User Manual for the graphomate slope graphs 2.1

for SAP Lumira Designer 2.2
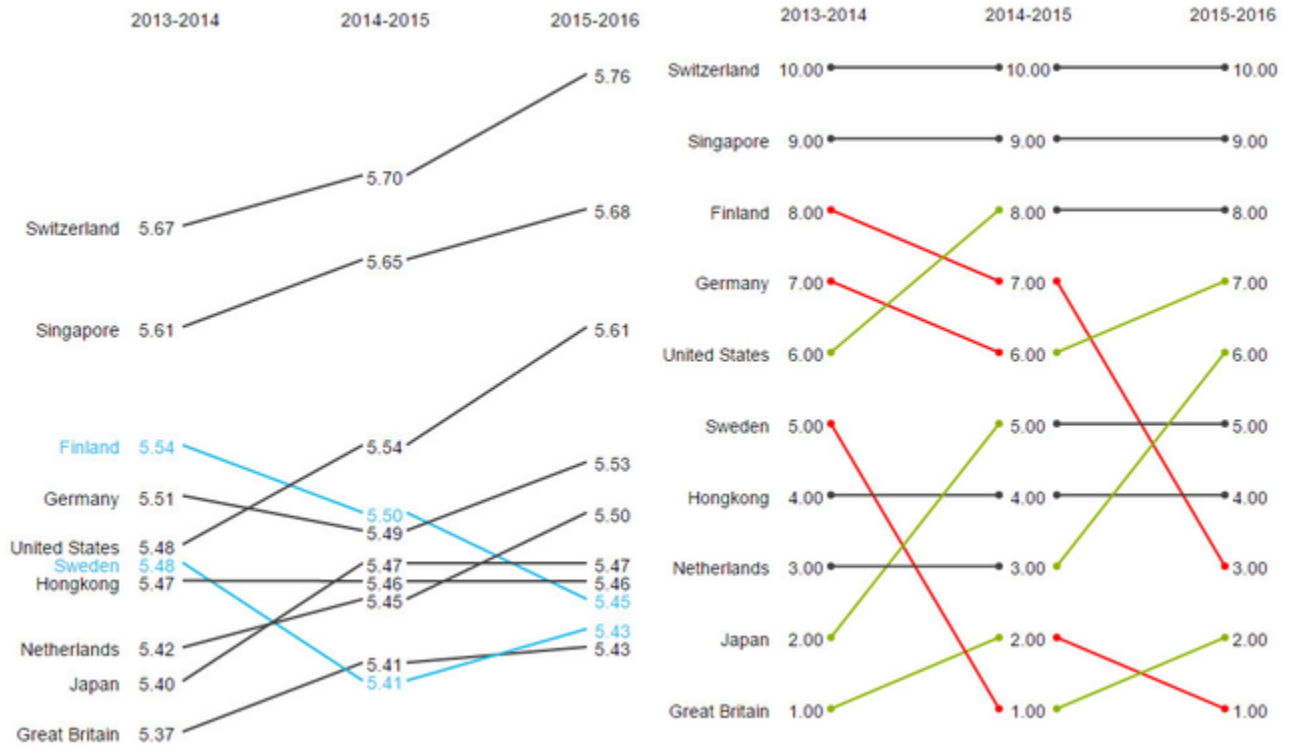
Version 2.1 – as of September 2018

https://www.graphomate.com

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Introduction

Slope graphs were established at the beginning of the eighties by Edward Tufte in his standard work "The Visual Display of Quantitative Information". Just as its alternative designation - *table-chart* - the name gives a good impression of what is at stake with *slope graphs*: The data is shown as in a table, but in such a way that numerical values must not be "read", but visually interpreted.

This is the original *table-Chart* on pages 158-159 of Edward Tufte:
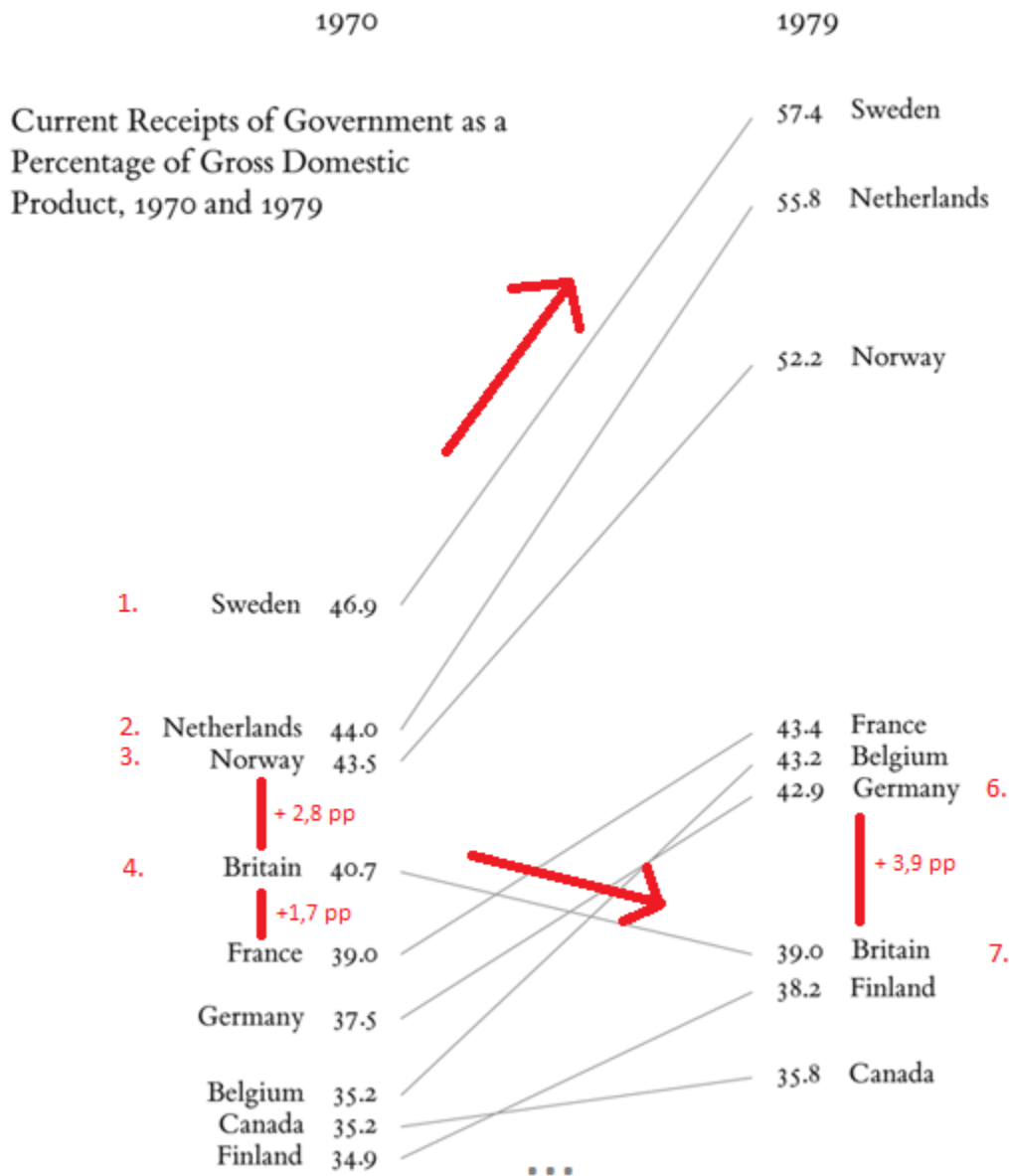
The minimalistic figure of the percentage share of state revenue in gross domestic product- can be interpreted both vertically and horizontally: For the two years, the order of countries is recognizable at a glance. Furthermore, the change in the shares from 1970 to 1979 can be interpreted visually via the gradient - or slope - of the connection line between the annual values.

By means of the *slope graph,* a higher visual density is made possible and more context shown. Information can be transported with little space requirement, without making intelligibility more difficult. Through visualization of values over two years, the development is shown and change of ranges is visually, easily comprehensible.

With *graphomate slopegraphs,* the two columns cannot only be represented but arbitrarily many can be mapped. The so-called Bump Charts - *slope graph*, which directly maps the rank, can be highlighted: 1st, 2nd, 3rd position … - can be created with a mouse click. Through highlighting for runtime, positions can be highlighted; an image export (PNG) enables further use of the *slope graph*s in other media.

> In the sense of a uniform language regulation we speak in the further manual of Lumira Designer or briefly designer. Our products are still compatible with SAP Design Studio 1.6.

For our *graphomate slopegraphs* extension Design Studio 1.6 SP06 or higher or Lumira Designer >= 2.0 and IE 11+ are required. For further information, for example about the deployment on the Business Intelligence Platform (BIP) or SAP Netweaver, please consult the Product Availability Matrix (PAM). Please note that from 2017, we will no longer support Internet Explorer 9 and 10.

Installation

> - Before opening your old dashboards/BI apps with Designer 2.0, you need to migrate them to m mode with Design Studio 1.6.
> - Our extensions for Design Studio 1.6 will also run in Designer 2.0. When starting Lumira 2.0 Designer, please do not import our graphomate extension from SAP Design Studio 1.6. Instead we suggest using the versions specifically built for Designer 2.0.

Local installation of the extension to Designer

You have installed Designer 2.0 SP00+ on your computer.

1. Save the zipfile *graphomate_slopegraphs2.x.x.zip* to a folder of your choice.
2. In Designer, choose *Tools Install Extension to Lumira Designer,* click on *Archive* and select the zipfile which has been saved before.
3. Choose *Finish* to start the installation.
4. Choose *Next* and again *Next* to confirm the installation.
5. Accept the terms of the license agreement and choose *Finish*.
6. Choose *Yes* to allow a restart of Designer.
7. After the restart, the graphomate extension appears in the Component View of Designer.

Removing the extension from Designer

In Designer choose *Help > About*….

1. Click the *Installation Details* button.
2. Select the component *graphomate slopegraphs 2.x.x*
3. Choose *Uninstall*… .
4. In the UninstallWizard choose *Finish*.
5. Choose *Yes* to allow Designer to restart.

Server installation of the extension

Users need to deploy the locally installed extension to the BI platform before launching the *graphomate slopegraphs* from the BI platform.
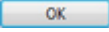
1. Choose in the BI Platform Mode *Tools > Platform Extensions.*
2. Select the extension *graphomate slopegraphs* that is installed on your local computer.
3. Choose *Install on Platform.*
4. Manually restart the BI Platform Adaptive Processing Servers that host the Analysis Application Service and accept the warnings in Designer.
5. The graphomate extension appears under *Extensions Installed on Platform.*
6. Choose *Close.*
7. Again restart the BI Platform Adaptive Processing Servers that host the Analysis Application manually.

Uninstalling the extension from the Server

1. Choose in the BI Platform Mode *Tools > Platform Extensions.*
2. Choose the *graphomate slopegraphs.*
3. Choose *Uninstall from Platform.*
4. Confirm the uninstalling by choosing *Yes.*
5. In order to complete the uninstalling process, manually restart the BI Platform Adaptive Processing Servers that host the Analysis Application Service and accept the warnings in Designer.
6. The *graphomate* slopegraphs is then removed from the *Extensions Installed on Platform.*
7. Choose *Close.*
8. Manually restart the BI Platform Adaptive Processing Servers that host the Analysis Application Service.

Quick Start

You have defined a *Data Source,* and you now want to form data rows in this query, with a *graphomate slopegraph* visualization image.

1. To do this, drag a *graphomate slopegraph* component -on the mark area and- link the *Data Source* Drag&Drop to this component.
2. In the *Data* tab of additional properties, you define the data sets to be imaged from the query by clicking on the appropriate button (…) in the *Initial View* columns or line-by-line. The selected data set is displayed with a blue background and adopted after clicking on [OK] for the *slopegraphs*.
3. Subsequently, further configuration of the *slopegraph* is possible via the Properties.

Properties

Basically, you have two ways in which to change the properties of *graphomate slopegraphs*:
Using the *Standard Properties Sheet,* that shows all the parameters in a structured list or via the *Additional Properties Sheet.* The latter offers a more user-friendly Interface. In contrast to other graphomate extensions, *slopeg raphs* only have one tab on which all properties are found.

The check boxes in front of properties in the *Additional Properties Sheet* are used to control the visibility of elements and activation of functions. The data source to be used can only be assigned via Drag&Drop to the component or to the *Standard Properties Sheet* under *Data Binding.*

> By pressing the F5 key, both the range of characters as well as the *Additional Properties Sheet* can be reinitialized. This is sometimes necessary when changes in the Properties are not adopted directly in the character range.

DATA SELECTION

You link data with the *slopegraphs*, by assigning a Data Source to a component. Once a Data Source has been assigned, all data of the Data Source will be depicted. The slopes will be generated from the line characteristics.

As for the selection of *Slopes Data,* this selection can be made finer (by selecting only certain line characteristics) or changed to the column characteristics (by selecting the column characteristics). If both columns as well as lines characteristics are selected, the slopes will be generated based on the lines characteristics. Totals will be removed automatically from the selected data.

FONT SIZE

You select the font size here.

FONT FAMILY

Here, you select the font color to be used.

TEXT COLOR

You select the font color here.

TEXT COLOR ON HOVOR

You select the font color used when you hover or click over the slopes/texts at run time.

Category Labels

This option is used to specify whether the *Category Labels* are displayed via the Slopes or not. As *Category Labels,* the characteristics that were not selected are considered (for example, when lines characteristics were selected, columns characteristics are involved).

ONLY LEADING DESCRIPTION

With this option, you specify that only the leading labeling of the slope be displayed. By deactivating Option, the labels will be displayed on both the left and the right. This is redundant in the case of slopes with a few data points, but caters for better readability for many data points.

VALUE FORMAT

Set the format of the values according to the Specifications of numeral.js.

Value Format

Numeral Format	0.00a

SLOPE THICKNESS

Set the thickness of the slopes here.

Slope Color

Specifies the color to be used for the slopes.

SLOPE COLOR ON HOVER

You select the slope color used when you hover or click over the slopes/texts at runtime.

Slopes

Thickness	2	px
Color		
Color on Hover		

TREND IN SLOPES

By selecting this option, the positive and negative slope color (see below) is applied for ascending or descending slopes.

Trend

- ☐ Trend in Slopes
- ☐ Negative is Good
- Positive Trend Color
- Negative Trend Color

NEGATIVE IS GOOD

Swaps the *Positive* and *Negative slope Color.*

POSITIVE SLOPE COLOR

This color is used, if *Show Trends in slopes* is selected and an ascending slope is involved.

NEGATIVE SLOPE COLOR

This color is used, if *Show Trends in slopes* is selected and a descending slope is involved.

USE RANKS

By selecting this option, the scaling of the slopes is no longer done based on the values of the slopes, but based on the ranking of the values. Then, strictly speaking, a slope graph is no longer involved, but a so-called *Bump Chart*.

To preserve the two chart types from confusion and prevent false interpretation, a point (*Rank Dot*) is placed as an additional visual element at the end of each slope for Bump Charts.

ASCENDING ORDER

This option allows you to invert the values axis, so that no longer the greatest but the smallest values are shown first. The option also applies if *Use Ranks* has been selected so that one proceeds according to the ranking.

Rank Dot Radius

Sets the radius of the Rank Dot.

At this point, you will find information on the used version of the *graphomate slopegraphs* as well as a link with which you can inform us about errors and feature desires. Under credits, you will find an overview of the free libraries that we use.

Runtime Interactivity

The *graphomate slopegraphs* supports some functions that can be used interactively at runtime. Many (but not all) of these functions are configurable on the *Additional Property Sheet.*

Hover und Click

By hovering over a text at run time, the entire slope (i.e. all partial pieces and texts) will be highlighted in color. The color for text and slope highlighting can be selected separately via the Properties. If highlighting should be retained, this can be done by a click. By clicking a new, the mark can be removed again. By clicking, several Slopes can be highlighted at the same time.

PNG Export

When hovering over the component in the right upper corner at run time, an export icon will be displayed. By clicking on the icon, a new window that contains a PNG of the slopes opens, which is suitable for use in presentations or for printing. Slopes that were previously highlighted with a click are also highlighted in the exported image.

Known Issues

- The space displayed for the design and runtime between labeling and value is lost during the PNG export. Instead, a single space is displayed.
- In rare cases, it is possible that texts protrude from the bottom of the Container of Visualization. This is the case, if the values are very different in size, for example, because the sums in the *Initial View* were switched on. In this case, we recommend that the sums to disabled.
- When using the ranking feature a selection yielding in just one slope can result in a faulty representation of the data. When using the ranking feature we recommend using a selection yielding at least two slopes.

Number Formatting

Possible Inputs for the numeral.js Format String

Floating point		
Number	**Format String**	**Output**
10000	'0,0.0000'	10.000,0000
10000.23	'0,0'	10
-10000	'0,0.0'	-10.000,0
-0.23	'.00'	-,23
-0.23	'(.00)'	(,23)
0.23	'0.00000'	0,23000
0.23	'0.0[0000]'	0,23
1230974	'0.0a'	1,2m
1460	'0 a'	1 k
1	'0o'	1st

Currency		
Number	**Format String**	**Output**
1.000.234	'$0,0.00'	$1.000,23
1000.2	'0,0[.]00 $'	1.000,20 $
1001	'$ 0,0[.]00'	$ 1.001

Percentage		
Number	**Format String**	**Output**
1	'0%'	100%
-0.43	'0 %'	-43%

Source