IDEAS

damage_des
- pie chart
- categorical (limited, moderate, severe, others)
- quantitative : occurrences

④

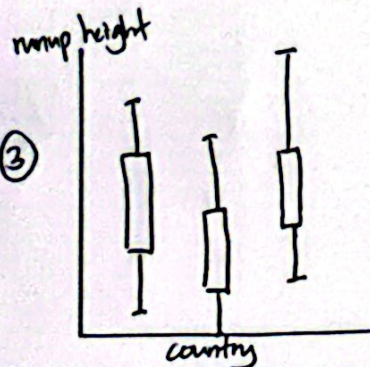## year, country

- choropleth map
- calculate by the num of occurrences of tsunami
- filter by years

① world map
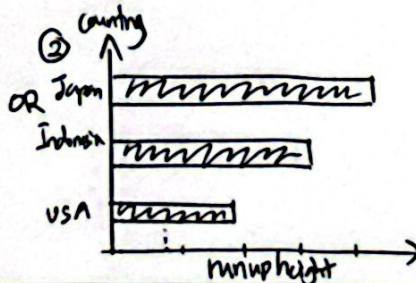   quantitative : occurrences
   nominal : country

- shows minimum, first quartile, median, third-quartile, and maximum runup height for each country

runup height

③

runup height [feet]

- integers
- shows the few top highest runup height in the history and its country
- if possible, filter by country region

(Europe, North & South America, Asia, Africa, Pacific, Middle East)

② country
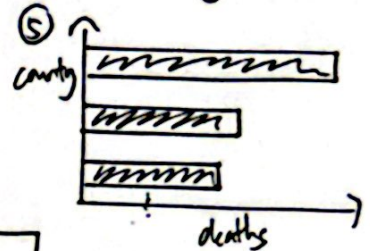OR Japan
    Indonesia
    USA
                runup height

deaths
- signifies country with highest death caused by tsunami

⑤ country
              deaths

causes

10 different causes
- use word cloud

⑥   Landslide
   Earthquake
Volcano   ...

- or ½ pie chart

⑦   Colour legend
          Earthquake

FILTER

⇒ To visualise runup_ht, its better and more intuitive to use box plot (more info shown)

⇒ Remove damage_des chart because not really showing informational data

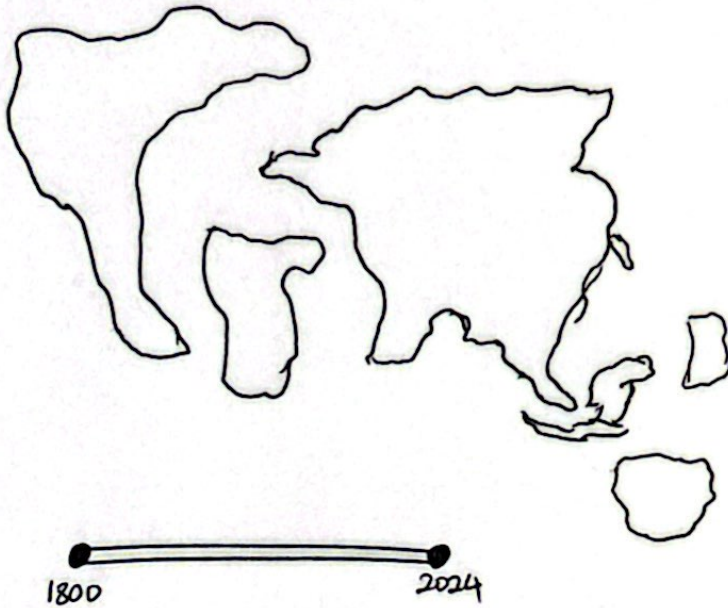⇒ Choose word cloud for causes
   - more intuitive

CATEGORIZE

① Total Occurrence of Tsunami across the world
   - choropleth map
   - filter by year range

② Distribution of tsunami heights for each country
   - box plot

③ Top deaths caused by tsunami by country
   - horizontal bar chart

④ Causes of tsunami
   - word cloud

COMBINE & REFINE

① quantitative occurrences
   ⇒ help user to understand which countries has most occurrences of tsunami

② runup height (feet)
   visualise min, 1st quartile, median, 3rd quartile, max of the runup height of tsunami occurred in that country

③ country with cumulative most deaths ranks on top
   deaths
   ↳ immediate shows which country has most deaths

④ Volcano ...
   Earthquake
   Landslide
   shows the dominant cause of tsunami across the years

LAYOUT

1800 — 2024

OPERATIONS

=> quantitative : occurrences
  ↳ number of times the country name appeared
  ↳ since the dataset is recorded by each tsunami event occurred

=> uses gradient colour coding
  ↳ highlights country with most tsunami happened

=> sliding filter
  ↳ more simpler way of visuals to represent to users
  ↳ add interactions

=> hover & tooltip
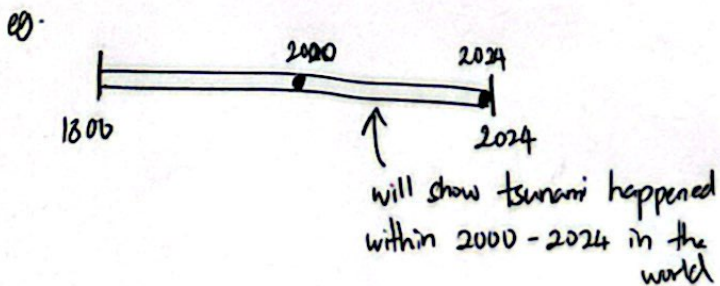 ↳ shows specific detailed information when user's pointing

FOCUS

=> aims to visualise countries and its tsunami occurrences across the year

colour coding : blues
  ↳ more occurrences : darker blue

filters : sliding filter year range
  ↳ let user choose which range of year they want to see

eg.

1800 — 2000 — 2024
↑
2024
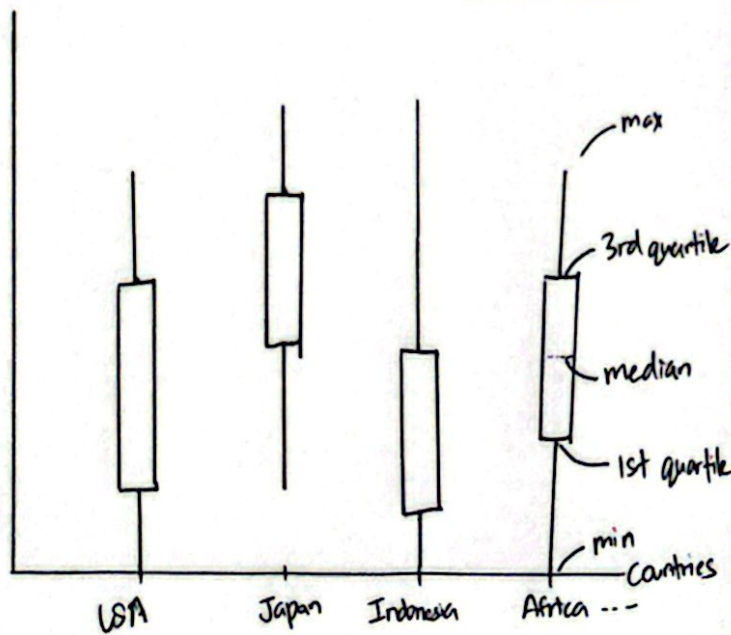will show tsunami happened within 2000 - 2024 in the world

DISCUSSION

⊕ the use of colour intensity makes it intuitive for users to quickly identify regions with more frequent tsunami events

⊕ effective at showing regional patterns eg. around the Pacific "Ring of Fire", where seismic activity is high.

⊖ might unintentionally give more visual weight to larger geographic areas especially with lower number of tsunami occurrences.

LAYOUT

Run-up Height (feet)

Countries ▽

- max
- 3rd quartile
- median
- 1st quartile
- min

Countries

USA   Japan   Indonesia   Africa ---

OPERATIONS

=) Dropdown multiple choices menu: filtering countries that wanted to be shown

=) Hover & tooltip: to display detailed information

FOCUS

Search ▽
- ☑ Top 10 (default)
- ☐ Australia
- ☑ Malaysia
- ☐ Thailand

→ multiple choice dropdown menu filter

↳ avoid showing too much data at once, causing overlapping

=) aims to focus on showing how tsunami run-up heights are distributed for each country.

=) helps users compare median & variability of run-up heights across different countries
  ↳ quickly identify high-risk countries

=) identify countries where run-up heights are highly variable (wide boxes) & more consistent (narrow boxes)

DISCUSSIONS

⊕ Box plot's ability to highlight outliers - exceptionally high or low tsunami run-ups

⊕ provides compact summary of distribution of run-up heights, including the median, quartiles, and outliers.
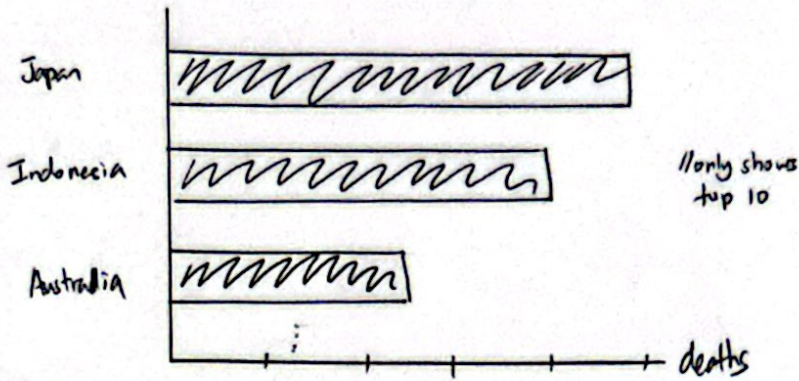
⊕ provide great side-by-side comparison of distributions between different countries

⊖ if too many countries are plotted, box plot can become over-crowded

⊖ less intuitive for non-experts where they might not familiar with box plots and find it challenging to interpret specific data

| LAYOUT |

①

Japan

Indonesia

Australia

// only shows top 10

deaths

②

LANSLIDE   ...

EARTHQUAKE

...   VOLCANO

| FOCUS |

chart① : - focuses on ranking the <u>top 10</u> countries
that have experienced the highest number
of deaths due to tsunamis.

- understanding human impact of tsunamis
- highest death ranks at the top
(decreasing order)
 ↳ provides visual priority

chart② : - visualises relative frequency of different
causes of tsunami

- larger words represent more frequent causes

- giving instant impression of which events
are most responsible for generating tsunamis.

Title :   Country with top 10
deaths caused by tsunami &
Causes of tsunami

Date : 6 October

Sheet : 3

Task : Horizontal bar chart &
Word cloud.

| OPERATIONS |

⇒ Hover & tooltip : to see detailed
information

⇒ uses colour coding to
better distinguish different countries
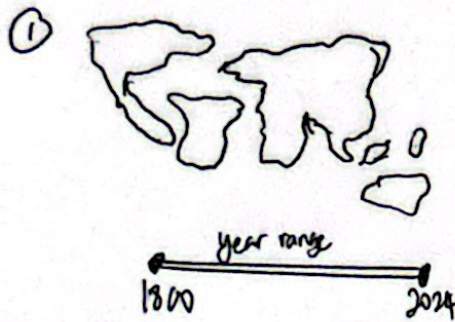for horizontal bar chart

| DISCUSSIONS |

Chart ①

⊕ easily digestible data, providing an
immediate sense of scale & ranking
as each bar length directly corresponds
to the number of deaths.

⊕ focus on most affected regions (top 10)
allowing users to grasp easily

⊖ limited to only showing top 10 countries
 ↳ ease of visualing

Chart ②

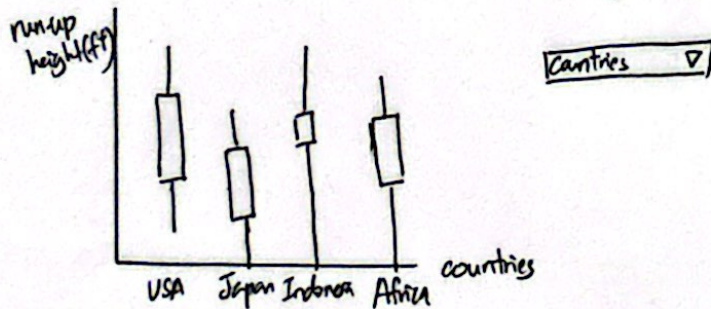⊕ simple & quick to grasp

⊕ ideal for qualitative comparison

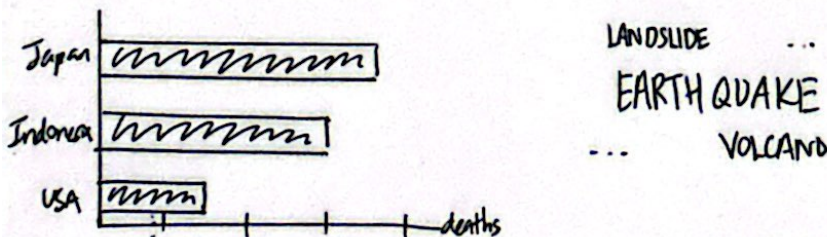⊖ do not provide precise numerical
differences between causes
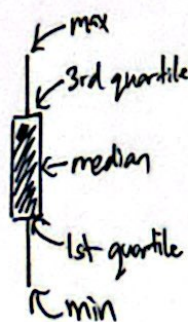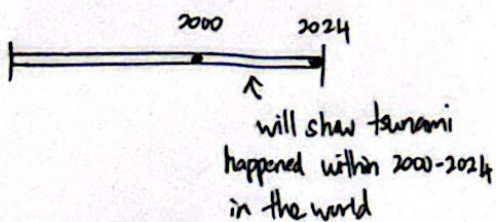
| LAYOUT |

Total Tsunami Across The World

①

year range
1800   2024

② Distribution of Tsunami Heights (top 10)

runup height (ft)

| Countries ▽ |

USA   Japan   Indonea   Africa   countries

③ Top 10 Countries Deaths Caused by Tsunami's   ④ Causes of Tsunami

Japan ▭▭▭▭▭▭
Indonea ▭▭▭▭
USA ▭▭
deaths

LANDSLIDE   . .
EARTHQUAKE
. . .   VOLCANO

| FOCUS |

2000   2024

↑
will show tsunami happened within 2000-2024 in the world

← max
← 3rd quartile
← median
← 1st quartile
← min

Search Countries ✓
- ☑ Top 10 (default)
- ☐ Australia
- ☑ Malaysia
- ☐ Thailand

← box plot by default shows top 10 occurrences

↳ users can choose desired countries to show but not all

| OPERATIONS |

⇒ 1 sliding year range filter in choropleth map ①

⇒ 1 multiple choice dropdown menu filter ②

⇒ Hover in any point of data will show tooltips with detailed information on that specific region

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| DETAIL |

⇒ Estimated 30 hours to build

⇒ Dataset aquired from data.world

⇒ Need to ensure that datasets are cleaned & structured correctly before parsing datasets to the code

⇒ colour coded lines and segments for easy identification

⇒ Uses VegaLite