

**Note:** With the Line chart, there isn't an option to have a scale on the X axis. For this you'll need a Scatter chart with *chart.line* set to true. You either use labels across the X axis or an X scale.

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## Example

```
<script>
  window.onload = function ()
  {
    // The data for the Line chart. Multiple lines are specified as separate arrays.
    var data = [10,4,17,50,25,19,20,25,30,29,30,29];

    // Create the Line chart object. The arguments are the canvas ID and the data array.
    var line = new RGraph.Line("myLine", data);

    line.Set('chart.background.barcolor1', 'white');
    line.Set('chart.background.barcolor2', 'white');
    line.Set('chart.background.grid.color', 'rgba(238,238,238,1)');
    line.Set('chart.colors', ['red']);
    line.Set('chart.linewidth', 2);
    line.Set('chart.filled', true);
    line.Set('chart.hmargin', 5);
    line.Set('chart.labels', ['Jan', 'Feb', 'Mar', 'Apr', 'May', 'Jun', 'Jul', 'Aug', 'Sep', 'Oct', 'Nov', 'Dec']);
    line.Set('chart.gutter.left', 40);

    // Now call the .Draw() method to draw the chart.
    line.Draw();
  }
</script>
```

## Properties

You can use these properties to control how the Line chart appears. You can set them by using the Set() method. Eg:

```
myLine.Set('name', 'value');
```

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### Background

#### **chart.background.barcolor1**

The color of the background bars (1 of 2).

*Default: rgba(0,0,0,0)*

#### **chart.background.barcolor2**

The color of the background bars (2 of 2).

*Default: rgba(0,0,0,0)*

#### **chart.background.grid**

Whether to show the background grid or not.

*Default: true*

#### **chart.background.grid.color**

The color of the background grid.

*Default: #eee*

#### **chart.background.hbars**

An array of information stipulating horizontal colored bars. You can use these to indicate limits. Eg: `myLine.Set('hbars', [[75, 10, 'yellow'], [85, 15, 'red']]);` This would give you two bars, one red and a lower yellow bar. The units correspond to your scale, and are the starting point and the height.

*Default: null*

**chart.background.grid.hsize**

The horizontal size of the grid.

*Default: 25*

**chart.background.grid.vsize**

The vertical size of the grid.

*Default: 25*

**chart.background.grid.width**

The width of the background grid.

*Default: 1*

**chart.background.grid.border**

Determines whether a border line is drawn around the grid.

*Default: true*

**chart.background.grid.hlines**

Determines whether to draw the horizontal grid lines.

*Default: true*

**chart.background.grid.vlines**

Determines whether to draw the vertical grid lines.

*Default: true*

**chart.background.grid.autofit**

Instead of specifying a pixel width/height for the background grid, you can use autofit and specify how many horizontal and vertical lines you want.

*Default: true*

**chart.background.grid.autofit.numhlines**

When using autofit this allows you to specify how many horizontal grid lines you want.

*Default: 5*

**chart.background.grid.autofit.numvlines**

When using autofit this allows you to specify how many vertical grid lines you want.

*Default: 20*

**chart.background.grid.autofit.align**

If you want to have your grid lines line up with the labels (both X and Y axes), you can set this to true and RGraph will attempt to make the grid lines line up. If you have a *chart.hmargin* set then the alignment will be thrown out.

*Default: false*

**chart.background.image**

If you want to specify a background image to use on your chart, specify it with this property. If you use effects with a background image on your chart it make the effect flicker.

*Default: null*

**chart.background.image.stretch**

By default your background image is stretched (if necessary) to cover the whole chart area (gutters not included). If this is not what you want then set this property to false.  
*Default: true*

### **chart.background.image.x**

The X position of the image. The coordinates are the top left corner of the image.  
*Default: null*

### **chart.background.image.y**

The Y position of the image. The coordinates are the top left corner of the image.  
*Default: null*

### **chart.background.image.w**

The width of the image. If you have a large canvas with many charts - you may need to specify this.  
*Default: null*

### **chart.background.image.h**

The height of the image. If you have a large canvas with many charts - you may need to specify this.  
*Default: null*

### **chart.background.image.align**

Instead of specifying the coordinates of the image, you can instead simply align it top, bottom, left or right. Examples are:

- top left
- bottom right
- bottom
- right

*Default: null*

### **chart.backdrop**

When enabled this specifies that the line(s) will have a backdrop effect. You can control the transparency with the other backdrop settings).  
*Default: false*

### **chart.backdrop.size**

This controls the size/extent of the backdrop effect.  
*Default: 30*

### **chart.backdrop.alpha**

This controls how much transparency the backdrop effect has. It can go from 0 - 1.  
*Default: 0.2*

## **Labels and text**

**chart.labels.above**

Whether the values are shown in labels drawn above the line.

*Default: false*

**chart.labels.above.size**

The size of the labels which are drawn above the line.

*Default: 8*

**chart.labels**

An array of the X labels for the chart.

*Default: [] (An empty array)*

**chart.labels.ingraph**

An array of labels for the chart which are drawn "inside" the chart. If you have 5 data points then this should have a corresponding number of elements.

*Default: null*

**chart.ylabels**

Can be *true* or *false* and determines whether the chart has Y axis labels.

*Default: true*

**chart.ylabels.invert**

Reverses the Y axis so that 0 is at the top, instead of the bottom.

*Default: false*

**chart.ylabels.count**

A value (*1, 3, 5 or 10*) that controls how many Y labels there are.

*Default: 5*

**chart.ylabels.inside**

This controls whether the Y labels are drawn inside the Y axis or not. If your labels are large, this may help.

*Default: false*

**chart.ylabels.inside.color**

If the Y labels are to be drawn inside the Y axis, this is used as the background color.

*Default: rgba(255,255,255,0.5)*

**chart.ylabels.specific**

You can use this option to give your own Y labels (eg ['Low', 'Medium', 'High']).

*Default: null*

**chart.xlabels.inside**

This controls whether the X labels are drawn inside the X axis or not. By using this you can significantly reduce the size of the gutter needed.

*Default: false*

**chart.xlabels.inside.color**

If the X labels are to be drawn inside the X axis, this is used as the background color.

*Default: rgba(255,255,255,0.5)*

**chart.text.size**

The size of the text (in points).

*Default: 10*

**chart.text.angle**

The angle of the horizontal text labels (at the bottom of the chart). Previously this could be 0, 45 or 90, but now (31st July 2010) this can be any angle.

*Default: 0 (Horizontal)*

**chart.text.font**

The font used to render the text.

*Default: Verdana*

**chart.text.color**

The color of the labels.

*Default: black*

## **Margins**

**chart.gutter.left**

The left gutter of the chart, (the gutter is where the labels and title are)).

*Default: 25*

**chart.gutter.right**

The right gutter of the chart, (the gutter is where the labels and title are).

*Default: 25*

**chart.gutter.top**

The top gutter of the chart, (the gutter is where the labels and title are).

*Default: 25*

**chart.gutter.bottom**

The bottom gutter of the chart, (the gutter is where the labels and title are).

*Default: 25*

**chart.hmargin**

The size of the horizontal margin. This is on the inside of the axes.

*Default: 0*

## **Colors**

**chart.colors**

An array of line colors.

*Default: ['#f00', '#0f0', '', '#00f', '#f0f', '#ff0', '#0ff'] 9*

**chart.colors.alternate**

Set this to true if you want your line color(s) to be alternated. [See note](#)

*Default: false*

### **chart.fillstyle**

A single color or an array of colors that filled line charts will use.

**Important:** This used to be a string, and still can be, but can now also be an array.

*Default: null*

### **chart.filled**

Whether the area under the line is filled or not. This looks best when there is no horizontal margin.

**Note:** When showing multiple lines the values are additive by default. This means that if you have two lines they will be "stacked" on top of each other. If this is not the desired behaviour then you can set the option below to false.

*Default: false*

### **chart.filled.accumulative**

When showing multiple filled lines the values are by default accumulative (ie added to each other). If this is not the desired behaviour, then you can set this property to *false* to have them drawn "non-accumulatively".

**Note:** If you use fully opaque colors in conjunction with this option set to false it's feasible that you might not see one or more of the lines, or parts of the line. If you want to see all of the lines you should leave this option set to its default *true* setting.

*Default: true*

### **chart.filled.range**

This is useful for indicating a range. Exactly two datasets are required, with the space between them filled. This is useful for indicating a range.

*Default: false*

## **Shadow**

### **chart.shadow**

If true a shadow will be applied to the line.

*Default: false*

### **chart.shadow.color**

The color of the shadow. As well as a single color definition, this can also be an array of colors. This means that if you have multiple lines on your chart, each can have a different shadow color.

*Default: rgba(0,0,0,0.5)*

### **chart.shadow.offsetx**

The X offset in pixels for the shadow.

*Default: 3*

**chart.shadow.offsety**

The Y offset in pixels for the shadow.

*Default: 3*

**chart.shadow.blur**

The severity of the shadow blurring effect.

*Default: 3*

## ***Interactive features***

**chart.tooltips**

These are tooltips for the line(s). It should be an array of tooltips. If you have multiple lines, simply pass multiple arrays to the Set() method.

*Default: [] (An empty array)*

**chart.tooltips.effect**

The animated effect used for showing tooltips. Can be either *fade* or *expand*.

*Default: fade*

**chart.tooltips.css.class**

This is the name of the CSS class the chart uses.

*Default: RGraph\_tooltip*

**chart.tooltips.override**

If you wish to handle showing tooltips yourself, this should be a function object which does just that. *Default: null*

**chart.tooltips.highlight**

If you don't want/need the chart to be highlighted and thus avoid redrawing, then set this to false.

*Default: true*

**chart.tooltips.hotspot.xonly**

Set this to true if you want the tooltips to be triggered by the mouse X position only.

*Default: false*

**chart.tooltips.coords.page**

If you want the tooltips positioned at the event.pageX and event.pageY coordinates then set this to true.

*Default: false*

**chart.crosshairs**

If true, you will get a crosshair centering on the current mouse position.

*Default: false*

**chart.crosshairs.linewidth**

This controls the linewidth of the crosshairs.

*Default: 1*



**chart.crosshairs.color**

The color of the crosshairs.

*Default: #333*

**chart.crosshairs.hlines**

This determines whether the horizontal crosshair is shown.

*Default: true*

**chart.crosshairs.vlines**

This determines whether the vertical crosshair is shown.

*Default: true*

**chart.contextmenu**

An array of context menu items. Unlike the bar chart, you CAN have context menus at the same time as tooltips.

*Default: [] (An empty array)*

**chart.annotatable**

Whether annotations are enabled for the chart (ie you can draw on the chart interactively).

*Default: false*

**chart.annotate.color**

If you do not allow the use of the palette, then this will be the only color allowed for annotations.

*Default: black*

**chart.resizable**

Defaulting to false, this determines whether your chart will be resizable. Because of the numerous event handlers this has to install code on, This feature is unlikely to work with other dynamic features (the context menu is fine however).

*Default: false*

**chart.resize.handle.background**

With this you can specify the background color for the resize handle. If you're adjusting the position of the handle then you may need this to make the handle stand out more.

*Default: null*

**chart.adjustable**

Defaulting to false, this determines whether your chart will be adjustable (click a point and drag it).

*Default: false*

## ***Titles***

**chart.title**

The title of the chart.

*Default: none*

**chart.title.font**

The font that the title is rendered in. If not specified the chart.text.font setting is used (usually Verdana)

*Default: null*

**chart.title.size**

The size of the title. If not specified the size is usually 2pt bigger than the chart.text.size setting.

*Default: null*

**chart.title.bold**

Whether the title is bold or not.

*Default: true*

**chart.title.background**

The background color (if any) for the title.

*Default: null*

**chart.title.vpos**

This allows you to completely override the vertical positioning of the title. It should be a number between 0 and 1, and is multiplied with the gutter and then used as the vertical position. It can be useful if you need to have a large gutter.

*Default: null*

**chart.title.color**

The color of the title.

*Default: black*

**chart.title.xaxis**

This allows to specify a title for the X axis.

*Default: none*

**chart.title.xaxis.size**

This allows you to specify a size for the X axis title.

*Default: null*

**chart.title.xaxis.font**

This allows to specify a font for the X axis title.

*Default: null*

**chart.title.xaxis.bold**

This controls whether the X axis title is bold or not.

*Default: true*

**chart.title.yaxis**

This allows to specify a title for the Y axis.

*Default: none*

**chart.title.yaxis.size**

This allows you to specify a size for the Y axis title.

*Default: null*

### **chart.title.yaxis.font**

This allows to specify a font for the Y axis title.

*Default: null*

### **chart.title.yaxis.bold**

This controls whether the Y axis title is bold or not.

*Default: true*

### **chart.title.xaxis.pos**

This is multiplied with the gutter to give the position of the X axis title.

*Default: 0.25*

### **chart.title.yaxis.pos**

This is multiplied with the gutter to give the position of the Y axis title.

*Default: 0.25*

### **chart.title.yaxis.align**

Instead of using the option above you can instead use this option, specifying *left* or *right*.

*Default: left*

## **Key**

### **chart.key**

An array of key information.

*Default: [] (An empty array)*

### **chart.key.background**

The color of the key background. Typically white, you could set this to something like `rgba(255,255,255,0.7)` to allow people to see things behind it.

*Default: white*

### **chart.key.halign**

Instead of specifying the exact x/y coordinates, you can use this property to simply specify whether the key should be aligned *left* or *right*. By default the key is positioned on the opposite side to the Y axis.

*Default: null*

### **chart.key.position**

Determines the position of the key. Either **graph** (default), or **gutter**.

*Default: graph*

### **chart.key.position.x**

This allows you to specify a specific X coordinate for the key.

*Default: null*

### **chart.key.position.y**

This allows you to specify a specific Y coordinate for the key.

*Default: null*

### **chart.key.position.gutter.boxed**

If you have the key in gutter mode (ie horizontal), this allows you to give a background color.

*Default: true*

### **chart.key.shadow**

Whether a small drop shadow is applied to the key.

*Default: false*

### **chart.key.shadow.color**

The color of the shadow.

*Default: #666*

### **chart.key.shadow.blur**

The extent of the blurring effect used on the shadow.

*Default: 3*

### **chart.key.shadow.offsetx**

The X offset of the shadow.

*Default: 2*

### **chart.key.shadow.offsety**

The Y offset of the shadow.

*Default: 2*

### **chart.key.rounded**

This controls whether the corners of the key (in graph mode) are curved. If the key is gutter mode, this has no effect.

*Default: false*

### **chart.key.color.shape**

This can be *square*, *circle* or *line* and controls how the color indicators in the key appear.

*Default: square*

### **chart.key.linewidth**

The line width of the surrounding border on the key.

*Default: 1*

### **chart.key.interactive**

The Line chart supports interactive keys - so you can click on a key element and RGraph will highlight the appropriate line, whilst fading the rest of the chart.

*Default: false*

## **Scale**

### **chart.scale.formatter**

To allow thoroughly custom formats of numbers in the scale, you can use this option to

specify a function that is used by RGraph to format numbers. This function should handle ALL of the formatting. Eg:

```
function myFormatter(obj, num)
{
    return num + 'F'; // An example of formatting
}
myGraph.Set('chart.scale.formatter', myFormatter);
```

*Default: null*

### **chart.units.post**

The units (if any) that the Y axis is measured in (gets appended to the number)

*Default: none*

### **chart.units.pre**

The units (if any) that the Y axis is measured in (gets prepended to the number)

*Default: none*

### **chart.scale.decimals**

Determines the precision of the numbers used as the scale.

*Default: 0*

### **chart.scale.point**

The character used as the decimal point.

*Default: .*

### **chart.scale.thousand**

The character used as the thousand separator

*Default: ,*

### **chart.scale.round**

Whether to round the maximum scale value up or not. This will produce slightly better scales in some instances.

*Default: null*

### **chart.ymin**

The optional minimum Y scale value. If not specified then it will be zero.

*Default: null*

### **chart.ymax**

The optional maximum Y scale value. If not specified then it will be calculated.

*Default: null (It's calculated)*

### **chart.outofbounds**

Normally, out-of-bounds values are not drawn. By setting this to *true* you can change this behaviour.

*Default: false*

## **Axis properties**

**chart.numxticks**

The number of X tickmarks.

*Default: null (linked to number of datapoints)*

**chart.numyticks**

The number of Y tickmarks.

*Default: 10*

**chart.ticksize**

The size of the tick marks. This only affects certain styles of tickmarks.

*Default: 3*

**chart.tickdirection**

Whether the ticks are above or below the axis.

*Default: -1 (-1 is below, 1 is above)*

**chart.axis.color**

The color of the axes.

*Default: black*

**chart.xaxispos**

The position of the X axis. It can be either *bottom* or *center*.

*Default: bottom*

**chart.yaxispos**

Specifies the Y axis position. Can be *left* or *right*.

*Default: left*

**chart.noaxes**

Whether the axes are drawn

*Default: false (the axes ARE drawn)*

**chart.axesontop**

A minor option, this sets the axes to be redrawn after the chart has been drawn. This is only useful in a certain set of circumstances - the chart is filled and the line width is small.

*Default: false*

**chart.noendxtick**

When you're combining the Bar and Line charts, you may want to use this property to stop the end X tick from being drawn.

*Default: false (the end tick IS drawn)*

**chart.noendytick**

When you're combining the Bar and Line charts, you may want to use this property to stop the end Y tick from being drawn.

*Default: false (the end tick IS drawn)*

### **chart.zoom.factor**

This is the factor that the chart will be zoomed by (bigger values means more zoom)

*Default: 1.5*

### **chart.zoom.fade.in**

Whether the zoomed canvas fades in or not. This also can be used to control the fade in for the zoom in thumbnail mode.

*Default: true*

### **chart.zoom.fade.out**

Whether the zoomed canvas fades out or not. This also can be used to control the fade in for the zoom in thumbnail mode.

*Default: true*

### **chart.zoom.hdir**

The horizontal direction of the zoom. Possible values are: *left, center, right*

*Default: right*

### **chart.zoom.vdir**

The vertical direction of the zoom. Possible values are: *up, center, down*

*Default: down*

### **chart.zoom.delay**

The delay (in milliseconds) between frames.

*Default: 50*

### **chart.zoom.frames**

The number of frames in the zoom animation.

*Default: 10*

### **chart.zoom.shadow**

Whether or not the zoomed canvas has a shadow or not.

*Default: true*

### **chart.zoom.background**

Defaulting to true, this determines whether the zoom has a dark, semi-opaque background that covers the entire web page.

*Default: true*

## **Events**

### **chart.events.click**

If you want to add your own *onclick* function you can do so by assigning it to this property..

*Default: null*

### **chart.events.mousemove**

If you want to add your own *onmousemove* function you can do so by assigning it to this property.

*Default: null*

## **Miscellaneous**

### **chart.tickmarks**

What kind of tickmarks to use on the chart. This can be:

- dot
- circle
- filledcircle
- endcircle
- square
- endsquare
- filledsquare
- filledendsquare
- tick
- halftick
- endtick
- cross
- borderedcircle (same as dot)
- arrow
- filledarrow

Note that "arrow" and "filledarrow" look better with a thinner (1 or 2) linewidth setting. Also note that now (10th August 2010) as well as a string, this can be an array of different tickmark styles.

*Default: null*

### **chart.tickmarks.dot.color**

This is the color of the BORDER around the dot/borderedcircle style tickmarks.

*Default: #fff*

### **chart.tickmarks.linewidth**

This is the width of the line used when drawing the tickmarks. By default this is the same as the chart.linewidth setting.

*Default: null*

### **chart.stepped**

Draws the line as stepped. Useful for showing stock performance for example.

*Default: false*

### **chart.linewidth**

The width of the line (ie the actual line on the chart). Note: If your line is stepped and filled, and you don't want a trailing line indicating the last value, you can set this to zero.

*Default: 1*

### **chart.variant**

At present this can only be *3d*, and gives a small 3D effect.



*Default: null*

### **chart.animation.unfold.x**

This is used by the Unfold Line chart animation and dictates whether the X value is unfolded.

*Default: false*

### **chart.animation.unfold.y**

This is used by the Unfold Line chart animation and dictates whether the Y value is unfolded.

*Default: true*

### **chart.animation.unfold.initial**

This property can be used to set the initial factor for the Unfold animation. Setting this to a value less than one will cause the line to expand outwards, whilst a value greater than one will cause the line to contract towards the correct values.

*Default: 2*

### **chart.chromefix**

Since version 6, Chrome has had a shadow bug, which becomes apparent when you use shadow blurring. This value defaults to true and means that RGraph will skirt the bug with a small fix.

*Default: true*

### **chart.highlight.stroke**

If you use tooltips, this controls the colour of the highlight stroke.

*Default: black*

### **chart.highlight.fill**

If you use tooltips, this controls the colour of the highlight fill.

*Default: rgba(255,255,255,0.5)*

### **chart.curvy**

If you prefer - this draws a more curvy chart. Because of the curves these charts are not exact, and the inaccuracy increases with a greater curve factor (controlled by the next property). Being new, this property may not work with all the line chart features and should be used with caution.

*Default: false*

### **chart.curvy.factor**

This controls the severity of the curves when the above property is used. It can be a decimal from 0 (not curvy at all) to 0.5 (quite curvy).

*Default: 0.25*

## **Methods**

### **obj.getShape(event)**

This method makes it easier to get hold of which point on the Line chart has been hovered over. It returns an array of:

- The chart object
- The X coordinate
- The Y coordinate
- The numerical index of the point. This corresponds (for example) to the tooltips array, and the coordinates array

The shape also includes textual indexes like this: *shape['object']* And they are:

- object
- x
- y
- tooltip
- index
- index\_adjusted
- dataset

An example usage is:

```
<canvas id="cvs" width="600" height="300">[No canvas support]</canvas>
```

```
<script src="RGraph.common.core.js"></script>
```

```
<script src="RGraph.line.js"></script>
```

```
<script>
```

```
myGraph = new RGraph.Line('cvs', [10,4,2,4,1]);
myGraph.Set('chart.hmargin', 10);
myGraph.Set('chart.tickmarks', 'endcircle');
myGraph.Set('chart.labels', ['Fred','John','Kev','Lou','Pete']);
myGraph.Draw();
```

```
RGraph.Register(myGraph);
```

```
myGraph.canvas.onmousemove = function (e)
```

```
{
  RGraph.FixEventObject(e);
```

```
  var canvas = e.target;
  var context = canvas.getContext('2d');
  var obj = e.target.__object__;
```

```
  // This is the method which simplifies getting coordinates
  var point = obj.getShape(e);
```

```
  if (point) {
```

```
    canvas.style.cursor = 'pointer';
```

```
    // Is this the same tooltip as the one (if any) that's already being shown
```

```
    if (RGraph.Registry.Get('chart.tooltip') && RGraph.Registry.Get('chart.tooltip').__index__ ==
```

```
point[3]) {
      return;
    }
```

```
    // Start afresh
```

```

RGraph.Redraw();

// Show the tooltip
RGraph.Tooltip(canvas, obj.Get('chart.labels')[point[3]], e.pageX, e.pageY, point[3]);

// Highlight the point
context.strokeStyle = 'gray';
context.fillStyle = 'white';
context.beginPath();
context.moveTo(point[1], point[2]);
context.arc(point[1], point[2], 2, 0, 6.26, 0);
context.stroke();
context.fill();

return;
}

canvas.style.cursor = 'default';
}

window.onclick = function ()
{
  RGraph.Redraw();
}
</script>

```

### **obj.getValue(mixed)**

This method can be used to get the value at a particular point or at the mouse coordinates, based on the scale that is in use. Not simply the coordinates of the mouse. The argument can either be an event object (for use in event listener functions) OR a two element array consisting of the X and Y coordinates (ie when you're not necessarily in an event listener). It returns null if the mouse or coordinates are in the gutter areas. An example:

```

myChart.canvas.onclick = function (e)
{
  var obj = e.target.__object__;
  var value = obj.getValue(e);

  // ...
}

```

## ***Combining the Line and Bar charts***

You can combine the Bar and Line charts with. In the same vein, you can have Y axes on both the left and right sides.

## ***Alternative colors***

Instead of a string stipulating the color, each element of the colors array can itself be a two element array, stipulating the up color, and the down color. To use alternating colors you must also stipulate the alternate property:

```

myLine.Set('chart.colors.alternate', true);
myLine.Set('chart.colors', ['red', ['blue', 'yellow'], 'green']);

```

## **Accumulative filled Line charts**

The default behaviour of filled Line charts is to "stack" the lines on top of each other. This allows them all to be totally visible, no matter what (unless a line has a zero value of course). If this is not desired, then there is an option (*chart.filled.accumulative - true/false*) to change this behaviour so the lines are plotted "as-is". Keep in mind that if you set this option to false (ie the Lines are plotted as-is) it may be wiser to use semi-transparent colors or some parts of data sets (or even entire data sets) may be hidden by others.

## **Custom tickmarks**

If none of the available tickmark styles are suitable, you can instead specify a function object that draws the tickmark, enabling you to draw the tickmark yourself. For example:

```
<script>
  line.Set('chart.tickmarks', myTick);

  /**
   * The function that is called once per tickmark, to draw it
   *
   * @param object obj The chart object
   * @param array data The entire line data
   * @param number value The individual points value
   * @param number index The current index, in the data array
   * @param number x The X coordinate
   * @param number y The Y coordinate
   * @param string color The color of the line
   * @param number prevX The previous X coordinate
   * @param number prevY The previous Y coordinate
   */
  function myTick (obj, data, value, index, x, y, color, prevX, prevY)
  {
    // Draw your custom tick here
  }
</script>
```

## **The *coords2* array**

An alternative method of indexing the chart coordinates is available in *obj.coords2*. With this array, all of the first lines coordinates are available in *obj.coords2[0]*, the second lines coordinates in *obj.coords2[1]* and so on.

## **The *\_\_index2\_\_* property on tooltips**

When showing tooltips, one property of the tooltip is *.\_\_index2\_\_*. This is the index that pertains to the individual dataset. In a function called from the *ontooltip* event you can access it like this:

```
function myFunc (obj)
{
  var idx = RGraph.Registry.Get('chart.tooltip').__index2__;
}
RGraph.AddCustomEventListener(myObject, 'ontooltip', myFunc );
```

## Note about the `data_arr` array

Sometimes you may wish to view your data as one big array, instead of one array per dataset. In this case the `obj.data_arr` is available. This is one long array containing all of the individual data points.

## Beispiel:

```
<html><head>
<script src="../../libraries/RGraph.common.core.js" ></script>
<script src="../../libraries/RGraph.common.dynamic.js" ></script>
<script src="../../libraries/RGraph.line.js" ></script>
<!--[if lt IE 9]><script src="../../excanvas/excanvas.js"></script><![endif]-->

<title>Einfaches Liniendiagramm</title>

<script>
  window.onload = function ()
  {
    var line = new RGraph.Line('canvas', [3,7,5,12,8]);
    line.Set('chart.labels', ['30.12.12','31.12.12','01.01.13','02.01.13','03.01.13']);
    line.Set('chart.title.font','Arial'); // Die Schriftart für den Titel wird vereinbart
    line.Set('chart.title.size',20); // Die Schriftgröße für den Titel wird vereinbart
    line.Set('chart.title','Temperaturen');
    line.Set('chart.curvy', true); // Die Verbindung der Punkte wird geglättet
    line.Set('chart.tickmarks', true);
    line.Set('chart.linewidth', 4);
    line.Set('chart.gutter.left', 80);
    line.Set('chart.gutter.top', 50);
    line.Set('chart.text.font', 'Verdana');
    // Die Schriftart für den Text wird vereinbart
    line.Set('chart.text.size', 11); // Die Schriftgröße für den Text wird vereinbart
    line.Set('chart.text.color', '#343434');
    line.Set('chart.tickmarks.dot.color','#0000ff');
    line.Set('chart.tickmarks', 'circle');
    line.Set('chart.tickmarks.size', 40);
    line.Draw()      }
</script>
</head>

<body>
<canvas id="canvas" width="800" height="400">Keine Canvas-
Unterstützung</canvas>
</body>
</html>
```

