

Exercise

Juxtapose, RAW, TimelineJS, StorylineJS, Onodo

Summary

1. Module: Data Visualization¹
2. Lesson: Additional Tools for Visualisation
3. Sub-topic: Juxtapose, RAW, TimelineJS, StorylineJS, Onodo
4. Objective: Introduction to a few simple tools for data visualisation
5. Time Allotment: 120 minutes

Steps

Juxtapose

Juxtapose is a tool for comparing two photos side by side

¹ This lesson was adapted from the World Bank's Introduction to Data Literacy training manual by Eva Constantaras, and adapted by Yan Naung Oak, Open Development Cambodia and Open Development Initiative, and is licensed under a [Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International License](#). For full terms of use, see [here](#).



It's very simple to use. You just have to upload the photos that you want to use online, and paste in the URLs in the boxes in the form below.

The screenshot shows the 'Create a Juxtapose' form. At the top, there are navigation links: 'Juxtapose JS', 'Overview', 'Examples', 'Make a Juxtapose', and 'Help'. The main heading is 'Create a Juxtapose'. Below it is a short paragraph: 'It is free, easy to use, and works on all devices. All you need to get started are links to the images you'd like to compare.' The form is divided into two main sections: 'Left Image' and 'Right Image'. Each section has a 'URL' field with a placeholder and a 'Label' field. Below these are 'Credit' fields. At the bottom, there is an 'Options' section with a 'Slider start position' field set to '50 %' and several checkboxes: 'Show Labels', 'Show Credits', 'Animate', 'Make Responsive', and 'Vertical'. 'Preview' and 'Publish' buttons are also present.

A preview will be generated below

Preview Embed



Note: One or both of your photos is larger than your browser window. The preview below has been resized to fit your screen, but your embedded Juxtapose will retain your original image dimensions.

To publish your juxtapose photo slider, click on the Publish button and copy the Share Link or Embed link to your website.

Preview

Publish

Share Link

To embed in a Medium blog post, copy the code in the box below and paste it on a line by itself where you want your juxtapose to appear. (Learn more about oEmbed.) If you update the settings, don't forget to click "Publish" again.

```
https://cdn.knightlab.com/libs/juxtapose/latest/embed/index.html?uid=331be10c-366a-11ea-b9b8-0edaf8f81e27
```

Embed

Copy the code in the box below and paste it into your web page or CMS. If you update the settings, don't forget to click "Publish" again.

```
<iframe frameborder="0" class="juxtapose" width="100%" height="360" src="https://cdn.knightlab.com/libs/juxtapose/latest/embed/index.html?uid=331be10c-366a-11ea-b9b8-0edaf8f81e27"></iframe>
```

RAWGraphs

RAWGraphs is a simple tool to create data visualisation templates that can be exported and further edited using a design tool such as Adobe Illustrator.

We need **you** to keep RAWGraphs **open** and **free**, support the new version.

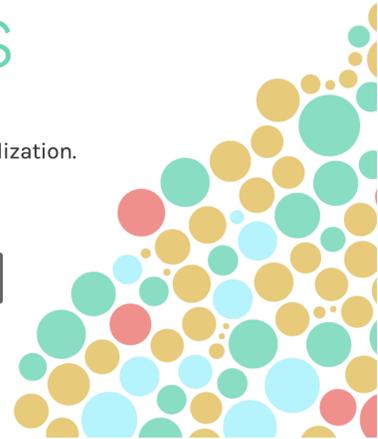
DONATE!

RAWGraphs

The missing link between spreadsheets and data visualization.

USE IT NOW!

FORK IT ON GITHUB!



We will use our [Hydropower dataset](#) to demonstrate this tool. First, copy and paste the data into the first box that you see when you click on the “USE IT NOW!” button.

Load your data ☰ ☰

- Paste
- Upload a file
- From URL
- Try our samples

```

1 latitude longitude altitude geometry id ogc_fid map_id name purpose investor country capacity energy year
  province district commune size_scale status detail_status eia_date eia_status reference additional_references
last_update language
2 13.22496233 104.3677898 Point Hydropower_dams.fid-3c6ab8ad_16a04e6c4ab_-322f 108 35 Stung Chikreng Hydropower dam Not found
  Not found 1 5 Siem Reap Chi Kreng Pongro Leu Small scale Under study "[Not found] Desk study;
3 [2003] Identified as potential hydropower project by MIME" Not found Not found
  Hydropower_Development_in_Cambodia_01.12.2011.pdf;Progress_of_Cambodia_Power_Development__26.11.2009.pdf;Training_and_Workshop_on_Smal
l_Hydro_Power__06.07.2011.pdf 22 Jun 2015 English
4 14.02163799 106.8506775 Point Hydropower_dams.fid-3c6ab8ad_16a04e6c4ab_-322e 76 3 Lower Sesan III Hydropower dam KTC (Korea)
  Korea 375 1977 2017 Ratanak Kiri Veun Sai Veun Sai Large scale Under study [2009] MOU was signed Not found Not
found
  EDC_Anuual_Report_2014__00.00.2014.pdf;Hydropower_Development_in_Cambodia_01.12.2011.pdf;Progress_of_Cambodia_Power_Development__26.11.
2009.pdf;Training_and_Workshop_on_Small_Hydro_Power__06.07.2011.pdf 01 Jun 2015 English
5 11.99625418 103.4421819 Point Hydropower_dams.fid-3c6ab8ad_16a04e6c4ab_-322d 91 18 Upper Stung Russei Chrum Hydropower dam
  KTC (Korea) Korea 32 211 2017 Koh Kong Thma Bang Tatey Leu Medium scale Potential site [2003] Identified as

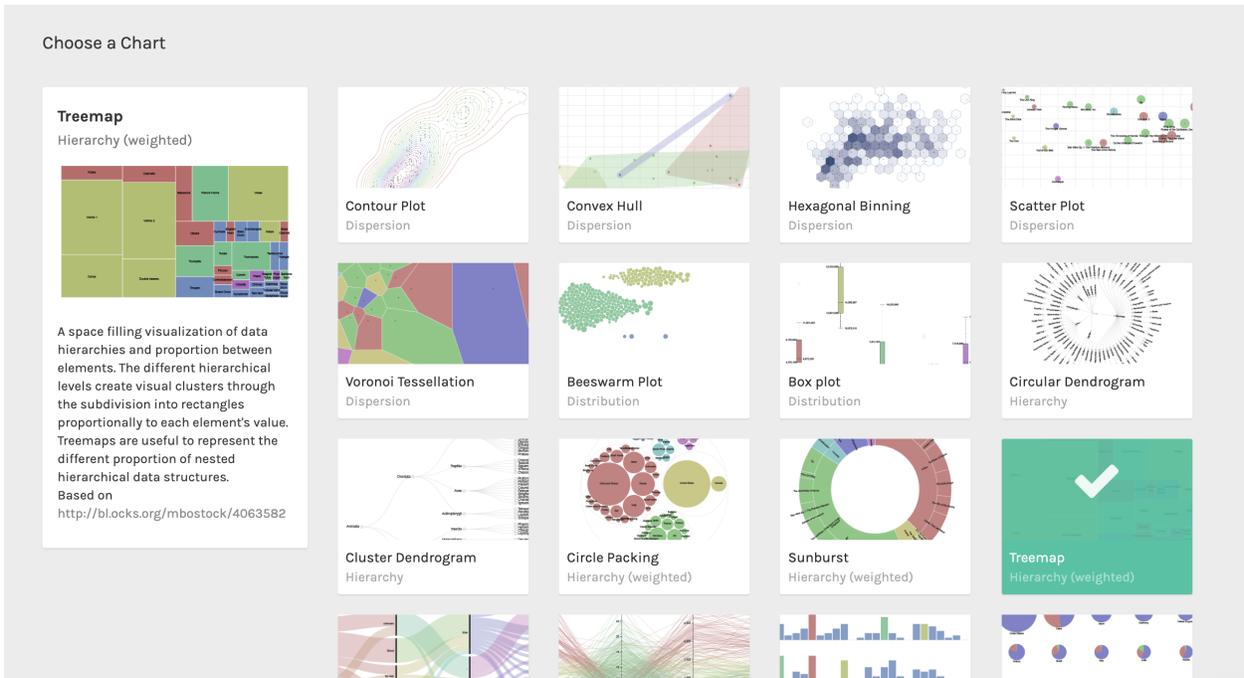
```

👍 73 records in your data have been successfully parsed!

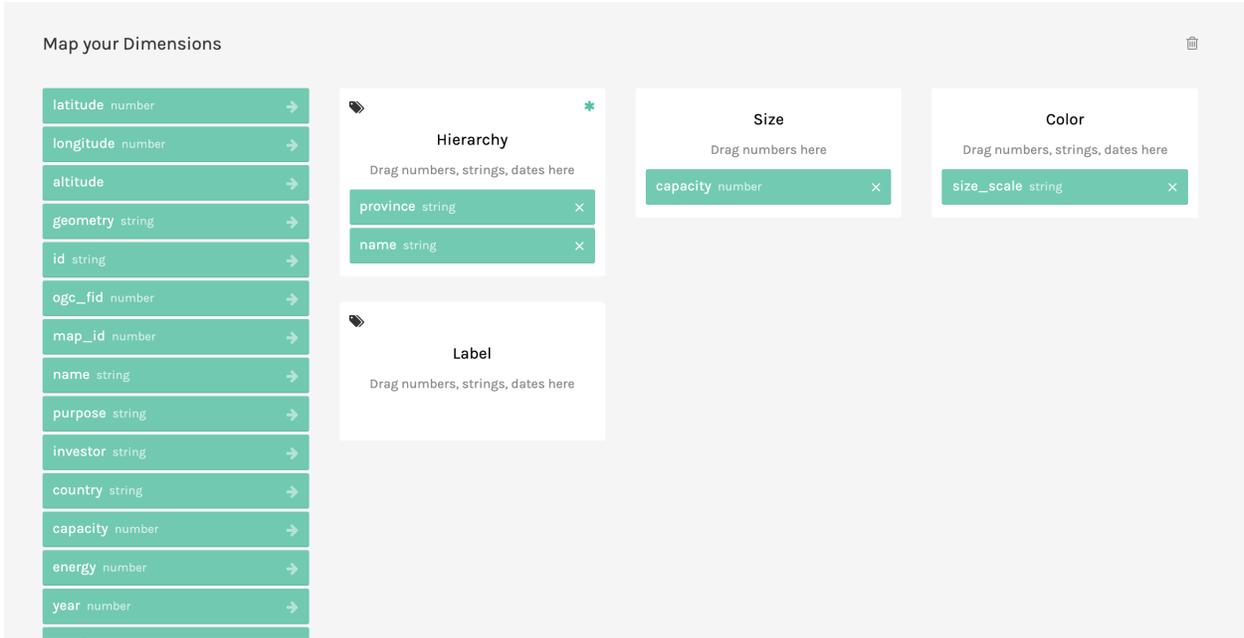
Your data seems ready to go. But if you want to stack it anyway, click here

Next, you can choose a chart type. RAWGraphs offers many complex chart types that are not available in other tools such as Flourish and Datawrapper.

For our first let's try a Treemap.



Now we have to choose which columns are mapped to which properties of the chart. Drag the column names into the boxes as shown below:



RAWGraphs will now generate a Treemap visualisation of the data.

Customize your Visualization

Width: 847

Height: 500

Padding: 1

Color Scale: Ordinal (categories)

Search...

Large scale	#ae69bf
Medium scale	#bf6969
Not found	#aebf69
Small scale	#698bbf

You can then download your visualisation as an SVG file which can be edited in a design tool such as Illustrator, or you can export the image as a PNG file.

Download

Embed SVG Code

Vector graphics (svg)

hydropower_treemap

Download

```
<svg width="847" height="500" xmlns="http://www.w3.org/2000/svg"><g transform="translate(.5,.5)"><g class="cell" transform="translate(2,2)"><rect width="29.88164181537727" height="427.5394044790689" style="fill: rgb(191, 105, 105); stroke: rgb(255, 255, 255);"/></rect><title>undefined: NaN</title><text x="10.440820907698636" y="213.76970223503446" dy="-.35em" text-anchor="middle" style="font-size: 11px; font-family: Arial, Helvetica;">Kamchay</text></g><g class="cell" transform="translate(2,2)"><rect width="29.88164181537727" height="427.5394044790689" style="fill: rgb(191, 105, 105); stroke: rgb(255, 255, 255);"/></rect><title>undefined: NaN</title><text x="10.440820907698636" y="213.76970223503446" dy="-.35em" text-anchor="middle" style="font-size: 11px; font-family: Arial, Helvetica;">Kamchay</text></g></g></svg>
```

Copy the snippet above into your HTML code to embed the visualization

For our next chart, let's scroll back up and choose the Circle Packing chart type.



Choose a Chart

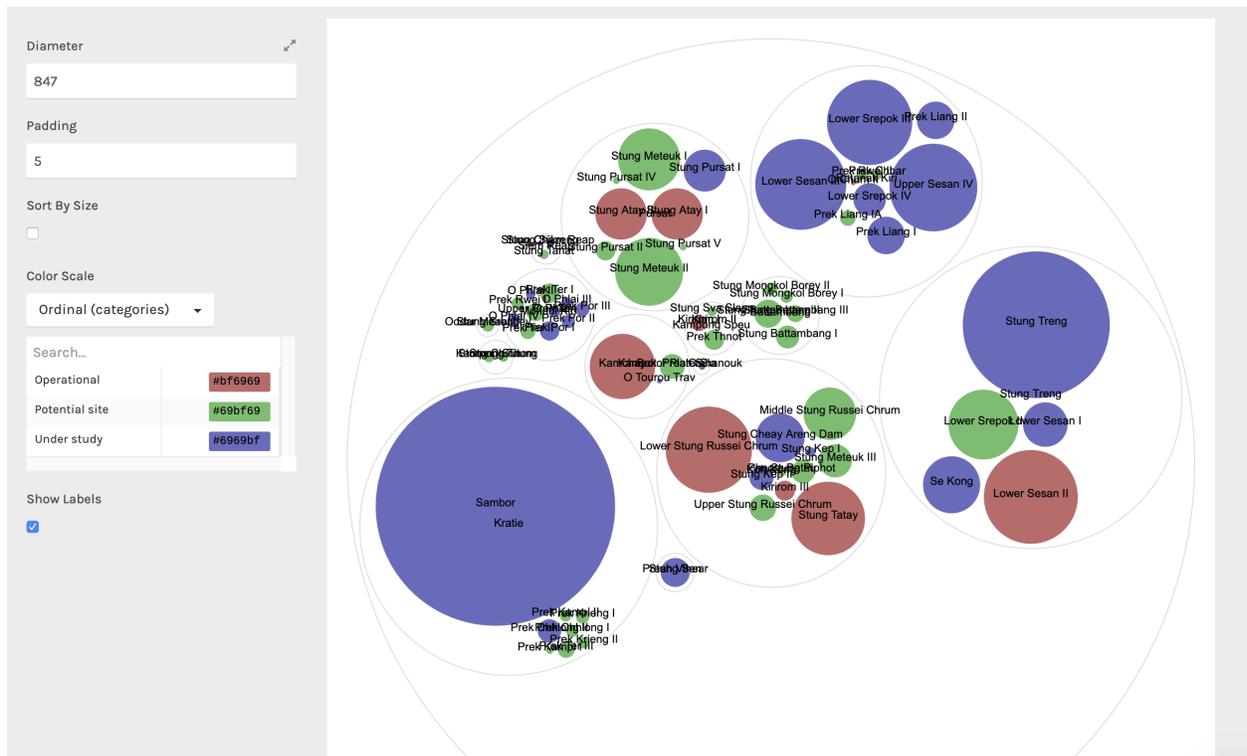
Circle Packing Hierarchy (weighted) Nested circles allow to represent hierarchies and compare values. This visualization is particularly effective to show the proportion between elements through their areas and their position inside a hierarchical structure. Based on http://bl.ocks.org/mbostock/4063530	Contour Plot Dispersion 	Convex Hull Dispersion 	Hexagonal Binning Dispersion 	Scatter Plot Dispersion
Voronoi Tessellation Dispersion 	Beeswarm Plot Distribution 	Box plot Distribution 	Circular Dendrogram Hierarchy 	
Cluster Dendrogram Hierarchy 	Circle Packing Hierarchy (weighted) 	Sunburst Hierarchy (weighted) 	Treemap Hierarchy (weighted) 	

Map the columns as shown below:

Map your Dimensions

latitude number →	Hierarchy Drag numbers, strings, dates here province string × name string ×	Size Drag numbers here capacity number ×	Color Drag numbers, strings, dates here status string ×
longitude number →			
altitude →	Label Drag numbers, strings, dates here		
geometry string →			
id string →			
ogc_fid number →			
map_id number →			
name string →			
purpose string →			
investor string →			
country string →			
capacity number →			
energy number →			

You will then see your data visualised in a Circle Packing chart.



TimelineJS

TimelineJS is a tool to make an interactive timeline that can be embedded in a webpage. It reads data directly from a Google sheet.

Projects
Class
Device Lab
Posts

Timeline JS

Easy-to-make, beautiful timelines.

Make a Timeline

Overview
Examples
Make a Timeline
Help

The tool itself provides very good step-by-step instructions on how to use it. So it is very intuitive to use. The first step is to use the Spreadsheet Template that they provide. Click on the “Get the Spreadsheet Template” button.

Make a Timeline

TimelineJS works on any site or blog. Make your own in four easy steps.

Having trouble? Watch our [video](#), or see the [help section](#) below.

1
Create your
spreadsheet

Build a new Google Spreadsheet using our template. You'll need to copy the template to your own Google Drive account by clicking the "Make a Copy" button.

Drop dates, text and links to media into the appropriate columns. For more about working with our template, see our [help docs](#).

Get the Spreadsheet Template 

Note: Don't change the column headers, don't remove any columns, and don't leave any blank rows in your spreadsheet.

When Google Drive prompts you to Copy the Document, click on “Make a copy”.

Google Drive

Copy document

Would you like to make a copy of **Official TimelineJS3 Template?**

Make a copy



You will then see the template spreadsheet with example data filled in.

Copy of Official TimelineJS3 Template

File Edit View Insert Format Data Tools Add-ons Help Last edit was 4 minutes ago

100% \$ % .0 .00 123 Arial 11 B I S A

Year	Year	Month	Day	Time	End Year	End Month	End Day	End Time	Display Date	Headline	Text	Media	Media Credit
											This is a test of using google spreadsheets as a source for the timeline tool. This is a 'title' slide, so it doesn't need a date. It automatically occurs first, and doesn't appear in the timeline below.	http://www.flickr.com	Zach Wise/verite.co
2011	11	1			2011	12	15			Another Flickr Example	It's Easy to Make Your Own Timeline Illustrate your Timeline with photos, videos, tweets and more.	http://www.flickr.com	Zach Wise/verite.co
2011	11	16	05:58:44		2011	11	16	07:30:00		Vimeo Example		https://vimeo.com/14	Knigh Lab

Add 1000 more rows at bottom.

As an exercise, let's fill in the dates for our workshop to visualise it as an interactive timeline.

Year	Month	Day	Time	End Year	End Month	End Day	End Time	Display Date	Headline	Text
									ODC Data Literacy Training Program	
2019	10	21		2019	10	25			Phase 1	From Evidence to Stories and Finding Data & Data Formats
2019	12	2		2019	2	6			Phase 2	Understanding Data and Data visualization
2020	1	13		2020	1	17			Phase 3	Thinking Like a Data Journalist
2020	4	7							Final Workshop	

Next, we have to publish our spreadsheet. Click on File -> Publish to the web.

Copy of Official TimelineJS3 Template

File Edit View Insert Format Data Tools Add-ons

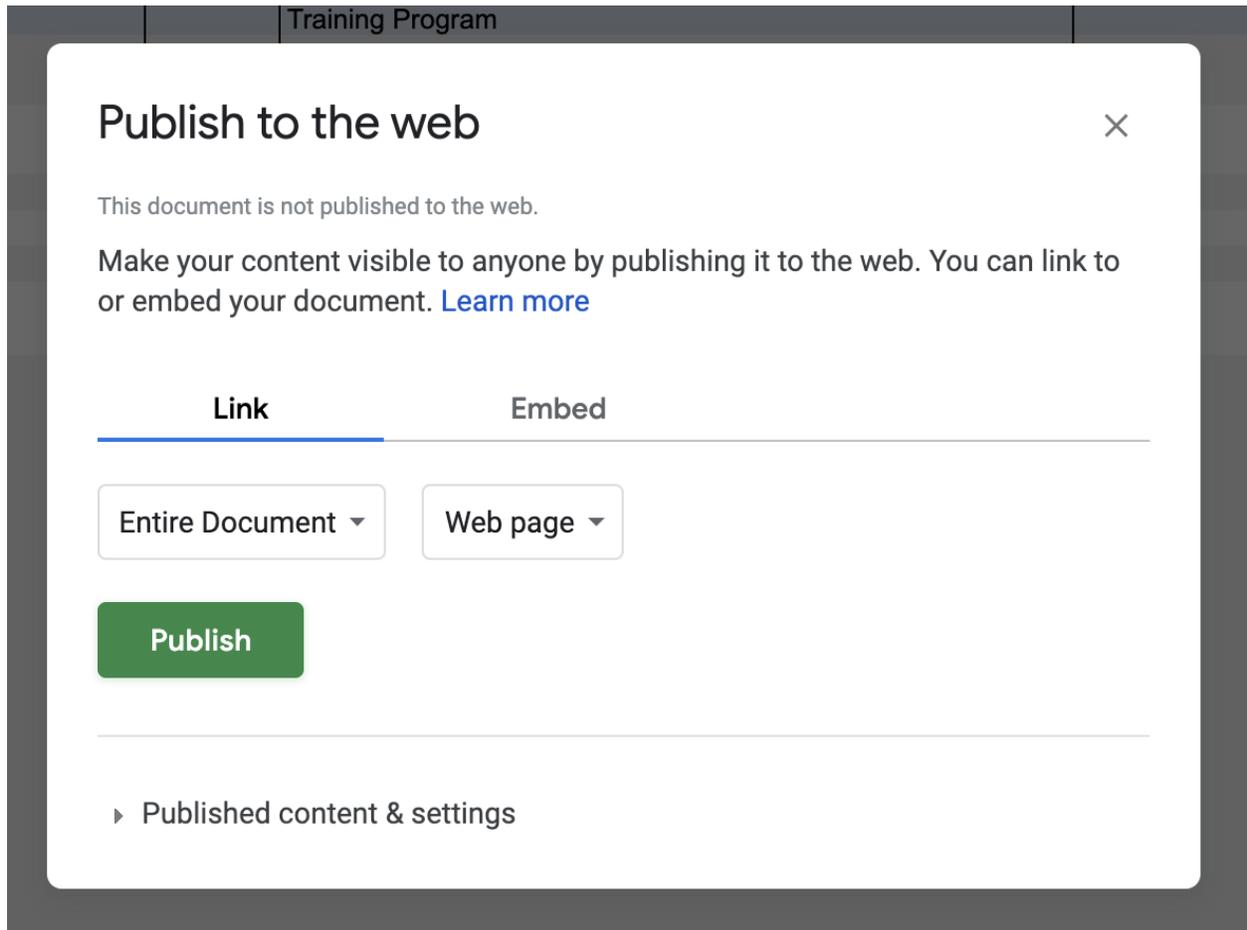
- Share
- New
- Open ⌘O
- Import
- Make a copy
- Download
- Email as attachment
- Make available offline
- Version history
- Rename
- Move
- Move to trash
- Publish to the web
- Email collaborators
- Document details
- Spreadsheet settings
- Print ⌘P

.0 .00 123 Arial

	E	F	G
	End Year	End Month	End Day
2019	2019	10	25
2020	2019	2	6
2020	2020	1	17

at bottom.

Click on Publish when the pop-up appears.



Even though there is a URL provided in the pop-up, don't copy that URL.

Publish to the web ×

This document is published to the web.

Make your content visible to anyone by publishing it to the web. You can link to or embed your document. [Learn more](#)

Link **Embed**

Entire Document ▾

Well

Press ⌘+C to copy.

3-qyhNI9Qa1-l-iUSZLGve0C8wcpfOtmq2WySiMPhAXTAceQoEOzWF/pubhtml

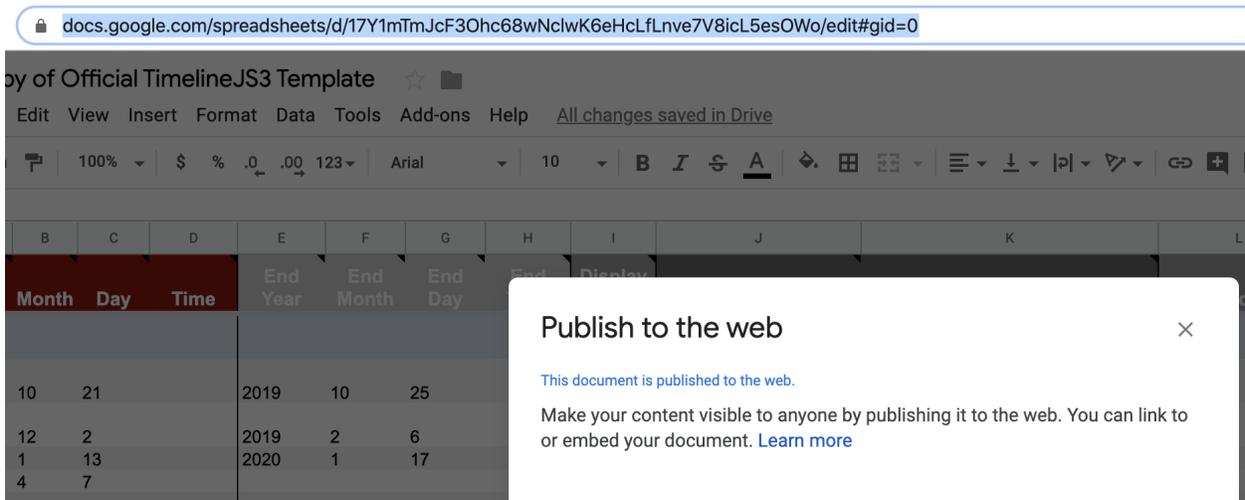
Or share this link using:   

Note: Viewers may be able to access the underlying data for published charts. [Learn more](#)

Published

▶ Published content & settings

Instead, copy the URL from the address bar of your browser.



After that, past the URL on Step 3 of the TimelineJS tool

Attention: The following has changed as of 18 July 2017!

Close the 'Publish to the web' window. Copy the URL for your Timeline from the browser's address bar. It should look something like this:

https://docs.google.com/spreadsheets/d/1xuY4upIooEeszZ_1CmeNx24eSFWe0rHe9ZdqH2xqVnk/edit#gid=0

Disregard the URL that appears in the "publish to the web" window. It used to be used below, but changes to Google mean that you'll get an error if you use it now.

3

Generate your timeline

Copy/paste spreadsheet URL into the box below to generate your timeline. (Make sure you've published the spreadsheet.)

Google Spreadsheet URL

Width

Height

Optional settings (show)

Set language, fonts, starting slide and more.

The next step allows you to preview your timeline, and also provide the Share Link and the Embed code.

4

Share your timeline

Share Link

Use this to link directly to your timeline.

If you're embedding on Medium.com or other oembed-aware services, just paste this link on a line by itself where you want your timeline to appear.

```
https://cdn.knightlab.com/libs/timeline3/latest/embed/index.html?source=17Y1mTmJcF3Ohc68wNclwK6eHcLfLnve7V8icL5esOWo&font=Default&lang=en&initial_zoom=2&height=650
```

Embed

Copy this embed code and paste it on your site where you want your timeline to appear (just like a YouTube video).

```
<iframe src='https://cdn.knightlab.com/libs/timeline3/latest/embed/index.html?source=17Y1mTmJcF3Ohc68wNclwK6eHcLfLnve7V8icL5esOWo&font=Default&lang=en&initial_zoom=2&height=650' width='100%' height='650' webkitallowfullscreen mozallowfullscreen allowfullscreen>
```

Preview Open Preview in a new window

Preview Embed



StorylineJS

StorylineJS is a tool that lets you make a line chart with interactive annotations. Just like TimelineJS, it also

We will use the Daily Exchange Rate dataset downloaded from the [Exchange-Rates.org](https://www.exchange-rates.org/).

EXCHANGE-RATES.ORG
WORLD CURRENCY EXCHANGE RATES AND CURRENCY EXCHANGE RATE HISTORY

EXCHANGE RATES / US DOLLAR / HISTORICAL EXCHANGE RATE TABLE

Make it with Creative Cloud. Apps for photography, design, video and web from \$356. Join now

Thai Baht (THB) per US Dollar (USD)

The table below shows historical exchange rates between the Thai Baht (THB) and the US Dollar (USD) between 12/15/2019 and 6/11/2020

View Options +

6/11/2020	Thursday	31.01571 THB	USD THB rate for 6/11/2020
6/10/2020	Wednesday	31.11490 THB	USD THB rate for 6/10/2020
6/9/2020	Tuesday	31.31483 THB	USD THB rate for 6/9/2020
6/8/2020	Monday	31.41124 THB	USD THB rate for 6/8/2020
6/7/2020	Sunday	31.48075 THB	USD THB rate for 6/7/2020
6/5/2020	Friday	31.50537 THB	USD THB rate for 6/5/2020
6/4/2020	Thursday	31.55146 THB	USD THB rate for 6/4/2020
6/3/2020	Wednesday	31.54822 THB	USD THB rate for 6/3/2020
6/2/2020	Tuesday	31.54521 THB	USD THB rate for 6/2/2020
6/1/2020	Monday	31.65700 THB	USD THB rate for 6/1/2020

Search...

Currency Converter

Amount: 1

From: US Dollar (USD)

To: Thai Baht (THB)

Convert

Click for more currencies >

We have already cleaned the data and [provided a Google Sheet](#) with the data that you can make a copy for yourself.

1. Get the highest exchange value in the given dataset by a formula =MAX(B2:B156) in Rate column.

	A	B	C	D	E	F	G
1	Date	Rate	ISO Code From	ISO Code To	Title	Text	
89	25/03/2020	32.69294	USD	THB			
90	26/03/2020	32.57804	USD	THB			
91	27/03/2020	32.50507	USD	THB			
92	29/03/2020	32.21535	USD	THB			
93	30/03/2020	32.63603	USD	THB			
94	31/03/2020	32.75137	USD	THB			
95	01/04/2020	33.06416	USD	THB	Highest Point	This is the highest in 2020	
96	02/04/2020	32.89207	USD	THB			
97	03/04/2020	32.96742	USD	THB			
98	05/04/2020	32.97014	USD	THB			
99	06/04/2020	32.80345	USD	THB			
100	07/04/2020	32.70823	USD	THB			
101	08/04/2020	32.73173	USD	THB			
102	09/04/2020	32.68696	USD	THB			
103	10/04/2020	32.65598	USD	THB			
104	12/04/2020	32.64195	USD	THB			
105	13/04/2020	32.68866	USD	THB			
106	14/04/2020	32.66391	USD	THB			
107	15/04/2020	32.69989	USD	THB			
108	16/04/2020	32.66547	USD	THB			
109	17/04/2020	32.51000	USD	THB			

Publish your Google Sheet just like we did in the TimelineJS exercise. Now, paste the URL in the SroylineJS tool, and choose the options as shown below.

Configure your Storyline

Copy/paste spreadsheet URL into the box below. (Make sure you've published the spreadsheet.)

Google Spreadsheet URL

Just want to give it a try? [Click to use our demo file.](#)

Tell us more about how your spreadsheet is formatted.

Time

Which column has date/time information?*

How are your dates formatted?*

Data

Which column has your data?*

How should your data be labeled? (y-axis)*

Story Cards

Which column has the card titles?*

Which column has the card text?*

How should the date look in your story?

After that, click on “Create Storyline”, and you can see a preview of your Storyline, with the Embed code and Share Link.

Share your Storyline



Embed

```
<iframe  
src="https://cdn.knight  
lab.com/libs/storyline/  
latest/embed/index.html  
?"
```

Grab the embed code and paste it on your site where you want your storyline to appear (just like a YouTube video).

Link

```
https://cdn.knightlab.c  
om/libs/storyline/late  
st/embed/index.html?
```

Use this to share a direct link to your storyline.

Something not quite right? Just edit the form above and click "Create Storyline" again.

Onodo

Onodo is a tool that is specially designed to create network visualisations. First you have to sign up for an account.

Some examples of network visualisations:

- New York Times' [Clubs that Connect the World](#)
- [The Trump Network](#) - mapping the power relations around Donald Trump
- [Royal Constellations](#) - mapping the connections between European Royal families

After that click on "Create New Visualization".



CREATE NEW VISUALIZATION

CREATE NEW STORY (SOON)

EDIT YOUR SETTINGS

You haven't create any visualization yet

START CREATING ONE

Give your visualisation a title.

Create Visualization

VISUALIZATION TITLE



BEGIN WITH AN EMPTY TABLE

CREATE

Network visualisations consist of nodes, and links between the nodes.

For our exercise, we will create some fake data of connections between companies and their directors.

First, on the nodes tab, create a few entries for Directors as shown below. New nodes will appear as you create them.



SCROLL TO EDIT

NODES		LINKS		ADD NODE	
		NODE	TYPE	DESCRIPTION	VISIBLE
		Director C		+	
		Director B		+	
		Director A		+	

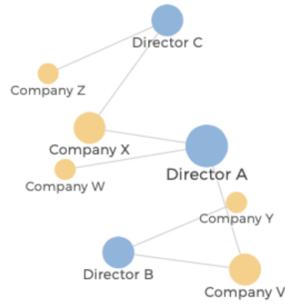
Now, we create a few more nodes for Companies, and in the type column, fill in either Director or Company accordingly, so that the nodes will be in distinct colors.



SCROLL TO EDIT

NODES		LINKS		ADD NODE	
		NODE	TYPE	DESCRIPTION	VI
		Company Z	Company	▼ (+)	◀
		Company Y	Company	▼ (+)	◀
		Company X	Company	▼ (+)	◀
		Company W	Company	▼ (+)	◀
		Company V	Company	▼ (+)	◀
		Director C	Director	▼ (+)	◀
		Director B	Director	▼ (+)	◀
		Director A	Director	▼ (+)	◀

After you have created all your nodes, now it's time to create links between your nodes. On the Links tab, create a few entries like shown below. As you create each link, the visualisation will update.



SCROLL TO EDIT

		LINKS			ADD LINK
NODES		SOURCE	LINK	TARGET	DATE
		Director C	▼	Company X	
		Director C	▼	Company Z	
		Director B	▼	Company Y	
		Director B	▼	Company V	
		Director A	▼	Company X	
		Director A	▼	Company W	
		Director A	▼	Company V	

On the right hand side of the tool, you will see some links that allow you to share your visualisation.



You can click Publish Now to publish the visualization when the pop-up appears.

The visualization has to be public
to embed or share it

PUBLISH NOW

Next you will be brought to the Embed Code and Share Link for the visualisation.

Share



Embed this visualization

```
<iframe src="https://onodo.org/visualizations/101419/embed/"  
width="100%" height="450px" scrolling="no" marginheight="0"  
frameborder="0" allowfullscreen></iframe>
```

VISUALIZATION HEIGHT

450

SHOW VISUALIZATION TITLE

PERMALINK

<https://onodo.org/visualizations/101419/>



Further Practice

RAW

- Try out another chart type

Timeline JS

- Try filling out the other columns in the template google sheet to see how it changes the timeline

Onodo

- Try to upload a data file instead of building each node and link at a time