

Lab 7 C: Scrollytelling

[Jump to bottom](#)

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Scrollytelling

Lab7 Description

This final programming assignment of the term is a more open-ended data visualization challenge. We have created a series of design specification for you to implement against (Lab 7 A,B,C,D). *You only need to complete one of these.* Take some time to look through each of them and decide.

Note that there is no starter code for this lab. You are welcome to use code from your previous assignments, or start from scratch. Some descriptions include resources or tips that may help you get started.

What to submit

1. You should implement the design specification below, including the visual interface and user interaction components.
2. Rename your `lab7` folder to `LastName_FirstName_lab7`
3. Zip up `LastName_FirstName_lab7` as `LastName_FirstName_lab7.zip` and submit it to Canvas.

Grading

Each lab7 submission will be graded against the design specification provided for the lab that you choose. This will consists of:

1. Correctly implementing the visual design elements of the lab. This includes: correct syling of the chart (or charts) used, correct data mappings between the data and the views, and use of axis labels and styling where applicable.
2. Correctly implementing the interactive functionality. This is specified through the design specification, and also the short video for each lab7 option that highlights how it should work. Both of these components are important. Depending on which lab7 you choose, these may be independent (e.g., filters), or very connected (e.g., scrollytelling).

Grading Notes specific for lab 7C

In addition to the user interaction and interface elements described below (and in the video), this lab places particular emphasis on scrollytelling look and feel. This is central to this style of visualization. Ensure that as users scroll down (and back up) the visualization, the corresponding changes happen in the visualization as well as the textual narrative along side the vis. Watch the video carefully to observe how these changes should happen.

Which TAs to ask for help on this lab

To make feedback, guidance, and grading more consistent for lab7, we have assigned the following TAs as the primary people to ask for assistance on this lab:

- Mugundhan
- John

Dataset

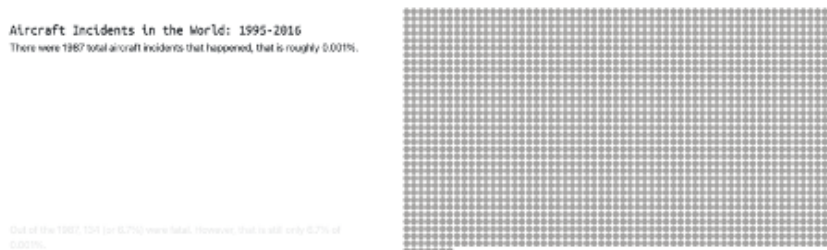
For this visualization, please use this dataset: [Data](#)

Design Specifications

Scrollytelling is a form of interactive visualization where a "story" is told as the user scrolls down the webpage. Sections of story are often accompanied by different visualizations to provide a deeper layer of meaning. It provides more and rich details that allows the users to become more engaged with the story. For this lab 7, you will replicate the example shown. The example story discusses various statistics of aircraft incidents to provide a deeper understanding of how risky air traffic is. There are two visualizations that are used, each described below. These animate as you scroll. Your final submission must include the following, along with the interactive scrolling between the stages (shown in the demo video):

See the video clip below of a demo of the visual and interactive aspects of this lab: [Video](#)

Visualization 1: Aircraft Incidents in the World



The story pieces to communicate (shown through scrolling)

1. There were 1987 total aircraft incidents that happened, that is roughly 0.001%.
2. Out of the 1987, 134 (or 6.7%) were fatal. However, that is still only 6.7% of 0.001%.
3. Now, 766 incidents were non-fatal. Meaning in 38.5% of the incidents, no one died. The remaining 54.8% were not serious enough to even be categorized as "non-fatal."

4. Putting into perspective, in those 22 years, 99.999% of the flights were safe. But, some of you may ask, can I make my trip even safer? Let's explore some data that may help you with this.

User Interface Elements

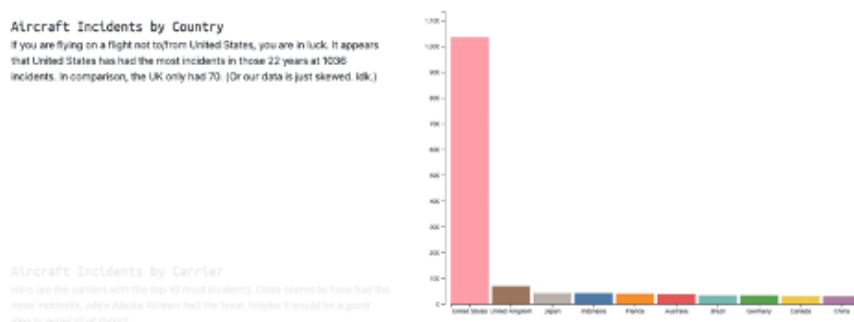
1. Story text and titles
 - i. Font styles do not have to be exact
 - ii. Statistics can be manually coded
2. Dot Matrix Chart to the right of the story
 - i. Each dot represents an aircraft incident
 - ii. Dots are properly highlighted
 - a. Red dot = Fatal Incidents
 - b. Orange dot = Non-fatal incidents
 - c. Grey dot = Other incidents

User Interactions

(note that this visualization relies heavily on scrolling, so the demo video will be of great help to understand how these interactions should work)

1. Scrollable webpage, with vis and story properly updating with scroll.
 - i. Vis and story should be fading in/out as the page is scrolled down/up
2. Each story is correctly connected to its vis
 - i. Story part 1 should initialize a dot matrix chart with nothing highlighted (all grey)
 - ii. Story part 2 should highlight fatal incidents (red)
 - iii. Story part 3 should highlight non-fatal incidents (orange)
 - iv. Story part 4 should fade away the dot matrix chart

Visualization 1: Aircraft Incidents by X



The story pieces to communicate

1. Aircraft Incidents by Country: If you are flying on a flight not to/from United States, you are in luck. It appears that United States has had the most incidents in those 22 years at 1036 incidents. In comparison, the UK only had 70.

2. Aircraft Incidents by Carrier: Here are the carriers with the top 10 most incidents. Delta seems to have had the most incidents, while Alaska Airlines had the least. Maybe it would be a good idea to avoid all of them?
3. Aircraft Incidents by Manufacturer: Despite looking similar, aircrafts are made by different manufacturers. The chart shows that Boeing has had the greatest number of incidents. Did you know you can check which manufacturer your carrier is flying when you book your ticket?
4. Aircraft Incidents by Flight Phase: All that has been discussed above can sometimes be out of your control, so here's some data that works for every plane regardless of the previous criteria: flight phases. While you may need to do some search on what each phase means, knowing what phase incident happens the most can be helpful when you fly. From our data, Takeoff and Taxi seems to have the most incidents, while maneuvering, go-around, and climb have the least incidents.

User Interface Elements

1. Story text and titles
 - i. Font styles do not have to be exact
 - ii. Statistics can be manually coded
 - iii. Title and story present
2. Bar Chart to the right of the story
 - i. Displays bar chart of the data respective to the story
 - ii. Properly colored to distinguish between each domain categories
 - iii. Axis values updates accordingly

User Interactions

1. Scrollable webpage, with vis and story properly updating with scroll (again, see the video for intended result, look, feel)
 - i. Vis and story should be fading in/out as the page is scrolled down/up. (Hint: Look into d3 transitions on possible methods of implementing this.)
2. Each story is correctly connected to its vis, only displaying the bar chart relevant to its story

Notes and Hints

- The stories have been provided in the above sections, but feel free to add more content that you think can engage the readers more! Your project will be graded on the basic requirements detailed in this section.
- Highly recommend that you use global variables such that your data and html elements are accessible throughout the entire file. Also, it is a good idea to organize each vis into its own function as you will be making numerous vis.
- While the font style does not have to be exact, we will still be looking for if your text is correctly formatted (i.e. correct grammar and usage, capitalization, and format).
- Resources to help you get started:

- [So You Want to Build A Scroller](#)
- This project was based off this demo. Scroller.js is helpful to use to create the scrolling component and provided by the author of the demo. The .css file should also help in determining how to style your vis. You do not have to use this as a starting point, but it may be helpful.
- [How I Created an Interactive, Scrolling Visualisation with D3.js, and how you can too](#)

▼ Pages 11[▶ Home](#)[▶ Lab 1: Intro to HTML, CSS, and SVG](#)[▶ Lab 2: Javascript 101](#)[▶ Lab 3: Intro to D3](#)[▶ Lab 4: D3 Selections and Grouping](#)[▶ Lab 5: D3 Enter, Update, Exit, and Filter](#)[▶ Lab 6: Brushing and Linking](#)[▶ Lab 7 A: Force Directed Graph](#)[▶ Lab 7 B: Brushing and Linking](#)**▼ Lab 7 C: Scrollytelling**

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What to submit

Grading

Grading Notes specific for lab 7C

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Dataset

Design Specifications

Visualization 1: Aircraft Incidents in the World

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User Interactions

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User Interface Elements

User Interactions

Notes and Hints

► [Lab 7 D: Interactive Visual Comparison](#)

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