

Exploring

Timeline

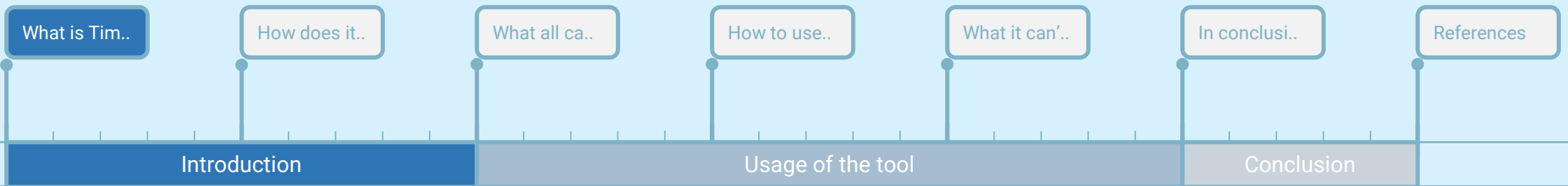


Presented by

Shobhit Kenath [206330004]

Interactive Data Visualization | Assignment #3

What is Timeline.js?

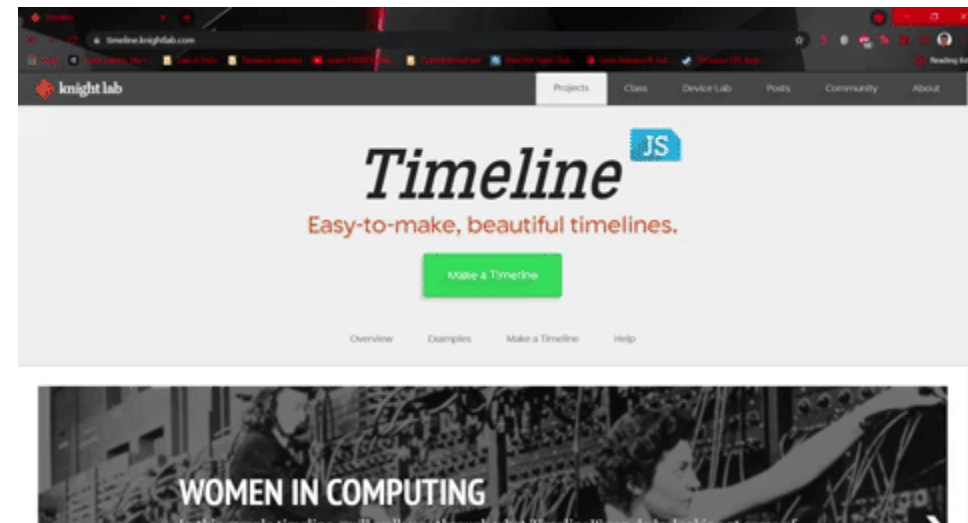


Interactive storytelling through timelines

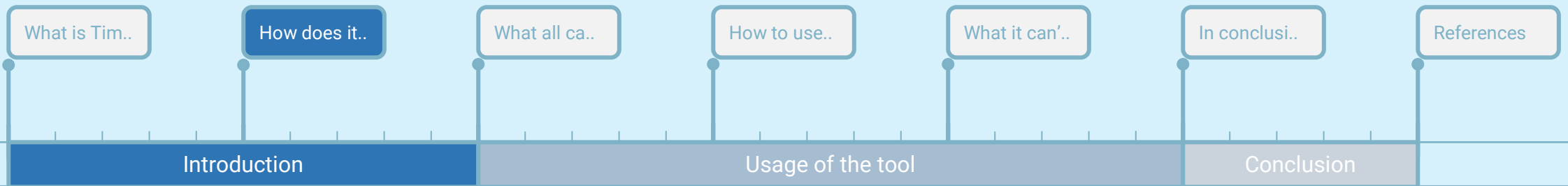
As the name suggests, It is a data visualization tool that can be used to tell timeline-based stories in an interactive manner. This web-based tool has been developed by **knight lab** and is completely **free** to use.

It requires **no coding** skills.

I have demonstrated the capabilities of this tool with examples. For the purposes of this assignment, I have chosen to tell a story about the events that led to the start of World War II.



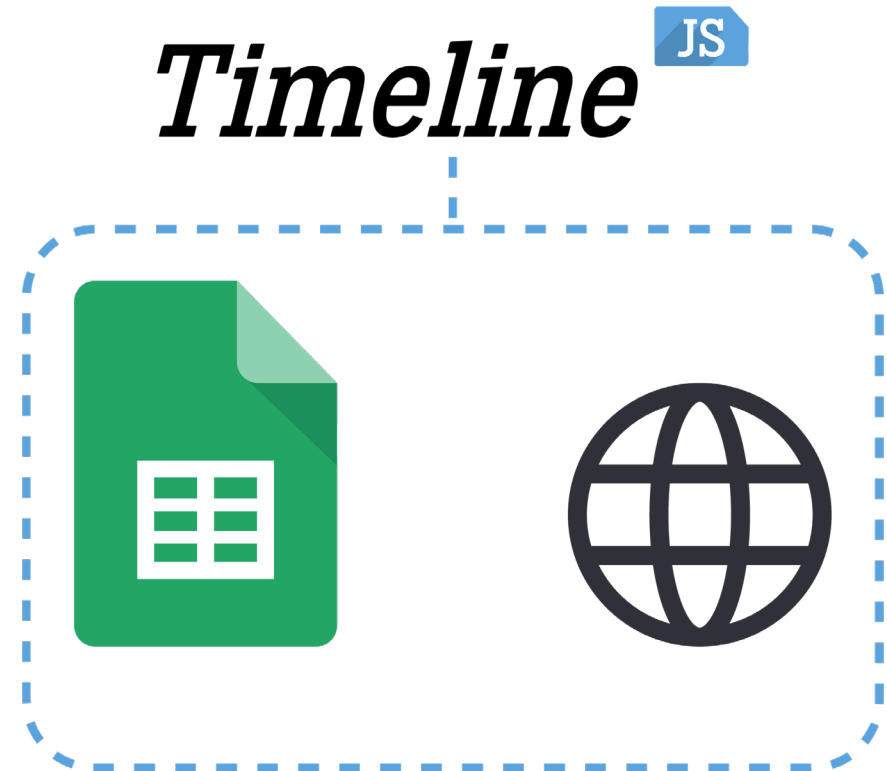
How does it work?



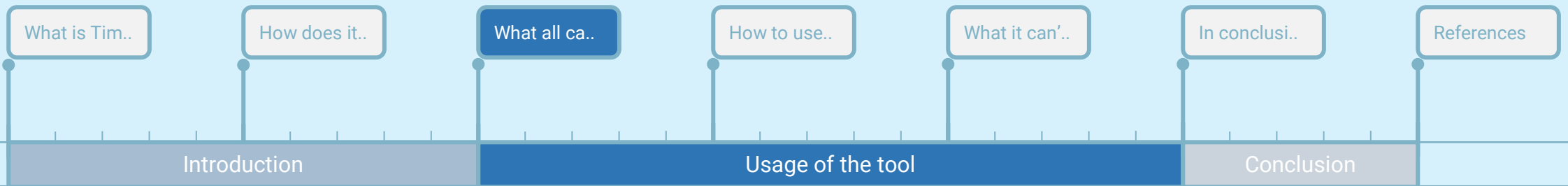
Conceptually, it has 2 components

1. A spreadsheet - used for entering the data. A [template](#) is provided in the instructions section of the webpage. Each row in the spreadsheet is an event in the timeline.
2. The website - serves multiple purposes like:
 1. Previewing timelines
 2. [Instructions](#) on how to make a timeline
 3. Sharing link to timeline
 4. Exporting embeddable code

Most of the work is done in the spreadsheet.



What all can it do?

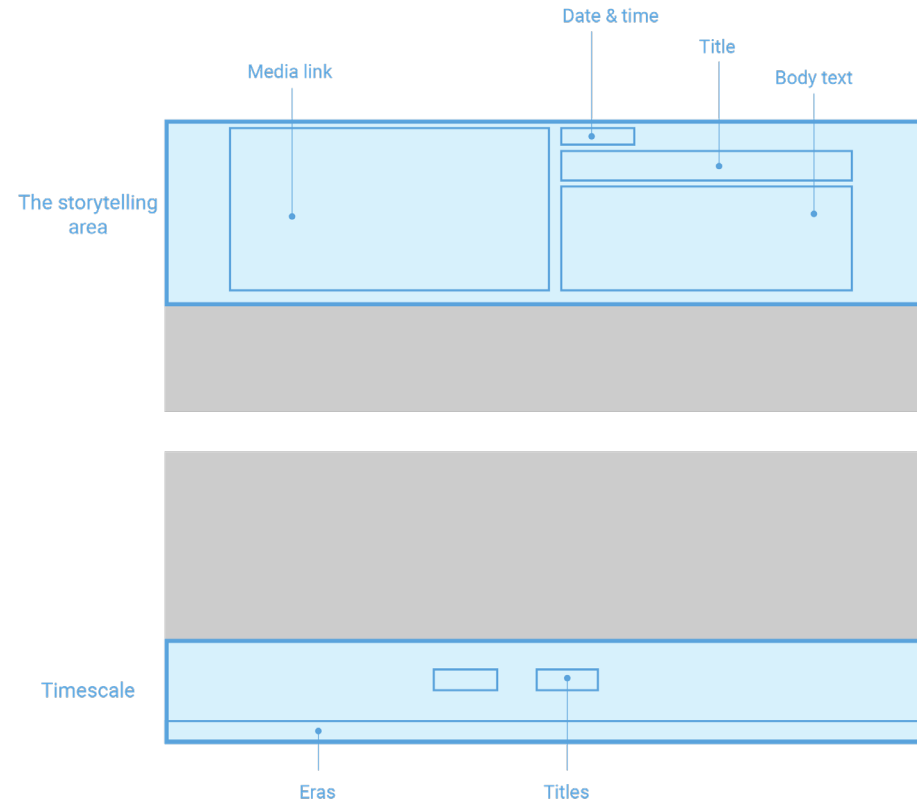


Creates interactive timelines

Layout of the visualization

1. The storytelling area

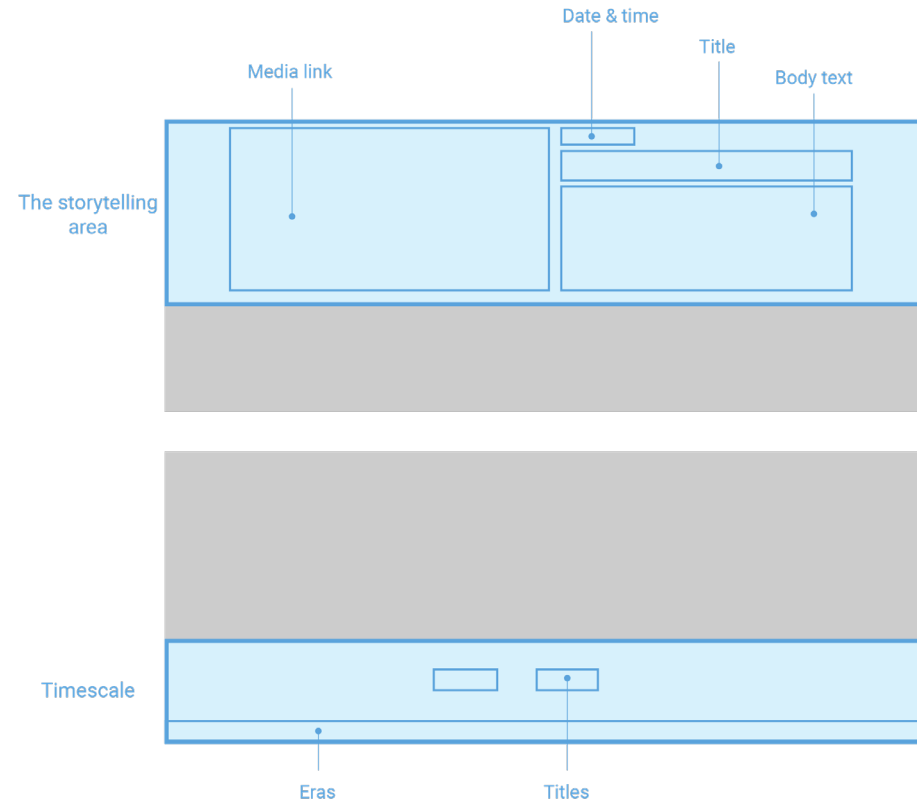
- a) **Title** - The main idea you want to convey for a particular event
- b) **Date & time** - The author can choose the granularity which ranges from the year to the exact time something happened
- c) **Body text** - Provides a description of the event being shown
- d) **Media link** - You can choose to upload images, videos, audio, tweets and Google map. The supported media types can be viewed [here](#).



Creates interactive timelines

Layout of the visualization

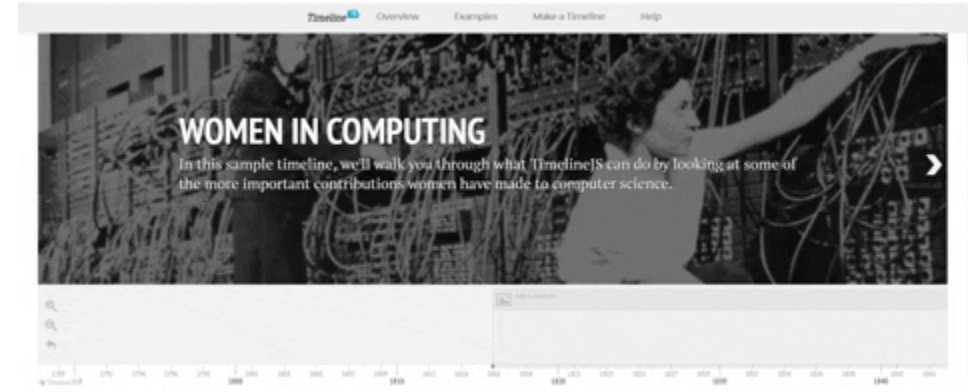
2. **Timescale** - This band at the bottom shows where the event is placed in the timeline. There are 2 types of data that can be shown:
- a) **Titles** – Consists of the events that have either occurred on a given day or over a period of time.
 - b) **Eras** - A period of time that defined the context in which the events took place.



Creates interactive timelines

Interactivity of the timeline

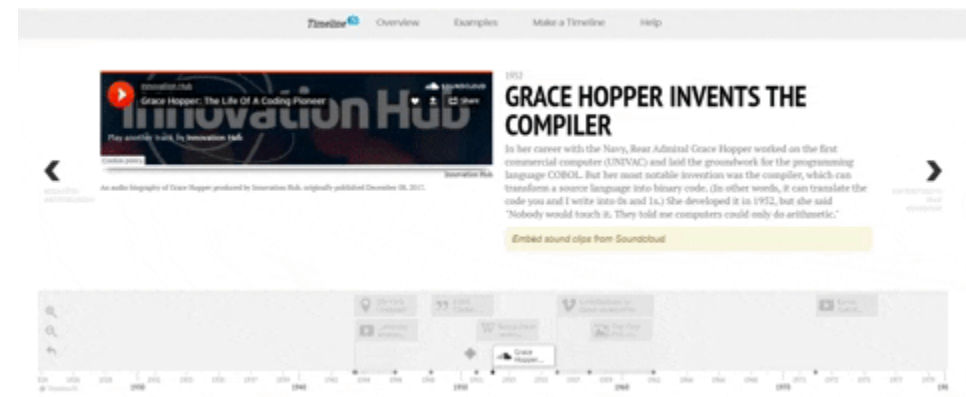
1. **Zooming** - There are 6 levels of zoom that are provided by the tool.
2. **Panning** - one can pan across the timeline by clicking and dragging
3. **Selecting** - On clicking the event, the title, date, body and media associated with that particular event are displayed
4. **Expanding titles** - If the title is too long, one can hover over the banner to see the full title



Creates interactive timelines

Interactivity of the timeline

1. **Zooming** - There are 6 levels of zoom that are provided by the tool.
2. **Panning** - one can pan across the timeline by clicking and dragging
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Publish the spreadsheet as a timeline

Previews

The timeline can be previewed in a new window or on the same page, by clicking the appropriate buttons.

The screenshot shows the Timeline tool interface. A large blue number '4' is in the top left corner. The main content area is titled 'Share Link' and contains the following text: '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.' Below this is a text input field containing the URL: `https://cdn.knightlab.com/libs/timeline3/latest/embed/index.html?source=11jCzm2Wx3TR2qxubXpXmV_FW4TiGQMPc-PmflD0qEM&font=Default&lang=en&initial_zoom=2&height=650`. Below the URL field is an 'Embed' section with the text: 'Copy this embed code and paste it on your site where you want your timeline to appear (just like a YouTube video).' The embed code is: `<iframe src='https://cdn.knightlab.com/libs/timeline3/latest/embed/index.html?source=11jCzm2Wx3TR2qxubXpXmV_FW4TiGQMPc-PmflD0qEM&font=Default&lang=en&initial_zoom=2&height=650' width='100%' height='650' webkitallowfullscreen mozallowfullscreen allowfullscreen frameborder='0'>`. There are two callout boxes: 'Link that can be shared' pointing to the URL field, and 'Embeddable code' pointing to the embed code field. Below the embed code field are two buttons: 'Preview' and 'Open Preview in a new window'. A blue arrow points from the 'Open Preview in a new window' button to a callout box labeled 'Preview opened in new window'. This callout points to a preview window showing a historical event titled 'THE TREATY OF VERSAILLES' with a photo of the signing and a text description.

Publish the spreadsheet as a timeline

Shared links

A link is generated for your timeline and the same can be shared by copy-pasting. Here's a [link](#) to the timeline I made.

The screenshot shows the 'Timeline' tool interface with a '4 Share Link' section. It includes a 'Share Link' section with a URL and an 'Embed' section with HTML code. A 'Preview' button is visible, and a callout box indicates 'Preview opened in new window'. Below this, a preview of a timeline entry titled 'THE TREATY OF VERSAILLES' is shown, featuring a historical photograph and text.

4 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.

Share Link
`https://cdn.knightlab.com/libs/timeline3/latest/embed/index.html?source=11jCzm2Wx3TR2qxubXpXmV_FW4T1gQMPc-PmflD0qEM&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=11jCzm2Wx3TR2qxubXpXmV_FW4T1gQMPc-PmflD0qEM&font=Default&lang=en&initial_zoom=2&height=650' width='100%' height='650' webkitallowfullscreen mozallowfullscreen allowfullscreen frameborder='0'>
```

Preview **Open Preview in a new window**

THE TREATY OF VERSAILLES
The Versailles treaty imposes regulations on Germany. It cuts down the German army to just 100,000 and drastically reduces the German territory. It also implies that Germany was responsible for World War I. Hence, the German people are left feeling utterly humiliated.

Publish the spreadsheet as a timeline

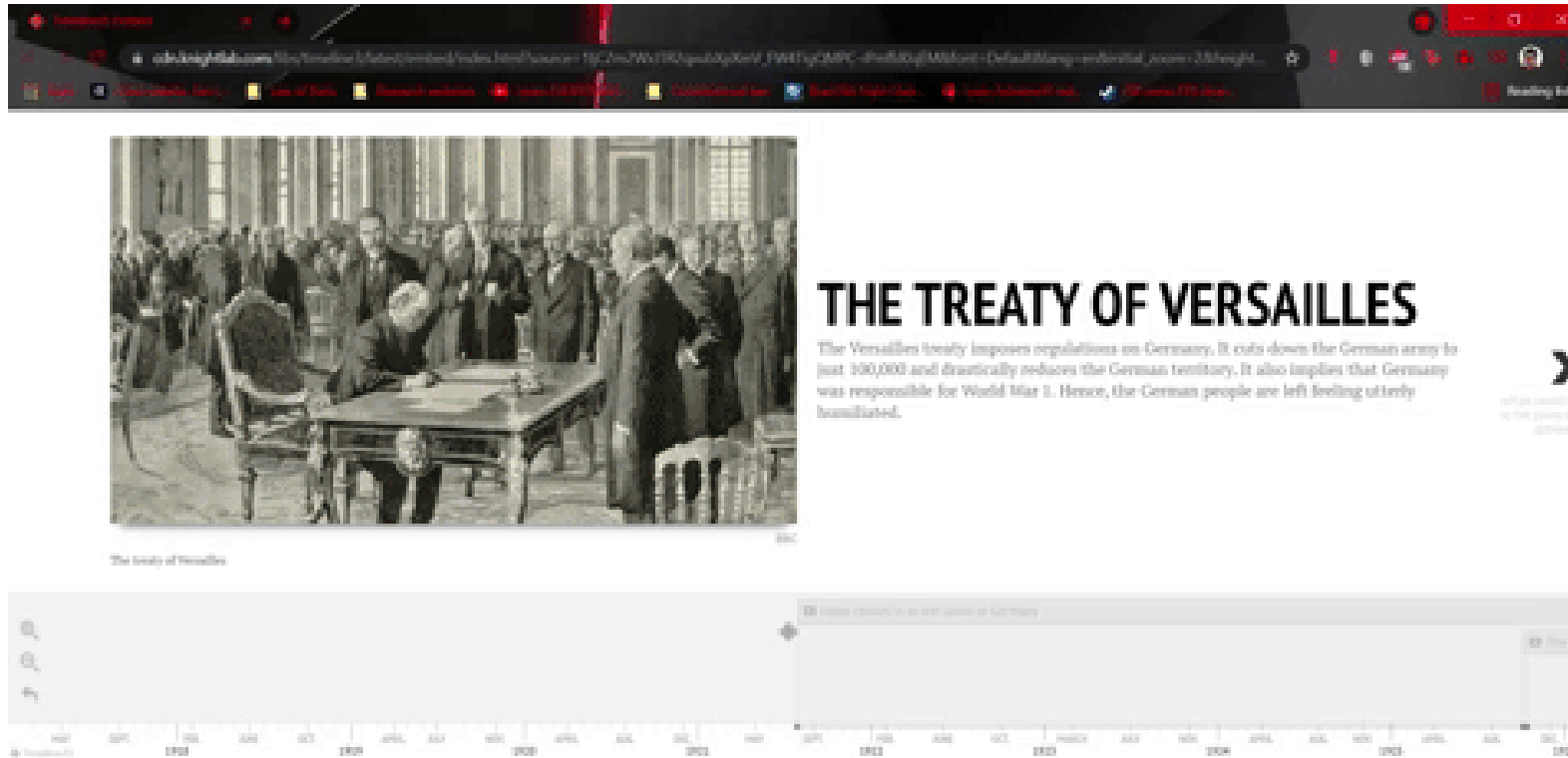
Embeddable codes

The tool helps generate a code for the timeline, which can simply be copy-pasted into the parent code of your website.

The screenshot shows the 'Timeline' tool interface. At the top, there are navigation links: 'Timeline', 'Overview', 'Examples', 'Make a Timeline', and 'Help'. A large blue number '4' is positioned next to the 'Share Link' section. The 'Share Link' section contains the text: '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.' Below this is a text input field containing the URL: 'https://cdn.knightlab.com/libs/timeline3/latest/embed/index.html?source=11jCzm2w3TR2qxubXpXmV_FW4T1gQMPc-PmflD0qEM&font=Default&lang=en&initial_zoom=2&height=650'. A blue callout box labeled 'Link that can be shared' points to this URL. The 'Embed' section contains the text: 'Copy this embed code and paste it on your site where you want your timeline to appear (just like a YouTube video)'. Below this is a text input field containing the following HTML code: '<iframe src="https://cdn.knightlab.com/libs/timeline3/latest/embed/index.html?source=11jCzm2w3TR2qxubXpXmV_FW4T1gQMPc-PmflD0qEM&font=Default&lang=en&initial_zoom=2&height=650" width="100%" height="650" webkitallowfullscreen mozallowfullscreen allowfullscreen frameborder="0">'. A blue callout box labeled 'Embeddable code' points to this code. Below the code field are two buttons: 'Preview' and 'Open Preview in a new window'. A blue callout box labeled 'Preview opened in new window' points to a separate window that has opened. This window displays a historical timeline entry for 'THE TREATY OF VERSAILLES'. The entry features a black and white photograph of a group of men in a room, with the title 'THE TREATY OF VERSAILLES' in large, bold letters. Below the title is a short paragraph of text: 'The Versailles treaty imposes regulations on Germany. It cuts down the German army to just 100,000 and drastically reduces the German territory. It also implies that Germany was responsible for World War I. Hence, the German people are left feeling utterly humiliated.' The timeline interface includes a search bar, a list of items, and a navigation bar at the bottom.

Here's a demonstration

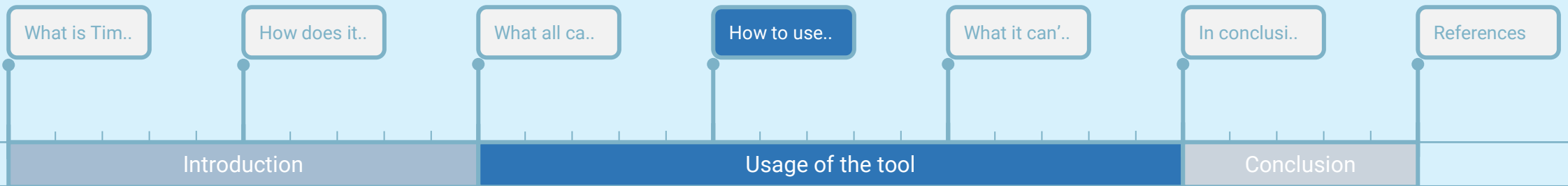
Events that led to World War II [\[link\]](#)



The screenshot shows a web browser window with a dark theme. The address bar displays a URL from 'cbl.knightid.com'. The browser's tab bar shows several open tabs, including 'Google', 'The Treaty of Versailles', 'Research website', 'World War II', 'World War II', 'World War II', 'World War II', 'World War II', and 'World War II'. The main content area features a black and white photograph of the signing of the Treaty of Versailles. To the right of the photo is the title 'THE TREATY OF VERSAILLES' in large, bold, black letters. Below the title is a paragraph of text: 'The Versailles treaty imposes regulations on Germany. It cuts down the German army to just 100,000 and drastically reduces the German territory. It also implies that Germany was responsible for World War I. Hence, the German people are left feeling utterly humiliated.' To the right of the text is a right-pointing arrow icon. Below the text and image is a horizontal timeline axis with a vertical line indicating the year 1919. The timeline axis is labeled with years from 1917 to 1924. The text 'The Treaty of Versailles' is written below the timeline axis.

[Link to spreadsheet.](#) Note: Please do not change anything.

How to use Timeline.js?



There are 4 simple steps

1. Create a spreadsheet

Go to the [homepage](#) of the tool and click on “get the spreadsheet template”.

Note that all data must be entered only in this template, and not anywhere else. Alternatively, this [link](#) can be used to access the template.

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 [Making a timeline from a Google Spreadsheet](#)

[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.

A copy of the template is created

Year	Month	Day	Time	End Year	End Month	End Day	End Time	Display Date	Headline	Text	Media	Media Credit	Media Caption	Media Thumbnail	Type
1939	8	23							Non-aggression pact between Germany & USSR	The German Chancellor is more concerned about how his accused enemies, the Soviets, will react. He signs a non-aggression pact with his ideological enemy, Stalin. In reality, the pact was a deal to divide Poland between the two countries.	20c5d598-ccaf-4fc				title
1939	8	23		1939	9	1			The Western Allies are confused	Britain and France struggle to understand this unlikely alliance.	Dak6kie-1950.jpg				era
1939	9	1							Germany invades Poland	Hitler invades Western Poland. The Polish Army on their horses are no match for the German panzers. However, they put up a valiant fight.	germany-invades-p				title
1939	9	3							The official start of World War II	Britain and France declare war on Germany. Hitler is horrified with this development. All along he hadn't believed that they would go to war over an issue in Eastern Europe. He is disillusioned.	9678df48b0ccfa3d6				title
1939	9	4							BEF deployed to France	The British Expeditionary Force (BEF) is sent to help the French Army against any German attack. Hitler isn't ready to wage war against the Western Allies.	781px:Tab_British				title
1939	9	17							USSR invades Poland	The Soviet Union invades Eastern Poland. The Russians would gain a free hand and recovery of some of the territory that had been lost at the end of World War 1.	Lvw_1939_Sov_Co				title

There are 4 simple steps

2. Entering the data

Within the spreadsheet, enter each event into a row. For events that last for a period of time, the end date & time can also be entered.

Note that no rows should be left empty, column headers should not be changed & columns shouldn't be removed.

The image shows a spreadsheet interface with several callout boxes pointing to specific columns. The callouts are: 'Starting date & time' (pointing to Year, Month, Day, Time), 'Ending date & time' (pointing to End Year, End Month, End Day, End Time), 'Title' (pointing to Headline), 'Body text' (pointing to Text), 'Media credits' (pointing to Media Credit), 'Media URL' (pointing to Media), 'Media caption' (pointing to Media Caption), and 'Type of event - title / era' (pointing to Type). A dashed blue box highlights a row of data, and a callout box at the bottom left says 'Each row is an event'.

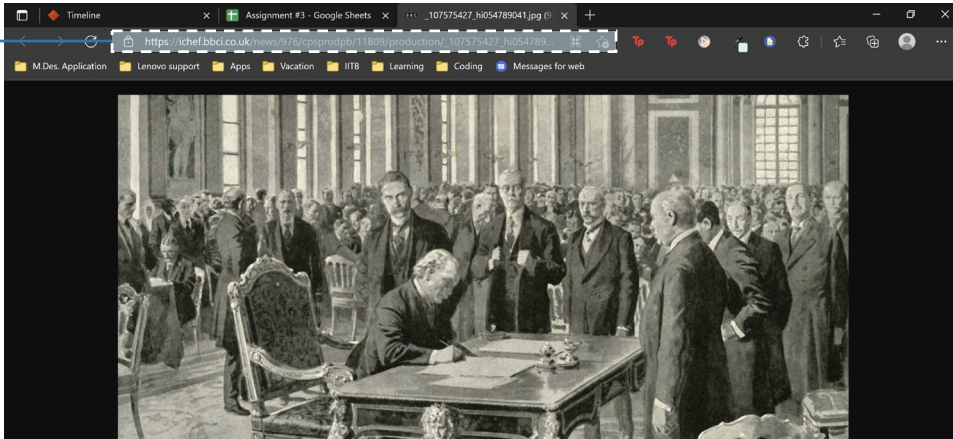
Year	Month	Day	Time	End Year	End Month	End Day	End Time	Display Date	Headline	Text	Media	Media Credit	Media Caption	Media Thumbnail	Type
1939	8	23							Non-aggression pact between Germany & USSR	The German Chancellor is more concerned about how his avowed enemies, the Soviets, will react. He signs a non-aggression pact with his ideological enemy, Stalin. In reality, the pact was a deal to divide Poland between the two countries.	20b2c58r-oadf-8c				title
1939	8	23		1939	9	1			The Western Allies are confused	Britain and France struggle to understand the treaty alliance.	0a761a1e-1850-10g-w				era
1939	9	1							Germany invades Poland	Germany invades Poland. The Polish Army on their horses are no match for the German panzers. However, they put up a valiant fight.	88785df8-b0cc-fa3b				title
1939	9	3							The official start of World War II	Britain and France declare war on Germany. Hitler is horrified with this development. All along he hadn't believed that they would go to war over an issue in Eastern Europe. He is disillusioned.	66785df8-b0cc-fa3b				title
1939	9	4							BEF deployed to France	The British Expeditionary Force (BEF) is sent to help the French Army against any German attack. Hitler isn't ready to wage war against the Western Allies.	7370x-Tba_British				title
1939	9	17							USSR invades Poland	The Soviet Union invades Eastern Poland. The Russians would gain a free hand and recovery of some of the territory that had been lost at the end of World War I.	Lvtz_1939_Sov_Ca				title

There are 4 simple steps

3. Adding media links

Each event can be linked with some media. The media type ranges from images, video, audio to Tweets and Google maps.

The media must be entered into the table in the form of URLs. The spreadsheet will notify you if the URL is invalid.



The screenshot shows a browser window displaying a historical photograph of the signing of the Treaty of Versailles. A blue box highlights the image, and a callout bubble points to a cell in a spreadsheet below, indicating where the URL should be pasted.

Year	Month	Day	Time	End Year	End Month	End Day	End Time	Display Date	Headline	Text	URL	Media Caption	Media Thumbnail	Type
									The treaty of Versailles	The Versailles treaty imposes regulations on Germany. It cuts down the German army to just 100,000 and drastically reduces the German territory. It also implies that Germany was responsible for World War 1. Hence, the German people are left feeling utterly humiliated.	https://chef.bbc.co.uk/news/975/cpameddb/11809/production/107575427_h05478941	The treaty of Versailles		title
1919	6	28							Hitler chimes in as the savior of Germany	Adolf Hitler feeds on this resentment and taps into the wounded German pride. Under his leadership, the Nazi party starts to build a mass following.	https://www.youtube.com/watch?v=20200416:1027	Hitler chimes in as the savior of Germany		title
1921	7	29		1925	10	18			The Locarno Pact	At the conclusion of a European peace conference held in Switzerland, the Locarno Pact was signed, reaffirming the national boundaries decided by the Treaty of Versailles and approving the German entry into the League of Nations.	Austin-Chamberlain	The Locarno Pact		title
1925	10	5		1925	10	18			Hitler starts to violate the Versailles treaty	Step by step, Hitler suspends the regulations of the Versailles treaty. This gives the German people a sense of unity and economic security.	Hitler%20Hitler	Hitler starts to violate the Versailles treaty		title
1934	11	16		1930	9	1			Hitler merges the posts of Chancellor and President	Hitler got elected as the President of Germany in an unprecedented consolidation of power in the short history of the republic. In violation of the treaty, Hitler starts to build up the German Army. He re-militarizes the Rhineland. He also	general%201440%3A108	Hitler merges the posts of Chancellor and President		title
1934	8	19												

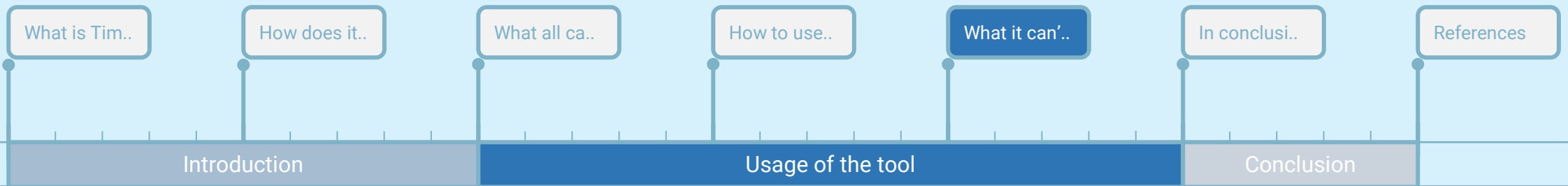
There are 4 simple steps

4. Publishing the spreadsheet

1. Go to file > publish to the web.
2. In the window that appears, change the setting from “entire document” to “od1”. Close the window.
3. Copy the URL of the spreadsheet from the browser’s address bar.
4. Go to the [website](#). Scroll down to step 3.
5. Paste the URL in the bar.
6. There are optional settings that can be used to alter the font combinations, language, default start slide, initial zoom level and other minor adjustments.
7. Scroll further down. Click on “preview timeline”. The link and embeddable code can be copied as well.

Year	Start	End	End Year	Property Date	Headline	Text	Media	Media Credit	Media Caption	Media Thumbnail	
1919	6	28			The treaty of Versailles.	The Versailles treaty imposes regulations on Germany. It cuts down the German army to just 100,000 and drastically reduces the German territory. It also blames that Germany was responsible for World War 1. Hence, the German people are left feeling angry, humiliated.	https://www.gettyimages.com/detail/stock-photo/1124114147	Getty	The treaty of Versailles		
1932	7	20	1933	1	30	Hitler comes in as the savior of Germany.	Adolf Hitler leads, on his reappointment and steps into the wounded German people. Under his leadership, the Nazi party starts to build a mass following.	https://www.gettyimages.com/detail/stock-photo/1124114147	Getty	Hitler comes in as the savior of Germany	
1925	10	5	1925	10	18	The Locarno Pact	By the conclusion of a European peace conference held in Switzerland, the Locarno Pact was signed, reaffirming the national boundaries decided by the Treaty of Versailles and approving the German entry into the League of Nations.	Austrian Chamberlain	Getty	The Locarno Pact	
1934	11	18	1933	9	1	Hitler starts to violate the Versailles treaty	Step by step, Hitler suspends the regulations of the Versailles treaty. This gives the German people a sense of unity and economic security.	British Minister of	Getty	Hitler starts to violate the Versailles treaty	
						Hitler merges the posts of Chancellor and	Hitler got elected as the President of Germany in an unprecedented consolidation of power in the short			Hitler merges the posts of	

What it can't do :/

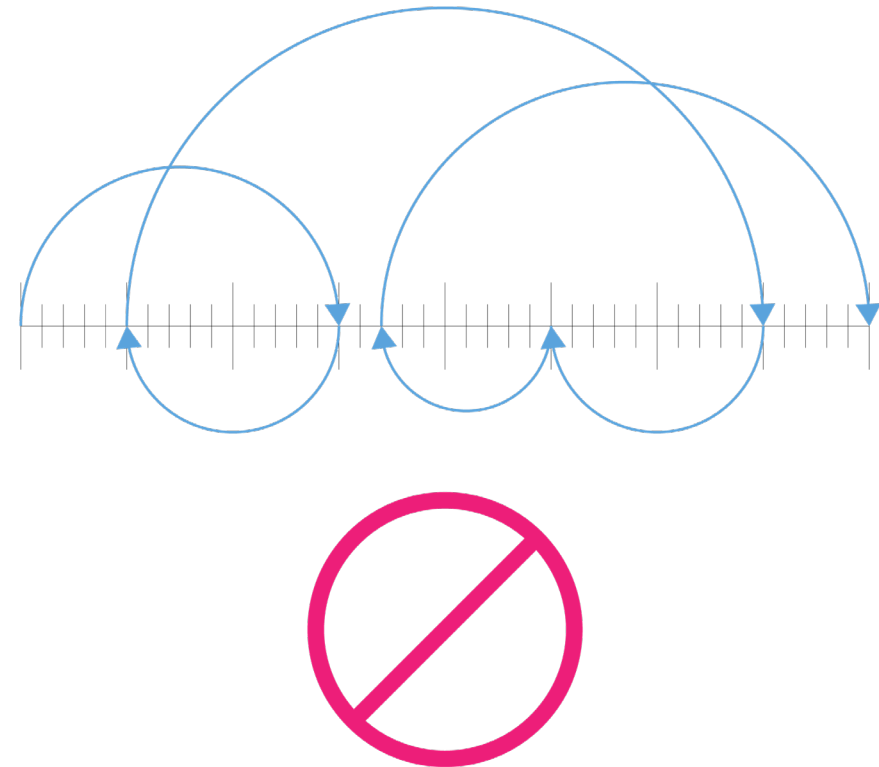


Manual navigation through non-linear stories

Cannot set the order for non-linear storytelling

On pressing the right or left arrows, it will go to the event in a linear chronological order.

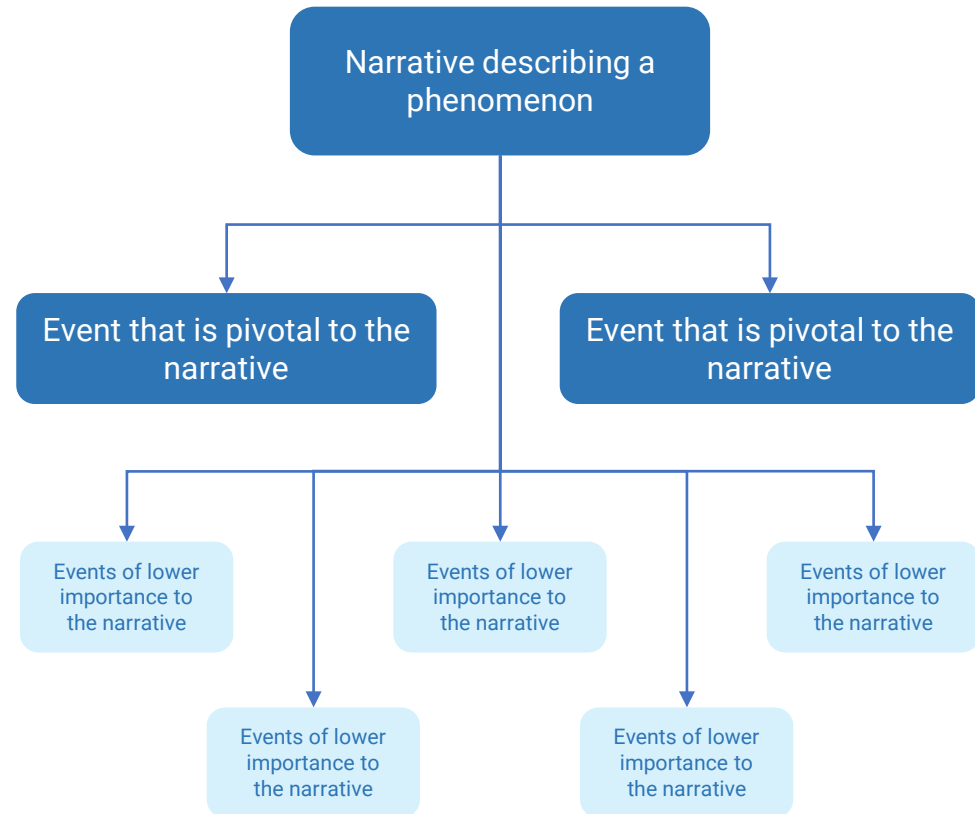
However, some stories might need a non-linear storytelling approach. You'd have to manually set this.



The hierarchy among events cannot be encoded

In some narratives, there can be events that are directly causing a particular phenomenon to occur. These events would then be of greater priority while telling the story. This sense of hierarchy cannot be encoded here.

In my example, the event “Britain and France declare war on Germany” highly impacted the course of history. Hence, it holds higher significance than events like “the Locarno Pact”.

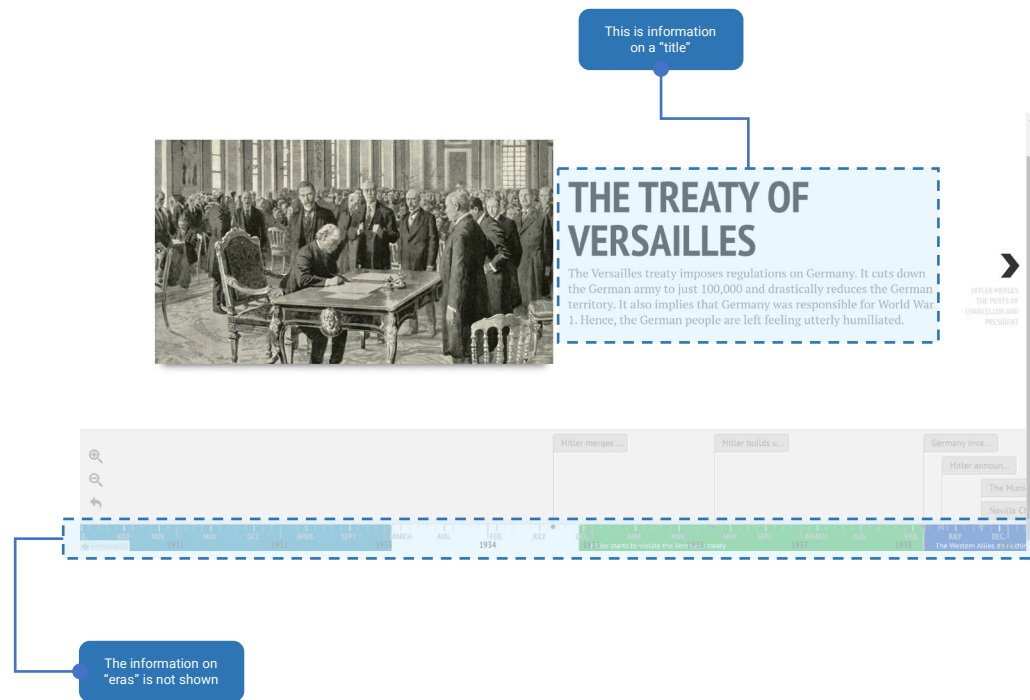


It does not show information about eras

Eras define the context in which events occur. Hence, they can be quite significant to the effectiveness of the storytelling.

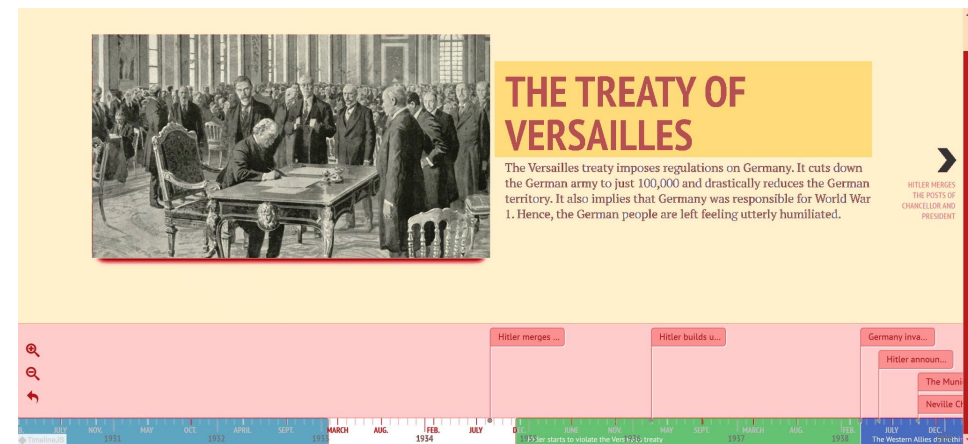
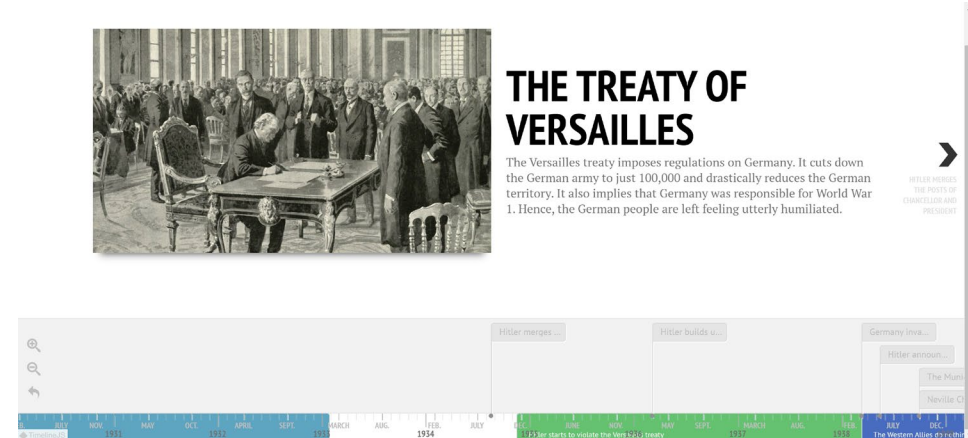
For example, in my visualization “Neville Chamberlain tries to stop the invasion” is something that happened over a span of 15 days. Hence, I labeled it as an “era” rather than a “title”. However, the information entered in the table is not shown in the visualization. Only by changing it to “title”, it was made visible as an event that spanned over a period of time.

The element of interactivity is being underused here.

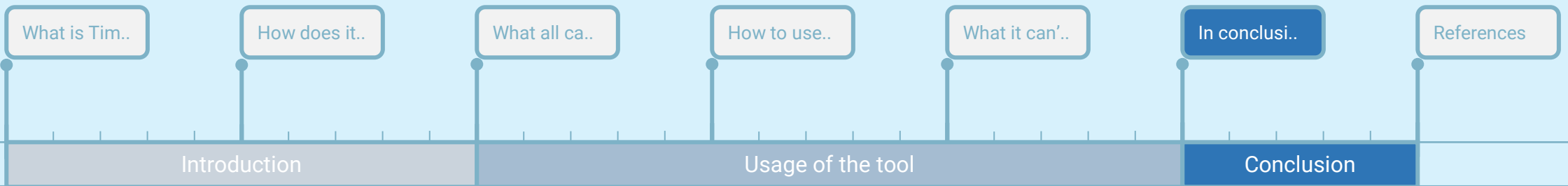


One cannot change the visual design

There are no options for the author to change the style, colors or elements of the visualization. Such a treatment would have enabled an added layer of character to the visualization.



In conclusion,



Timeline.js is good for visualizing simple timeline-based data stories

Use this tool for

1. Quickly showing events / ideas that can be explained using **linear narratives**.
2. Getting **embeddable code & links** to the timeline.

Strengths

1. Creating interactive timelines **without any coding** skills.
2. Presenting **ideas with temporal aspects**.
3. **Visually comparing events** along a timescale.

Limitations

1. Non-linear narratives need to be manually navigated.
2. Depicting a hierarchy in the importance of events.
3. Looking up information on eras.

References

1. My analysis of the tool – [Google doc](#)
2. [Timeline.js](#)
3. [Instructional video](#) on usage
4. [Template](#) for spreadsheet
5. Story – Events that led to World War II [\[link\]](#)
 - a) Netflix – Greatest Events of WWII in colour
 - b) Britannica – Munich Agreement [\[link\]](#)
 - c) History, Hitler reoccupies the Rhineland [\[link\]](#)
 - d) PBS, World on fire [\[link\]](#)
 - e) [Spreadsheet](#) I made for the story