Ideas

*VEI = Volcanic Explosivity Index

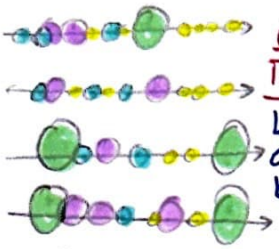
Pie chart
Types of eruptions/ Flow of largest 40 volc.

Cartogram (scaled)
relative size for number of volcanoes/most eruptions/etc.
(Bigger, more quantity)

ordered Bar

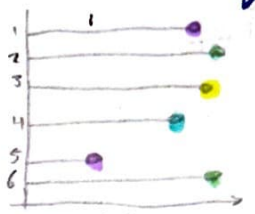
Tree Map

Choropleth
How many volcanoes per country or density?

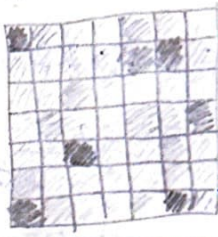


Circle Timeline
Large eruptions by Continent

Scatterplot
Explosivity vs. frequency



Lollipop
largest explosions & date of occurance.



Calendar Heatmap
Million year periods with number of eruptions etc.

Sankey
How each eruption falls into flow types/ VEI / etc.

Filter

- Ordered Bar & Lollipop convey same information, and preference is purely visual.
- Choropleth & Cartogram Actually serve different purposes, potentially good to have both → One for location → one for country/density
- Pie-chart & Treemap Treemap would be easier to read for closer values, and better for more data points.
- Calendar Heatmap & Circle Timeline Calendar Heatmap would be so sparse for such large timeline, whereas circle Timeline would be too, but conveys other info better so easier to use.

Catagorise – Our main data-points/attributes we want to portray: location, Explosivity, Frequency, Type/Status

① Location (Qualitative/catagorical)
- Choropleth } location, and nuance to what is significant about it
- Cartogram }
- PieChart To catagorise by continent

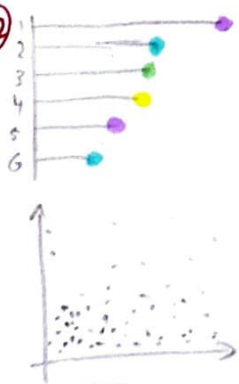
② Explosivity/Volume (Quantitative) (or for VEI, ordered catagorical)
- Scatterplot } scatterplot for all data, lollipop for largest/most recent.
- Lollipop

③ Frequency (Ordered catagorical)
- circle Timeline Probably easiest to get information from ~~Calendar Heatmap~~

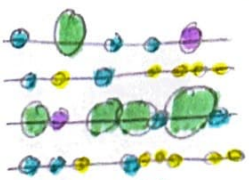
④ Type/Status (Qualitative)
- Sankey } Good to see how many volcanoes belong to each catagory
- Treemap }

① 

To give a good base of knowledge to stem from, location is the best place to start. Choropleth & Pie chart to show location, and number of volcanoes per country/ continent to see pattern.

② 

To add some nuance to each volcano of note: ie How large/ explosive the largest volcanoes were, and how recent they have been

③ 

Again, adding more info to ①, by adding a timeline of large eruptions, sorted by type or status or location

④ 

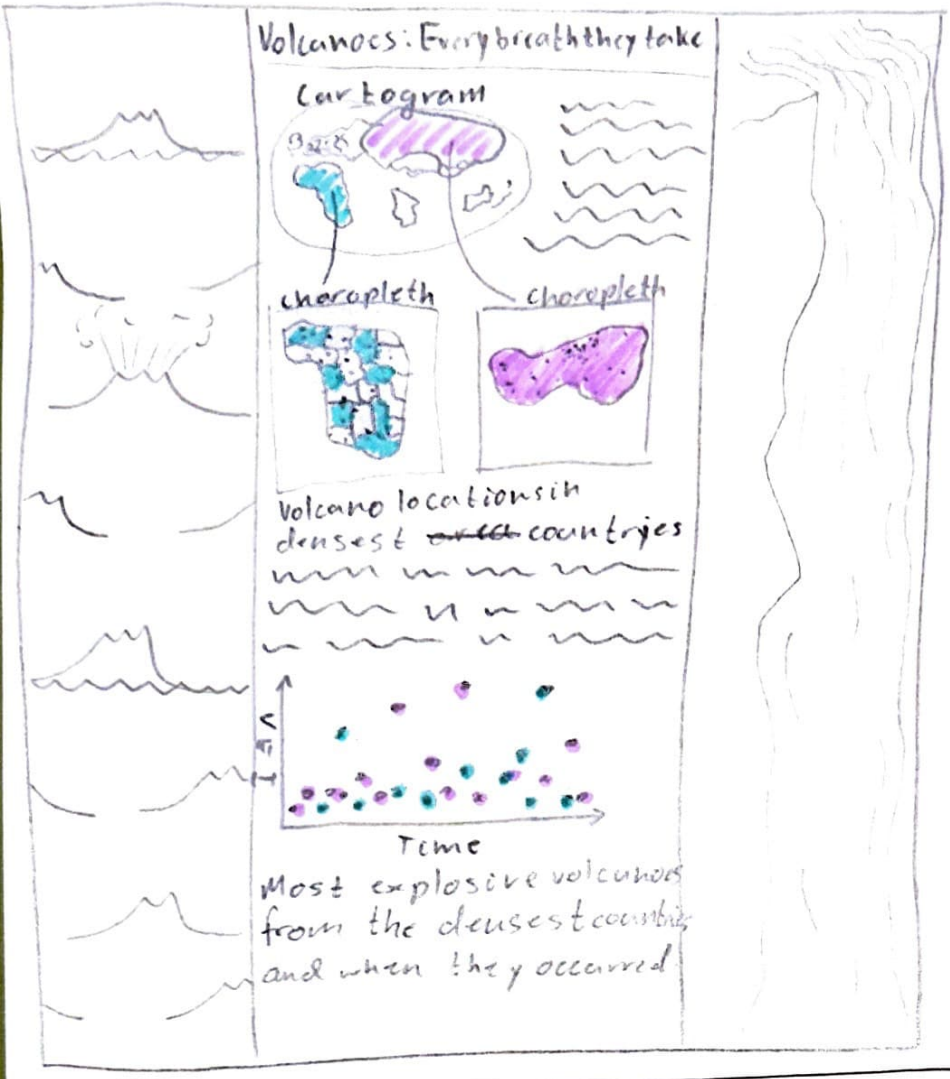
sums up with which type each volcano fits to, & ~~what~~ what their Status is.

Question

- This provides an easy to read "solution" to our question of organising all volcanoes into certain attributes they have, and conveying it all.
- Answers the overarching research question of "How do volcanoes live & die and where & where they do?" By bringing the information of how, when, where into the larger scope of what attributes they possess, and conveying it in a "how, when, where" manner.

Title: Initial designs: Countries.
Authors: Jesse Hodgson
Date: 23.09.25
Sheet: 2
Task: Make an initial design for Vis 2 website.

Layout

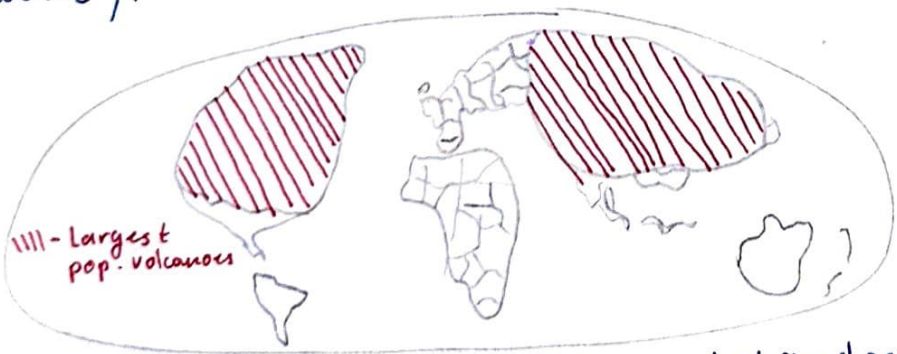


Operations

- Cartogram: Display the number of volcanoes in each country, where the relative size of a country is driven by number of volcanoes.
- Choropleth: Display the location of the volcanoes from the two largest countries. Here each dot can be hovered to show info about volcano.
- Scatterplot: Displaying the Explosivity of eruptions from the countries, and when the eruption occurred.
- Annotations: Brief paragraphs on the importance of the diagrams, and provides context to further understanding.

Focus

The main focus of this vis/website is the Cartogram that shows the relative density of volcanoes per country/number of volcanoes per country.



In a larger scope, this will lead to us looking closer at these 2 countries with the most volcanoes.
↳ Providing some insight into why these countries have the most, are more/less explosive etc.

Discussion

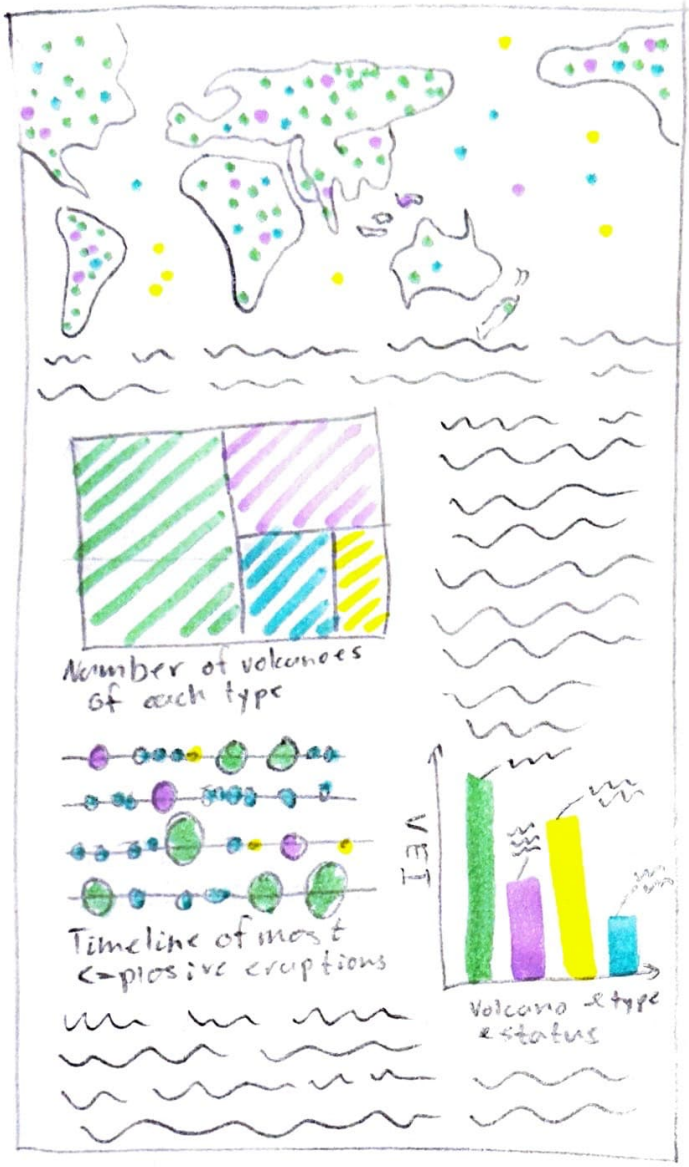
Pro: Having brief annotations that are not required for base level analysis, but used for some added information is efficient, and good for both in-depth & surface-level readers.

Con: Only analysing 2 countries worth of volcanoes may not provide enough interesting data to analyse.

Con: Not alot of depth of analysis techniques/diagrams used. → Won't lead to a terribly large amount of information being conveyed.

Title: ~~Placeholder~~ Initial designs: Timescale
Author: Jesse Hodgson
Date: 23-09-25
Sheet: 3
Task:

Layout



Operations

Choropleth: Simple conveyance of locations of the volcanoes, and the ~~colo~~ colour hue of the points represent what type of volcano it is.

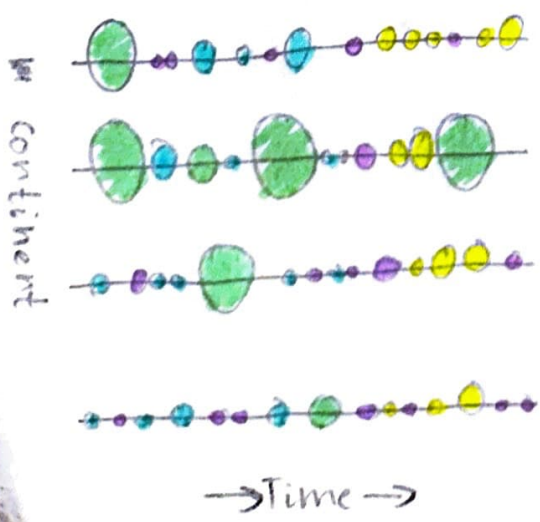
Treemap: displays the proportion of each volcano type compared to the others.

Circle Timeline: Displays 4 attributes: ~~explosivity size~~ Area of circle is explosivity, colour hue is type of volcano, which line its on shows which continent the volcano is on, and x distance is the time that the volcano ~~erupted~~ on.

Column: Summarises timeline's explosivity information by showing the largest explosion per volcano type.

Focus

- This webpage has less of a central focus, rather putting an equal amount of emphasis on each diagram.
  - ↳ However diagram with most nuance/information being conveyed would be the circle-timeline.



Conveying 4 attributes per volcano, and being relatively simple to read and get information out of.

Discussion

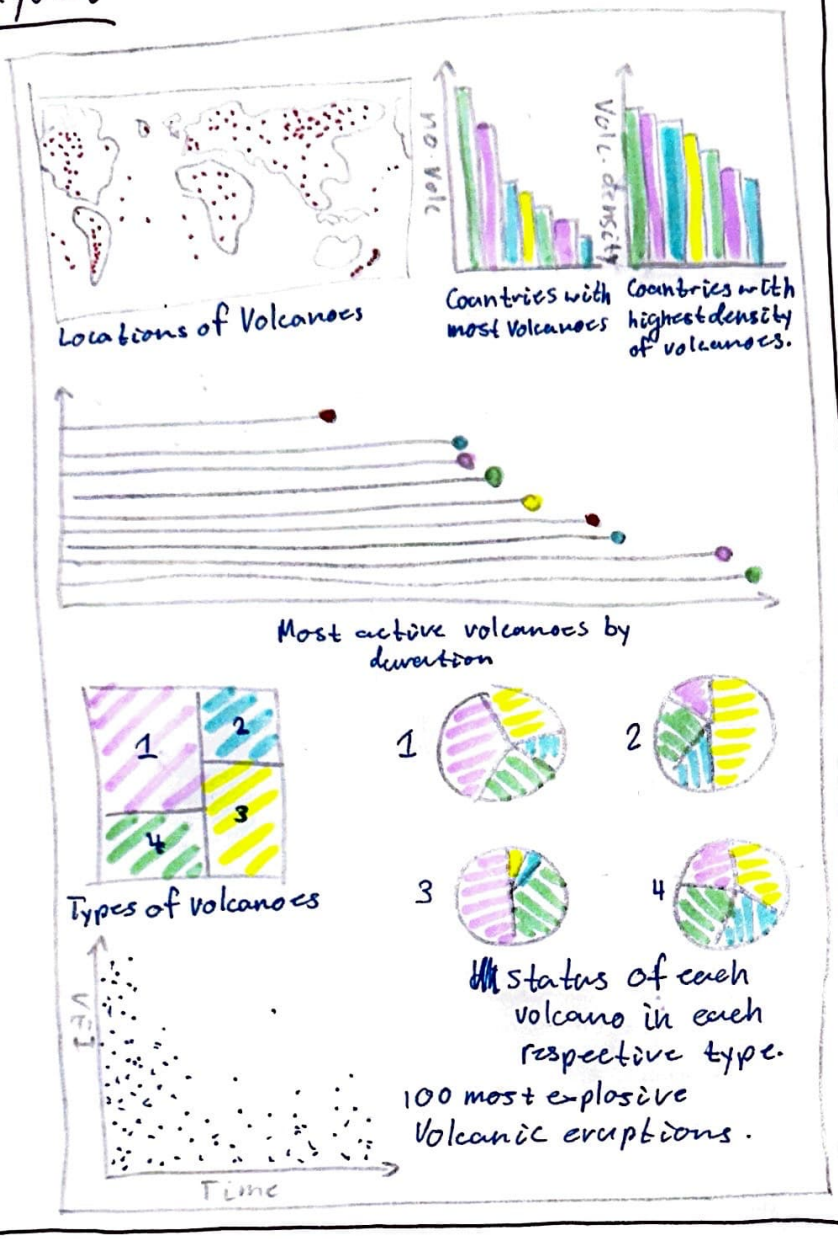
Pro: Each diagram is distinct from the others and use simple marks & channels to convey information, making it easily digestable for average reader.

Pro: Discusses all volcanoes in depth through time & explosivity of eruption.

↳ Con: ~~Non~~ Not all volcanoes have erupted!.

Title: Initial designs
Date: 25.09.25
Author: Jesse Hodgson
Sheet: 4
Task: Come up with a preliminary design for the Vis 2 webpage

Layout



Operations

Lollipop: Most active volcanoes ~~rowg~~ ranked by how long they have ~~rec~~ recordedly erupted for.

Treemap & Piecharts: The Treemap sorts all the volcanoes into their respective types, and the piecharts show the amount of volcanoes in each type, that are a certain status.

Choropleth & Bar: Used to show location specific data, such as the countries with the most volcanoes, ~~and~~ most volcanoes per square kilometer.

Focus

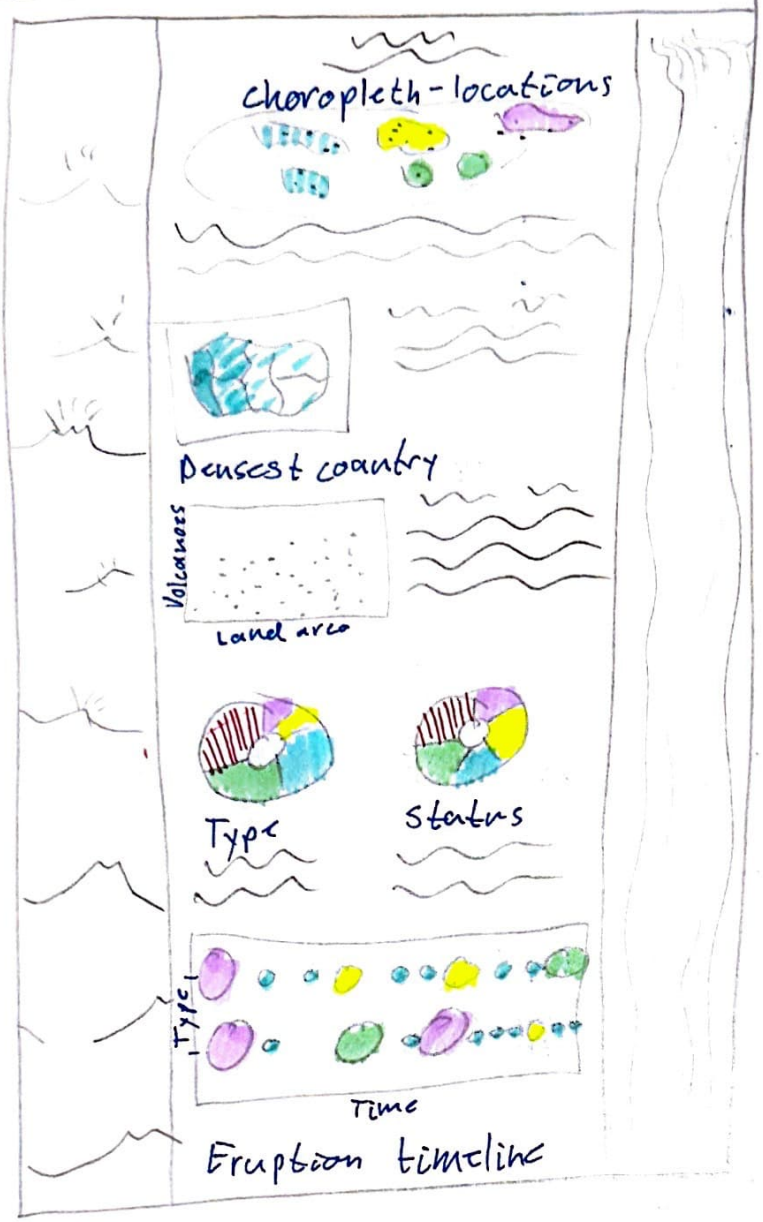
- This layout focuses on having as much information being displayed by the idioms.
- There is no singular focus, more just having as many idioms/diagrams to describe our raw data, as well as the connections between the different attributes.
  - "Most explosive volcanic eruptions" will be the final diagram of the vis, and as such should be the culmination of each catagory
    - Location, Explosivity, Time, Type
      - Coloured for each country
      - height
      - horizontal distance
      - shape/ Mark.

Discussion

Pro: Hits all the categories outlined in the inital ideas page, and has a dedicate diagram for each of them.

Con: No annotation means that many critical analysis is left up to the reader, which isn't going to end up with everyone being well-informed
  - To get full understanding from diagrams, you need some context & results.

Layout



Title: Final layout for Vis 2
Author: Jesse Hodgson
Date: ~~16~~ 16/10/2025
Task: Create a webpage for volcanoes
sheet: 5

Operations

- Choropleth
  - ↳ To display inputted ~~lat~~ coordinates and mark with discrete points on map, coloured for each continent.
- Cartogram
  - ↳ Displaying the densities of volcanoes for parts of the country with highest density, or most volcanoes
- Scatterplot
  - ↳ Display the density of all countries.
- Radial charts
  - ↳ Displaying the relative amount of each type & status of volcano around the world.
- Bubble timeline
  - ↳ Display the highest-level-scientific data of VEI & timeline, while sorting by Types of volcanoes.

Focus

The focus of this layout is truly about flow of the webpage and making something that the average person can learn from:

1.) Starting with some general, overarching information (location)
2.) Get more ~~easy~~ country specific, go deeper into the next level ~~&~~
3.) Some general information on specific attributes about volcanoes

Detail

- Data transforming
  - ↳ To have some forms of data such as density, or relative ~~sum~~ share of Type or status may require transforming some data.
- Dependencies
  - ↳ Github repository — Making sure webpage has every link required to appear correctly on the ~~web~~ repository.
- Time to build.
  - ↳ 2 hour data collection & transformation
  - ↳ 14 hours to make visions
  - ↳ 4 hours to explain and make HTML