

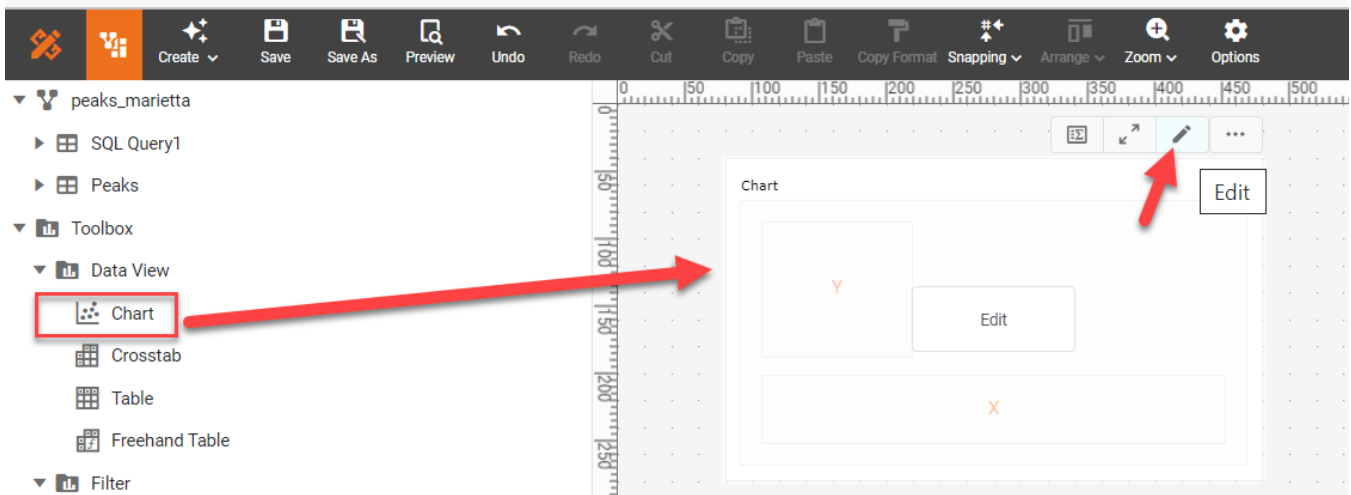
# Create a control chart

This article explains how to create a control chart: a line chart showing the evolution of a measure with some reference lines representing the average of the sample, an upper line for the upper control limit, and a lower line for the lower control limit. The limits correspond to  $\pm 3$  standard deviations.

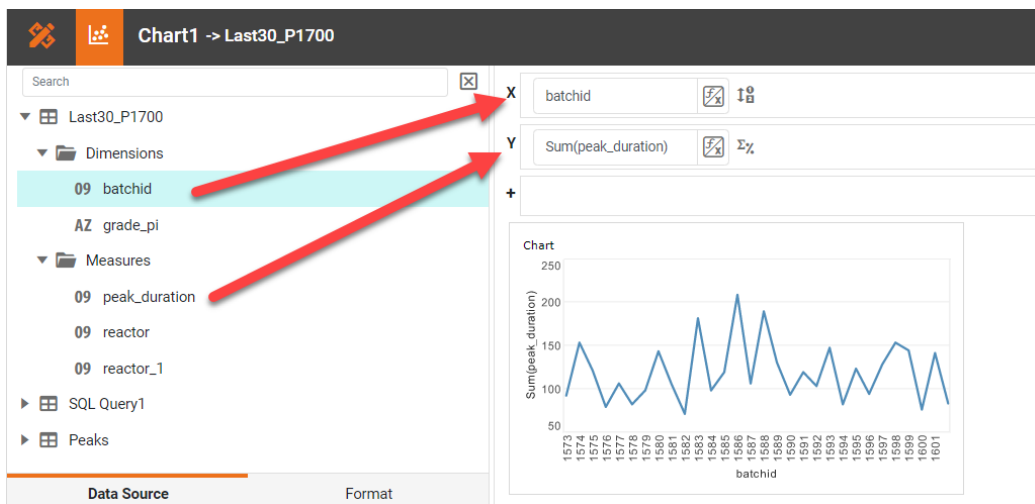
In our example, the measure is the *peak\_duration* which will be plotted against the batch id.

batchid	grade_pi	peak_duration
139	P-1700	86.00
141	P-1700	124.00
143	P-1700	84.00
145	P-1700	75.00
147	P-1700	76.00
149	P-1700	167.00
151	P-1700	72.00
153	P-1700	80.00
155	P-1700	77.00
157	P-1700	93.00
159	P-1700	72.00
161	P-1700	178.00
163	P-1700	76.00
203	P-1700	205.00
205	P-1700	87.00
207	P-1700	180.00
209	P-1700	84.00
211	P-1700	164.00

Let's create a dashboard based on our worksheet, drag a chart item into the page designer and click on the *pencil* icon which appears when hovering over it.



Drag the columns you want to have in the x-axis and y-axis.



## Add average and lower/upper limits

Right click on the chart open the *Properties* icon, go to the *Advanced* tab and click on *Add*.

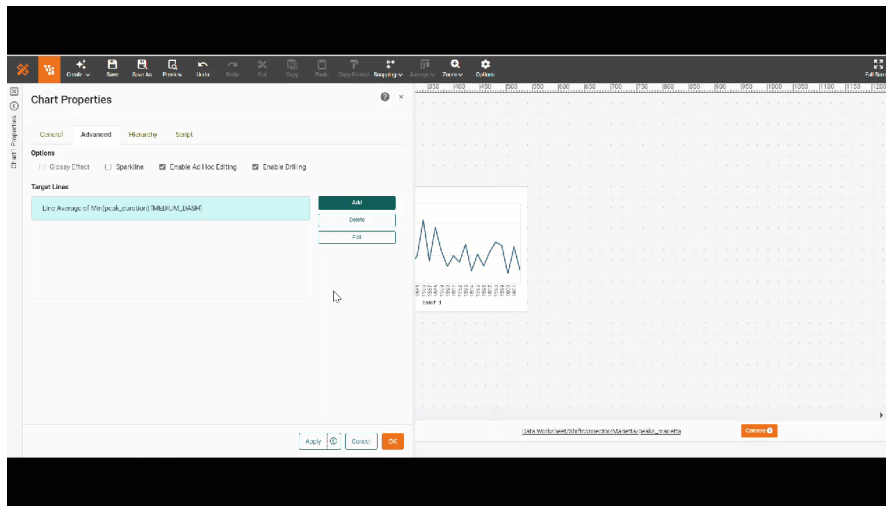


The 'Chart Properties' dialog box is shown with the 'Advanced' tab selected. In the 'Options' section, the 'Glossy Effect' and 'Sparkline' checkboxes are highlighted with red boxes. In the 'Target Lines' section, an empty text box and the 'Add' button are also highlighted with red boxes.

To add the average line, select *peak\_duration* as field (i.e. your measure) and *Average* as value. You will then be able to customize the line style.

The 'Add Target' dialog box is shown with the 'Line' tab selected. The 'Field' dropdown is set to 'Sum(peak\_duration)'. The 'Value' dropdown is set to 'Average'. The 'Line Style' dropdown is set to a dashed line. The 'Fill' section has 'Above' and 'Below' options, and the 'Alpha' is set to 100%.

To add an upper and lower limit corresponding to  $\pm 3$  standard deviations, from the *Properties* window click on add and then go the *Statistics* tab. Select the desired measure and then choose *Standard deviation* from the *Computation* dropdown selection. The default limits are 1 standard deviation away from the average, to change that, click on the *pencil* icon and adjust the value to -3,3.



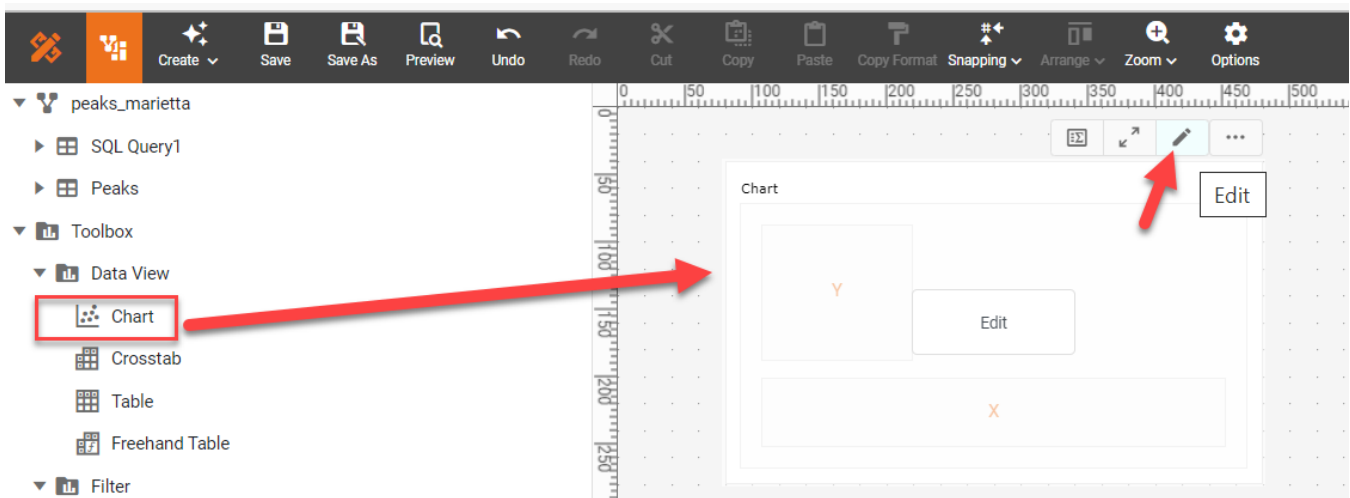
You can read the official documentation for more information ([link](#))

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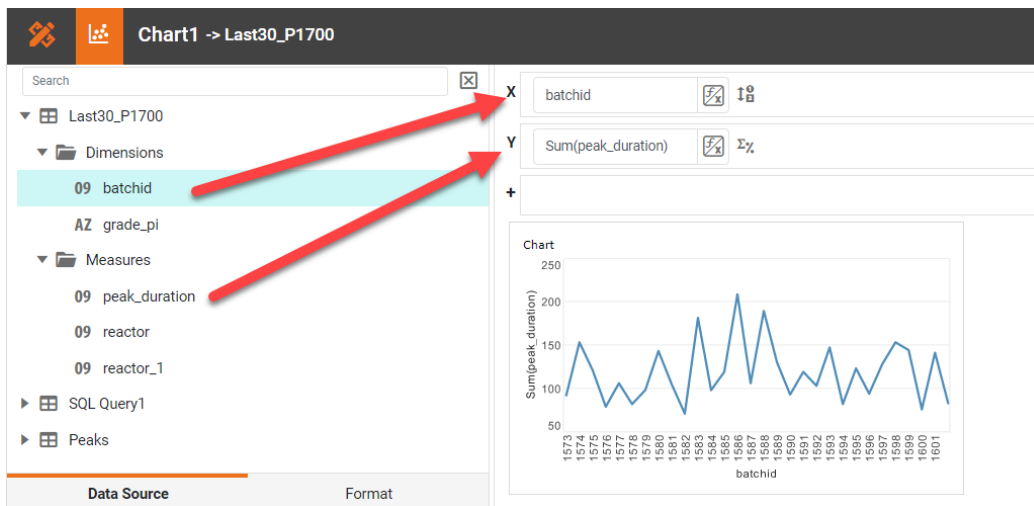
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141	P-1700	124.00
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## Add average and lower/upper limits

Right click on the chart open the *Properties* icon, go to the *Advanced* tab and click on *Add*.



Chart Properties

General    **Advanced**    Hierarchy    Script

Options

Glossy Effect     Sparkline     Enable Ad Hoc Editing     Enable Drilling

Target Lines

Add

To add the average line, select *peak\_duration* as field (i.e. your measure) and *Average* as value. You will then be able to customize the line style.

## Add Target



**Line** **Band** **Statistics**

Field: Sum(peak\_duration)

Value: Average  Entire Chart

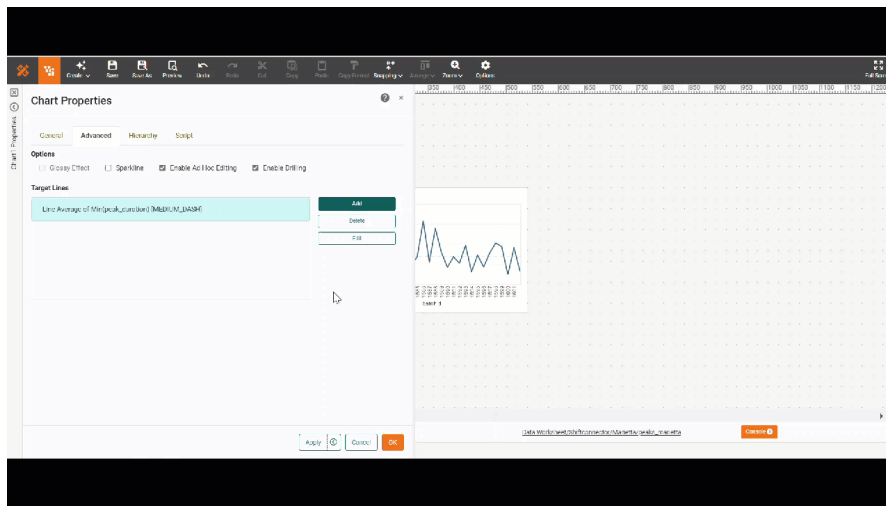
Label: (Target Value)

Line Style: -----

Fill: Above  Below  Alpha: 100 %

**OK** **Cancel**

To add an upper and lower limit corresponding to  $\pm 3$  standard deviations, from the *Properties* window click on add and then go the *Statistics* tab. Select the desired measure and then choose *Standard deviation* from the *Computation* dropdown selection. The default limits are 1 standard deviation away from the average, to change that, click on the *pencil* icon and adjust the value to  $-3,3$ .



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