial distribution probability
CEILING	Rounds a number to the nearest integer or to the nearest multiple of significance
CEILING.MATH	Rounds a number up, to the nearest integer or to the nearest multiple of significance
CEILING.PRECISE	Rounds a number the nearest integer or to the nearest multiple of significance. Regardless of the sign of the number, the number is rounded up.
CHAR	Return character represented by a given number
CHISQ.DIST	Returns the cumulative beta probability density function
CHISQ.DIST.RT	Returns the one-tailed probability of the chi-squared distribution

Formulas and functions	Description
CHISQ.INV	Returns the cumulative beta probability density function
CHISQ.INV.RT	Returns the inverse of the one-tailed probability of the chi-squared distribution
CHISQ.TEST	Returns the test for independence
CHOOSE	Uses an index to return a value from a list of values
CLEAN	Removes all nonprintable characters from a text
CODE	Return a numeric value corresponding to the first character in a text string
COLUMN	Returns the column number(s) of a reference
COLUMNS	Returns the number of columns in a given range
COMBIN	Returns the number of combinations for a given number of objects
COMBINA	Returns the number of combinations with repetitions for a given number of objects
CONCATENATE	Joins a number of text strings into one text string
CONFIDENCE.NORM	Returns the confidence interval for a population mean
CONFIDENCE.T	Returns the confidence interval for a population mean, using a Student's t distribution
COS	Returns the cosine of a number. The angle is returned in radians.
COSH	Returns the hyperbolic cosine of a number
COT	Returns the cotangent of an angle, specified in radians
COTH	Returns the hyperbolic cotangent of a number
COUNT	Counts the number of numbers in a list of arguments
COUNTA	Counts the number of values in a list of arguments

Formulas and functions	Description
COUNTBLANK	Counts the number of blank cells in a range
COUNTIF	Counts the number of cells in a range that meet a criteria
COUNTIFS	Counts the number of cells in a range that meet multiple criteria
COVAR	Calculates the covariance between two cell ranges
COVARIANCE.P	Returns covariance, the average of the products of paired deviations
COVARIANCE.S	Returns the sample covariance, the average of the products deviations for each data point pair in two data sets
CRITBINOM	Returns the smallest value for which the cumulative binomial distribution is less than or equal to a criterion value
CSC	Returns the cosecant of an angle, specified in radians
CSCH	Returns the hyperbolic cosecant of an angle, specified in radians
DATE	Returns a date value constructed from a year, month, and day values
DATEVALUE	Returns the date converting it in the form of text to a serial number
DAY	Returns the day by converting it from a serial number
DAYS	Returns the number of days between two dates
DAYS360	Returns the number of days between two dates using the 360-day year
DECIMAL	Converts a text representation of a number in a given base into a decimal number
DEGREES	Converts radians to degrees
DOLLAR	Converts a number to text, using the $ currency format
EDATE	Returns the serial number of the date that is the indicated number of months before or after the start date

Formulas and functions	Description
EOMONTH	Returns the serial number of the last day of the month before or after a specified number of months
ERF	Returns the error function
ERFC	Returns the complementary error function
EVEN	Rounds a number up to the nearest even integer
EXACT	Reports if two text values are equal using a case-sensitive comparison
EXP	Returns e raised to the power of a given number
EXPON.DIST	Returns the exponential distribution
F.DIST	Returns the F probability distribution
F.DIST.RT	Returns the F probability distribution
F.INV	Returns the inverse of the F probability distribution
F.INV.RT	Returns the inverse of the F probability distribution
F.TEST	Returns the result of an F-test
FACT	Return factorial of a number
FACTDOUBLE	Returns the double factorial of a number
FALSE	Returns logical value False
FIND	Returns the starting position of a given text
FISHER	Returns the Fisher transformation
FISHERINV	Returns the inverse of the Fisher transformation
FIXED	Rounds the number to a specified number of decimals and formats the result as a text

Formulas and functions	Description
FLOOR	Rounds a number down to the nearest multiple of the second parameter
FLOOR.MATH	Rounds a number down, to the nearest integer or to the nearest multiple of significance
FLOOR.PRECISE	Rounds a number down to the nearest integer or to the nearest multiple of significance. Regardless of the sign of the number, the number is rounded down.
FORECAST	Assumes a future value based on existing x- and y- values
FORMULATEXT	Returns the formula at the given reference as text
FREQUENCY	Returns a frequency distribution as a vertical array
GAMMA	Return Gamma function value
GAMMA.DIST	Returns the Gamma distribution
GAMMA.INV	Returns the inverse of the Gamma cumulative distribution
GAMMALN	Returns the natural logarithm of the Gamma function
GAUSS	Returns 0.5 less than the standard normal cumulative distribution
GCD	Returns the greatest common divisor (GCD)
GEOMEAN	Returns the geometric mean of a sequence
HARMEAN	Returns the harmonic mean of a sequence
HLOOKUP	Looks for a matching value in the first row of a given table, and returns the value of the indicated row
HOUR	Converts a serial number to an hour
HYPERLINK	Creates a hyperlink involving an evaluated expression
IF	Returns one of two values, depending on a condition

Formulas and functions	Description
IFERROR	Returns a specified value if a formula evaluates to an error; otherwise, returns the result of the formula
INDEX	Returns a value or a reference to a value from within a table or range
INDIRECT	Returns a reference indicated by a text value
INT	Rounds a number down to the nearest integer
INTERCEPT	Returns the intercept of the linear regression line for the given data
ISBLANK	Returns True if the referenced cell is blank; else returns False
ISERR	Returns True if the value is any error except #N/A; else returns False
ISERROR	Returns True if the value is any error; else returns False
ISEVEN	Returns True if the value is even; else returns False
ISLOGICAL	Returns True if the value is logical; else returns False
ISNA	Returns True if the value is the #N/A error; else returns False
ISNONTEXT	Returns True if the value is not text; else returns False
ISNUMBER	Returns True if the value is a number; else returns False
ISO.CEILING	Returns a number that is rounded up to the nearest integer or to the nearest multiple of significance
ISODD	Returns True if the value is odd; else returns False
ISOWEEKNUM	Returns the ISO week number of the year for a given date
ISREF	Returns True if the value is a reference; else returns False
ISTEXT	Returns True if the value is text; else returns False
KURT	Returns the kurtosis ("peakedness") of a data set

Formulas and functions	Description
LARGE	Finds the nth largest value in a list
LCM	Returns the least common multiple
LEFT	Returns a selected number of text characters from the left
LEN	Returns the number of characters from a given text
LINEST	Returns the parameters of a (simple or multiple) linear regression equation for the given data and, optionally, statistics on this regression
LN	Returns the natural logarithm of a number
LOG	Returns the logarithm of a number to a specified base
LOG10	Returns the base-10 logarithm of a number
LOGEST	Returns the parameters of an exponential regression equation for the given data obtained by linearizing this intrinsically linear response function and returns, optionally, statistics on this regression
LOGNORM.DIST	Returns the cumulative lognormal distribution
LOGNORM.INV	Returns the inverse of the lognormal cumulative distribution
LOWER	Converts text to lowercase
MATCH	Finds an item in a range of cells, and returns its relative position (starting from 1)
MAX	Returns the maximum value in a set of numbers
MDETERM	Returns the determinant of a matrix
MEDIAN	Returns the median (middle) value in a list of numbers
MID	Returns a specific number of characters from a text string, starting at a specified position
MIN	Returns the minimum value in a set of numbers

Formulas and functions	Description
MINUTE	Converts a serial number into a minute
MINVERSE	Returns the inverse of a matrix
MMULT	Returns the matrix output of two arrays
MOD	Returns the remainder when one number is divided by another number
MODE.MULT	Returns a vertical array of the most frequently occurring, or repetitive values in an array or range of data
MODE.SNGL	Returns the most common value in a data set
MONTH	Converts a serial number to a month
MROUND	Rounds the number to the desired multiple
MULTINOMIAL	Returns the multinomial for a given set of values
MUNIT	Creates a unit matrix of a specified dimension
N	Returns the number of a value
NA	Returns the error value #N/A
NEGBINOM.DIST	Returns the negative binomial distribution
NEGBINOMDIST	Returns the negative binomial distribution
NETWORKDAYS	Returns the number of whole workdays between two dates
NORM.DIST	Returns the normal cumulative distribution
NORM.INV	Returns the inverse of the normal cumulative distribution
NORM.S.DIST	Returns the standard normal cumulative distribution
NORM.S.INV	Returns the inverse of the standard normal cumulative distribution

Formulas and functions	Description
NOT	Reverses the logic of its argument
NOW	Returns the serial number of the current date and time
ODD	Rounds a number up to the nearest odd integer, where "up" means "away from 0"
OFFSET	Modifies the position and dimension of a reference
PEARSON	Returns the Pearson correlation coefficient of two data sets
PERCENTILE	Calculates the x-th sample percentile of values in a range
PERCENTILE.EXC	Returns the k-th percentile of values in a range, where k is in the range 0..1, exclusive
PERCENTILE.INC	Returns the k-th percentile of values in a range
PERCENTRANK	Returns the percentage rank of a value in a sample
PERCENTRANK.EXC	Returns the rank of a value in a data set as a percentage (0..1, exclusive) of the data set
PERCENTRANK.INC	Returns the percentage rank of a value in a data set
PHI	Returns the value of the density function for a standard normal distribution
PI	Returns the approximate value of pi
POISSON.DIST	Returns the Poisson distribution
POWER	Returns the result of a number raised to the power of another number
PROB	Returns the probability that values in a range are between two limits
PRODUCT	Multiplies the set of numbers, including all numbers inside ranges
PROPER	Capitalizes the first letter in each word of a text value
QUARTILE	Returns the quartile of a data set

Formulas and functions	Description
QUARTILE.EXC	Returns the quartile of the data set, based on percentile values from 0..1, exclusive
QUARTILE.INC	Returns the quartile of a data set
QUOTIENT	Returns the integer portion of a division
RADIANS	Converts degrees to radians
RAND	Returns a random number between 0 (inclusive) and 1 (exclusive)
RANDBETWEEN	Returns a random number between specified values
RANK	Returns the rank of a number in a list of numbers
RANK.AVG	Returns the rank of a number in a list of numbers
RANK.EQ	Returns the rank of a number in a list of numbers
REPLACE	Replaces characters within text
REPT	Repeats text a specified number of times
RIGHT	Returns the rightmost characters from a text value
ROMAN	Converts Arabic numbers to Roman as text
ROUNDDOWN	Rounds a number down, towards zero, to the number of digits specified by digits
ROUNDUP	Rounds a number up, away from 0 (zero), to the number of digits specified by digits
ROW	Returns the row number(s) of a reference
ROWS	Returns the number of rows in a reference
RSQ	Returns the square of the Pearson product moment correlation coefficient
SEARCH	Finds a text value within another text value (not case-sensitive)

Formulas and functions	Description
SEC	Returns the secant of an angle specified in radians
SECH	Returns the hyperbolic secant of a given angle specified in radians
SECOND	Converts a serial number to a second. This function presumes that leap seconds never exist.
SERIESSUM	Returns the sum of a power series based on the formula
SIGN	Returns the sign of a number
SIN	Returns the sine of an angle specified in radians
SINH	Returns the hyperbolic sine of a number
SLOPE	Calculates the slope of the linear regression line
SMALL	Finds the n-th smallest value in a data set
SQRT	Returns a positive square root of a number
SQRTPI	Returns the square root of a number multiplied by pi
STDEV.P	Calculates the standard deviation based on the entire population
STDEV.S	Estimates the standard deviation based on a sample
STEYX	Returns the standard error of the predicted y-value for each x in the regression
SUBSTITUTE	Substitutes new text for old text string
SUBTOTAL	Evaluates a function on a range
SUM	Sums (adds) the set of numbers, including all numbers in a range
SUMIF	Sums the values of cells in a range that meet a criteria
SUMIFS	Sums the values of cells in a range that meet multiple criteria

Formulas and functions	Description
SUMPRODUCT	Returns the sum of the products of corresponding array elements
SUMSQ	Sums (adds) the set of squares of numbers, including all numbers in a range
SUMX2MY2	Returns the sum of the difference between the squares of corresponding values in two arrays
SUMX2PY2	Returns the sum of squares of corresponding values in two arrays
SUMXMY2	Returns the sum of squares of corresponding values in two arrays
T	Converts its arguments to text; else returns a 0-length text value
T.DIST	Returns the Percentage Points (probability) for the Student t-distribution
T.DIST.2T	Returns the Percentage Points (probability) for the Student t-distribution
T.DIST.RT	Returns the Student's t-distribution
T.INV	Returns the t-value of the Student's t-distribution as a function of the probability and the degrees of freedom
T.INV.2T	Returns the inverse of the Student's t-distribution
T.TEST	Returns the probability associated with a Student's t-test
TAN	Returns the tangent of a number in radians
TANH	Returns the hyperbolic tangent of a number
TEXT	Formats a number and converts it to text
TIME	Constructs a time value from hours, minutes, and seconds
TIMEVALUE	Returns the serial number of a particular time
TODAY	Returns the serial number of today's date

Formulas and functions	Description
TRANSPOSE	Returns the transpose of an array
TRIM	Removes spaces from text; replaces all internal multiple spaces with a single space
TRIMMEAN	Returns the mean of the interior of a data set, ignoring a proportion of high and low values
TRUE	Returns the logical value True
UNICHAR	Returns the character represented by the given numeric value according to the Unicode Standard
UNICODE	Returns the Unicode code point that corresponds to the first character of a text value
UPPER	Converts text to uppercase
VALUE	Converts a text argument to a number
VAR.P	Calculates variance based on the entire population
VAR.S	Estimates variance based on a sample
VLOOKUP	Looks for a matching value in a table or a range by row
WEEKDAY	Converts a serial number to a day of the week
WEEKNUM	Determines the week number of the year for a given date
WORKDAY	Returns the date serial number which is a specified number of work days before or after an input date
YEAR	Converts a serial number to a year
YEARFRAC	Extracts the number of years (including fractional part) between two dates

For more information on how to create formulas and what their syntax is, see the list of Excel functions.

Array Formulas

Similar to Excel, the Kendo UI Spreadsheet supports array formulas which return a matrix of values. You have to enter them in the same way as in Excel—by pre-selecting the target range and pressing **Ctrl**+**Shift**+**Enter** to save the formula.

List of Keyboard Shortcuts

The following table provides a list of the keyboard shortcuts the Spreadsheet supports.

Shortcuts	Description
Ctrl + A	Selects the whole worksheet
Ctrl + C	Copies selected cells
Ctrl + P	Displays the **Print** dialog box
Ctrl + S	Saves the active spreadsheet file
Ctrl + V	Inserts copied or cut cells to a selected location within the worksheet
Ctrl + X	Cuts selected cells
Ctrl + Y	Repeats the last action, if possible by using the Redo command
Ctrl + Z	Reverses the last action or deletes the last typed entry by using the Undo command
Ctrl + select a cell	Selects an adjacent or non adjacent cell
Ctrl + select cells	Selects a range of adjacent or nonadjacent cells. To simultaneously select more than one range of cells, repeat this command. The selected ranges can also overlap.
Ctrl + select a row or column	Selects an adjacent or nonadjacent row or column.
Ctrl + select rows or columns	Selects a range of adjacent or nonadjacent rows or columns. To simultaneously select more than one range of rows or columns, repeat this command. The selected ranges can also overlap.
Esc	Cancels an entry in a cell or in the **Formula Bar**
Arrow keys	Move a cell up, down, left, or right in a worksheet
Ctrl + Arrow key	Moves to the edge of the current data region of the active worksheet
Shift + Arrow key	Selects (a range of) adjacent cells, rows, or columns, by extending the selection by one cell, row, or column

Shortcuts	Description
Ctrl + Shift + Arrow key	Extends the selection of cells to the last nonblank cell in the same row or column as the active cell
Down Arrow / Up Arrow key	Selects the next or previous command when a menu or submenu is open In a dialog box, the arrow keys move between options in an active drop-down list, or between options in a group of options
Backspace	Deletes one character to the left in the **Formula Bar** Removes the content of the active cell In cell editing mode, it deletes the character to the left of the insertion point
Delete	Removes the content from selected cells without affecting cell formats In cell editing mode, it deletes the character to the right of the insertion point
End	Goes to the far right cell of the active row Selects the last command on a visible and active menu or submenu
Ctrl + End	Moves to the last cell on a worksheet, in the lowest used row of the used column on the far right If the cursor is in the formula bar, **Ctrl + End** moves the cursor to the end of the text **Ctrl** + **End** moves to the last cell on a worksheet, in the lowest used row of the used column on the far right
Ctrl + Shift + End	Extends the selection of cells to the last used cell on the worksheet located in lower-right corner If the cursor is in the formula bar, **Ctrl** + **Shift** + **End** selects all text in the formula bar from the cursor position to the end
Enter	Completes a cell entry from the cell or the **Formula Bar**, and selects the cell below In a data form, it moves to the first field in the next record Opens a selected menu or performs the action for a selected command In a dialog box, it performs the action for the default command button in the dialog box (the button with the bold outline)
Esc	Cancels an entry in the cell or **Formula Bar** Closes an open menu or submenu, dialog box, or message window
Home	Moves to the beginning of a row in a worksheet Selects the first command on the menu when a menu or submenu is visible
Ctrl + Home	Moves to the beginning of a worksheet
Ctrl + Shift + Home	Extends the selection of cells to the beginning of the worksheet
Page Down	Moves one screen down in a worksheet
Page Up	Moves one screen up in a worksheet

Shortcuts	Description
Spacebar	In a dialog box, performs the action for the selected button, or selects or clears a check box
Alt + Spacebar	Displays the **Control** menu for the Spreadsheet window
Tab	Moves one cell to the right in a worksheet Moves to the next option or option group in a dialog box Moves a cell within an active range of cells, rows, or columns.
Shift + Tab	Moves to the previous cell in a worksheet or the previous option in a dialog box