

L IDEAS

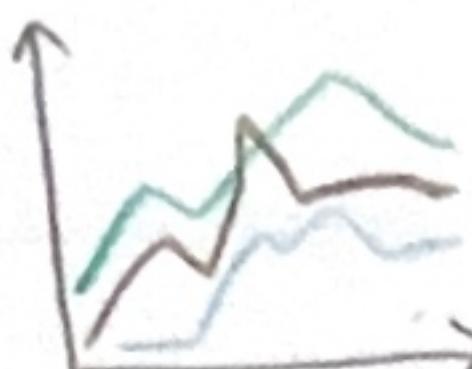
① Map

- choropleth map showing relative flood severity

- proportional symbol map showing flood numbers

- dot map showing density of flood events

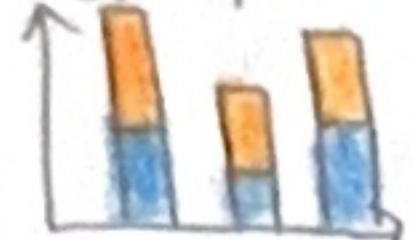
② multiple line chart



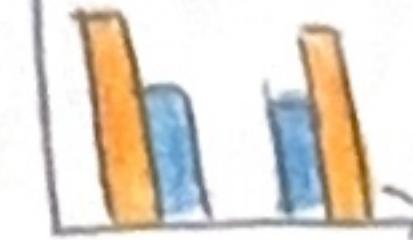
③ bar chart



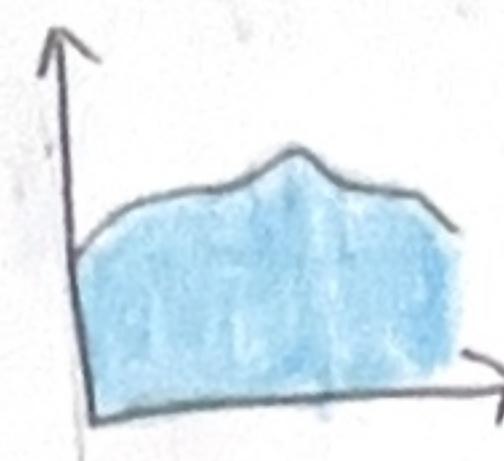
④ stacked bar chart



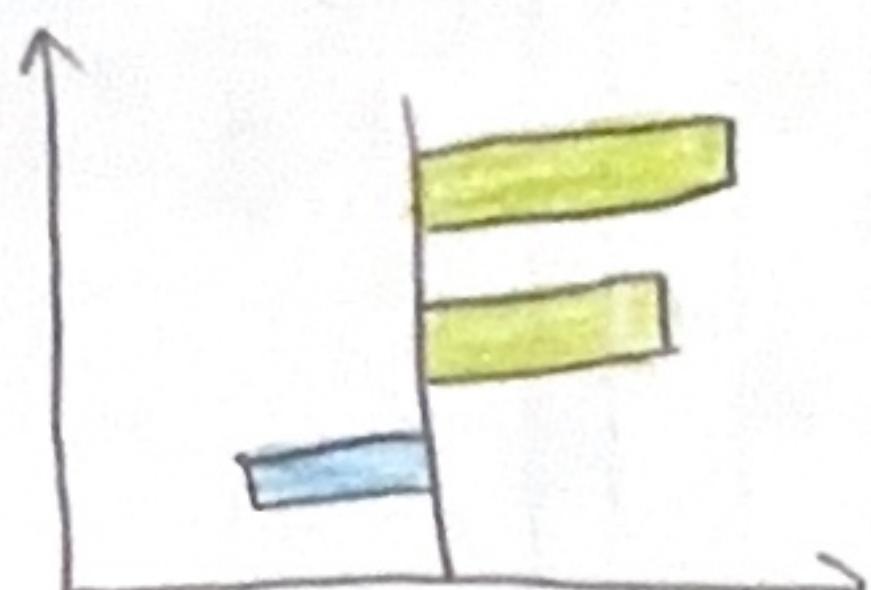
⑤ grouped bar chart



⑥ area chart



⑦ diverging bar chart



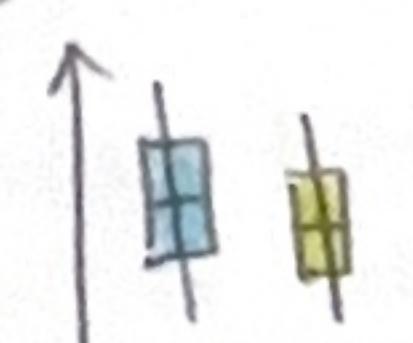
⑧ donut chart



⑨ pie chart



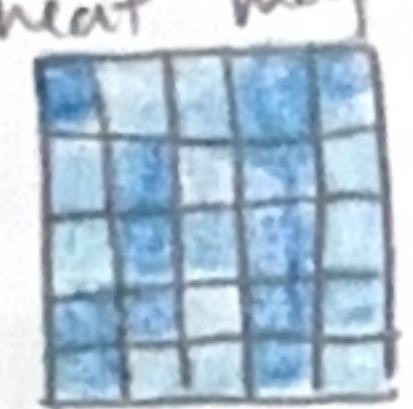
⑩ box plot



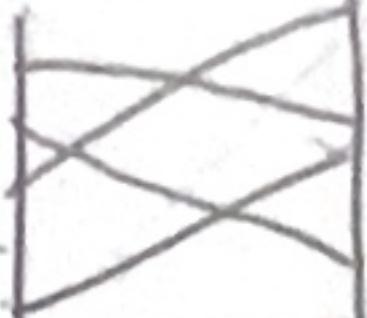
⑪ bubble chart



⑫ heat map



⑬ slope chart



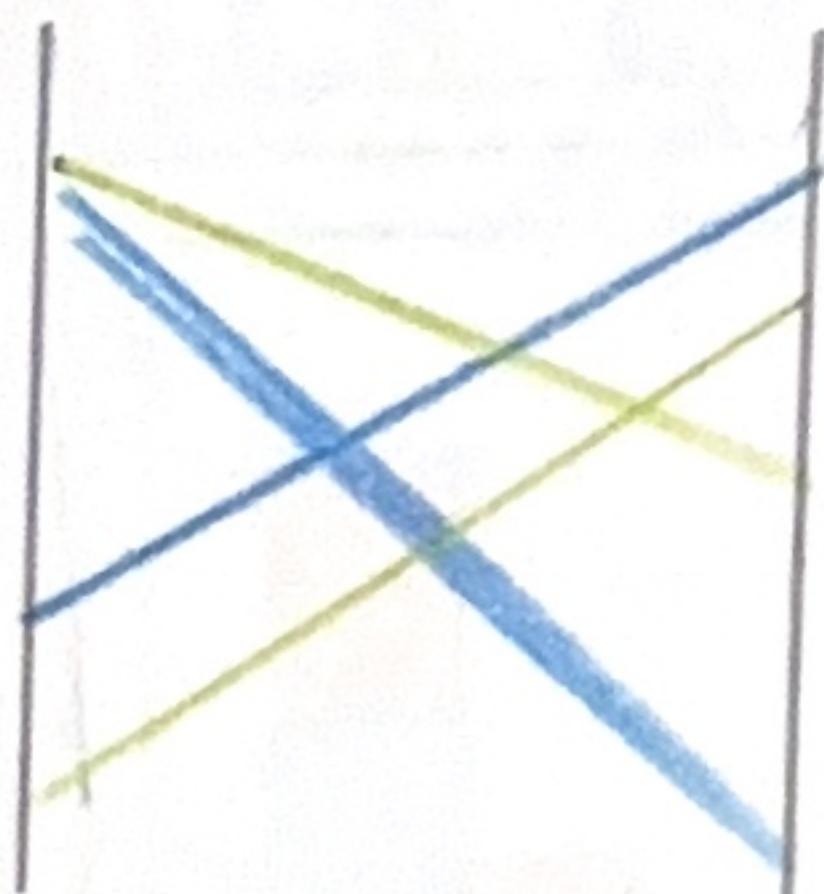
FILTER

① Pie chart



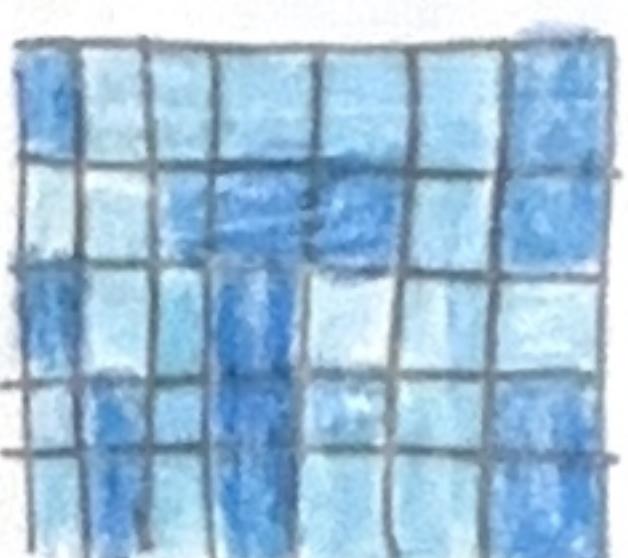
Pie chart will be divided into too many portions as there are 16 states. Not very suitable if there are so many portions.

⑭ Slope chart



Although showing the increase or decrease for different years, not able to show more relevant details. Need to rely a lot more on tooltip.

⑮ Heatmap



Showing all data for 12 months and each day will be too crowded. Only showing data for months doesn't seem very meaningful for comparison.

CATEGORISE

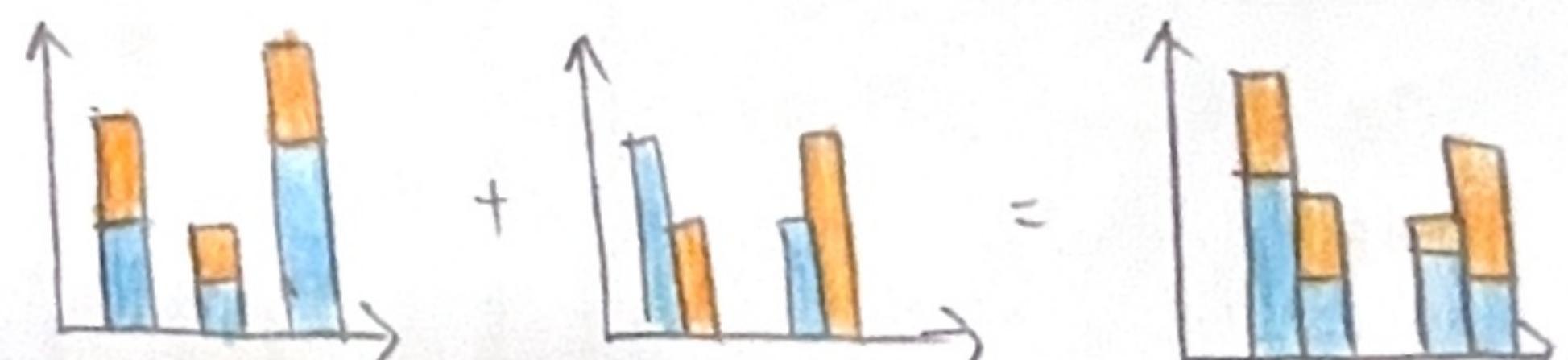
②, ③, ⑩, ⑪: Could be used for showing rainfall data across Malaysia states over different years

①: Big picture comparison on flood events

⑧, ④, ⑤, ⑦: Could be used to show the total losses caused by flood events

COMBINE AND REFINING

④ + ⑤:



Stacked bar chart could be used to show the composition of different losses and then grouped into years according to states, showing both details in total losses and also composition of losses.

⑯ Refine to only highlight a few lines that stands out and put other lines gray to improve visual hierarchy.

⑰ Normalising data or adjusting the scales of the legend to enhance comparison

QUESTIONS

① Is the combination of chart balanced, avoiding duplication while still covering all aspects from the data?

② Is the use of idioms suitable and for the storytelling?

③ Will the box plot be hard to interpret for readers?

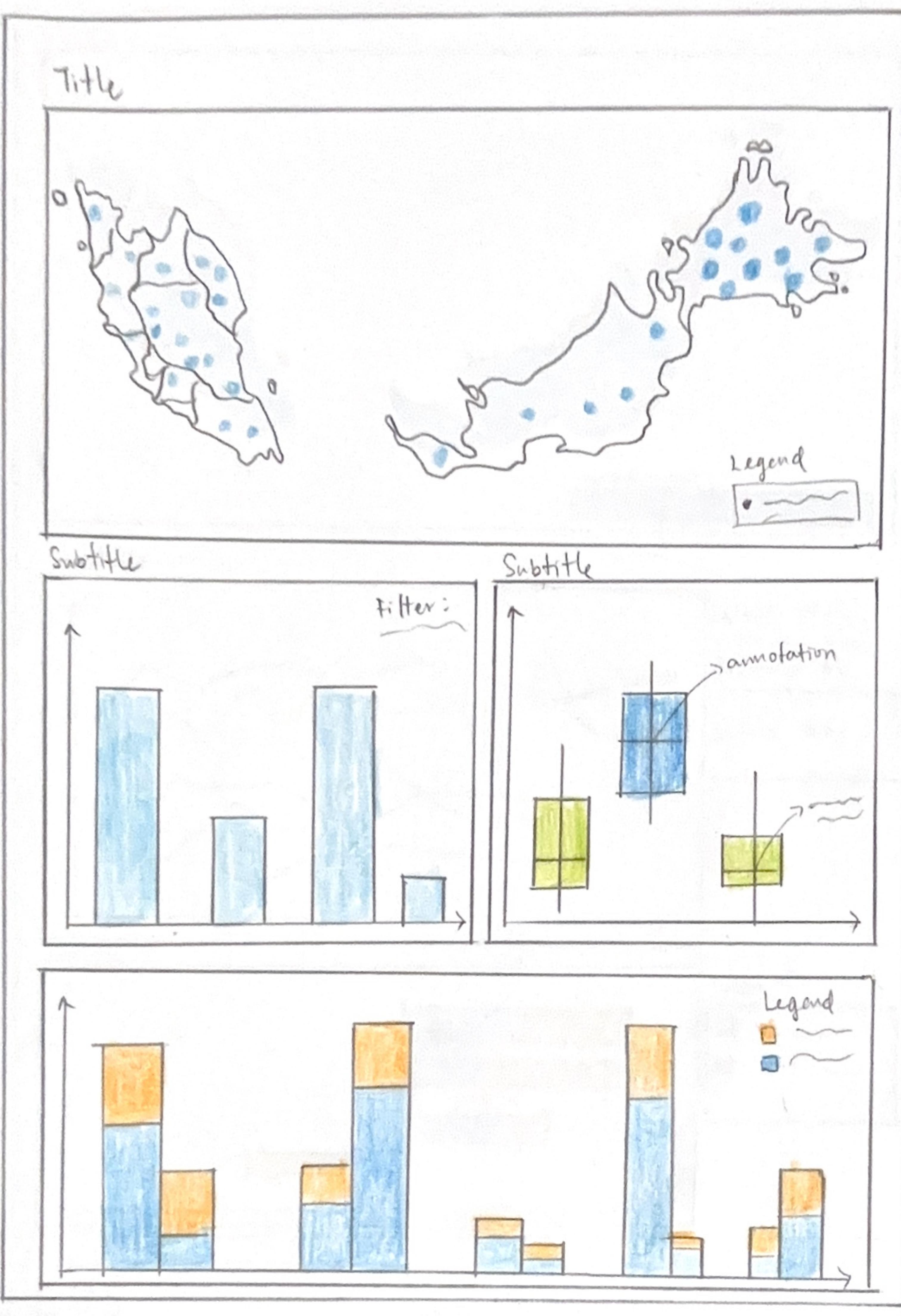
Author: Huen Yee Ching

Date: 9/10/2025

Sheet: 1

Task: Planning visualisations

LAYOUT



FOCUS

- 3 main focus:
- ① number of floods across states
 - ② monthly rainfall + rainfall variability
 - ③ conservation loss and emergency loss
- ①: dot map
 - each dot represent a flood event
- ②: bar chart + box plot
 - bar chart showing monthly total rainfall for selected year and state
 - add annotations to show monsoon seasons
 - box plot showing the average daily rainfall variability across years
- ③: grouped stacked bar chart
 - each group showing losses in year 2022 and 2023
 - each stacked bar shows the composition of different losses

Author : Huan Yee Ching

Date : 9/10/2023

Sheet : 2

Task : Planning dashboard

OPERATION

Filter:

- ① dropdown filter for bar chart to select state
- ② dropdown filter for bar chart to select years

Tooltips:

- ① show tooltips when hovering on charts

Annotations:

- ① add useful annotations on box plot and bar chart

DISCUSSION

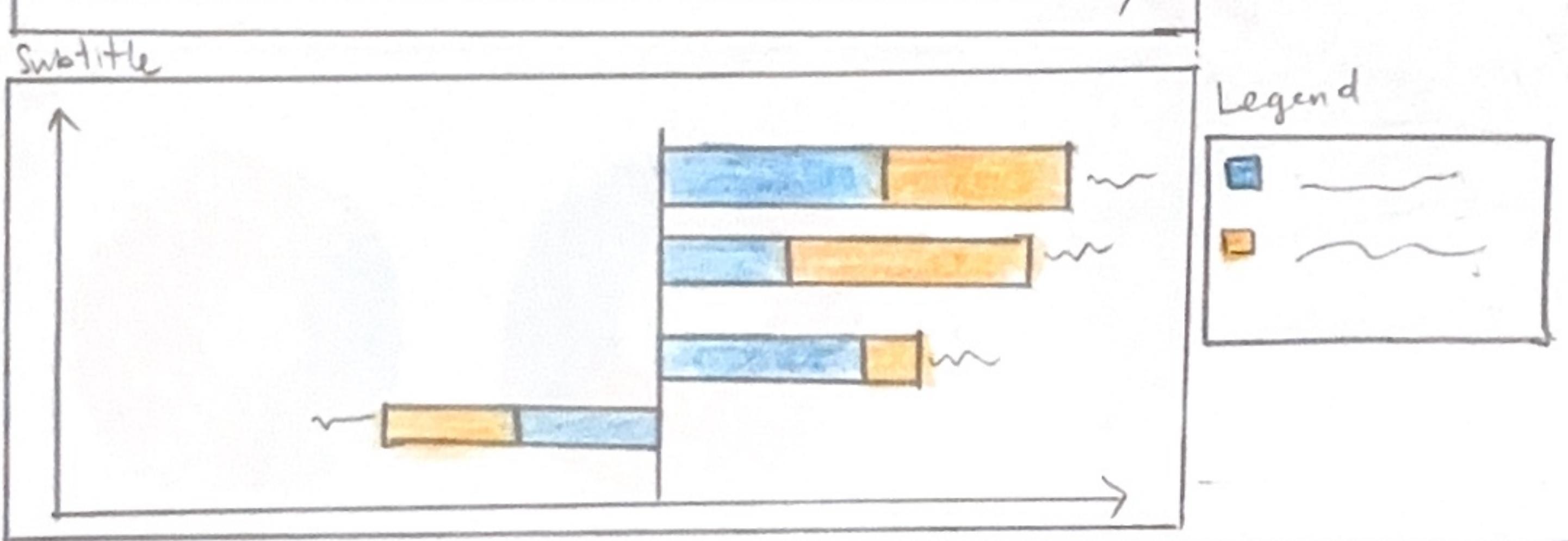
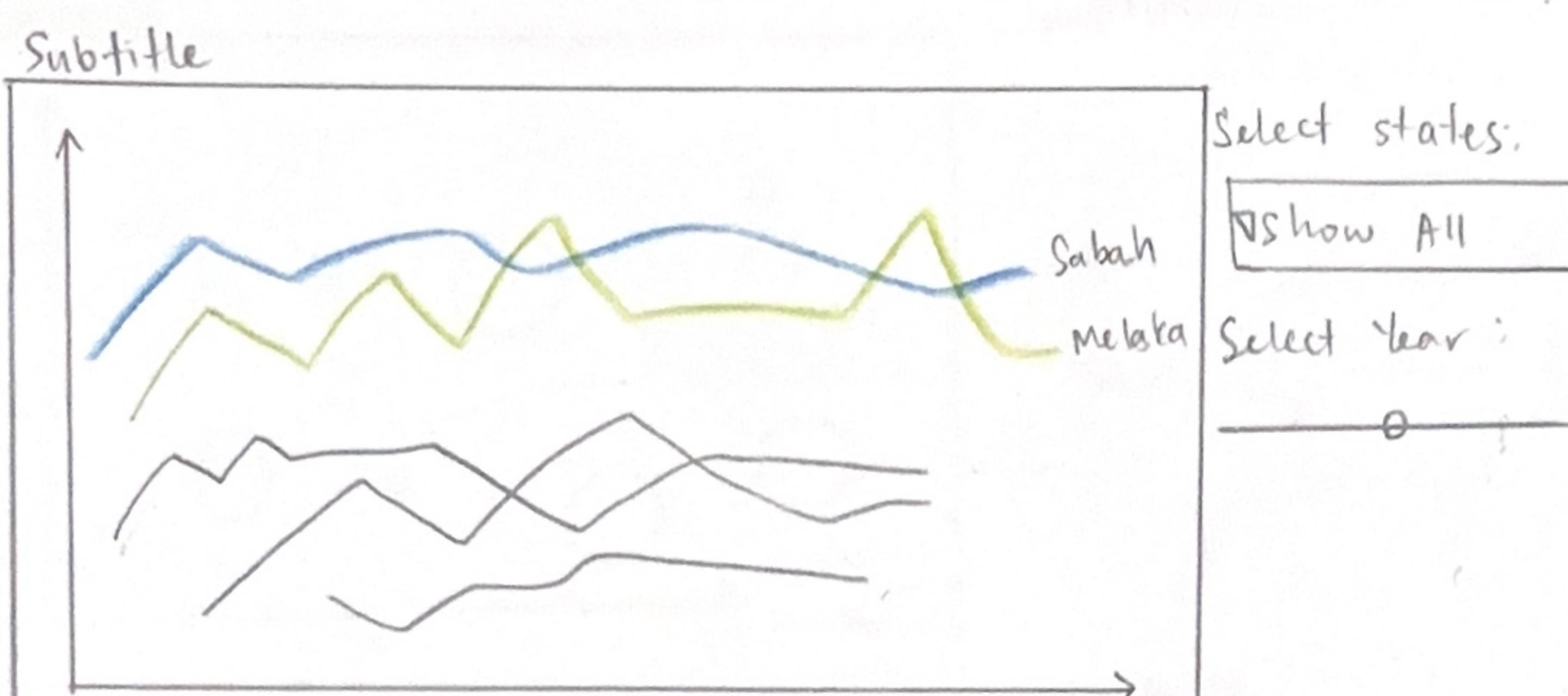
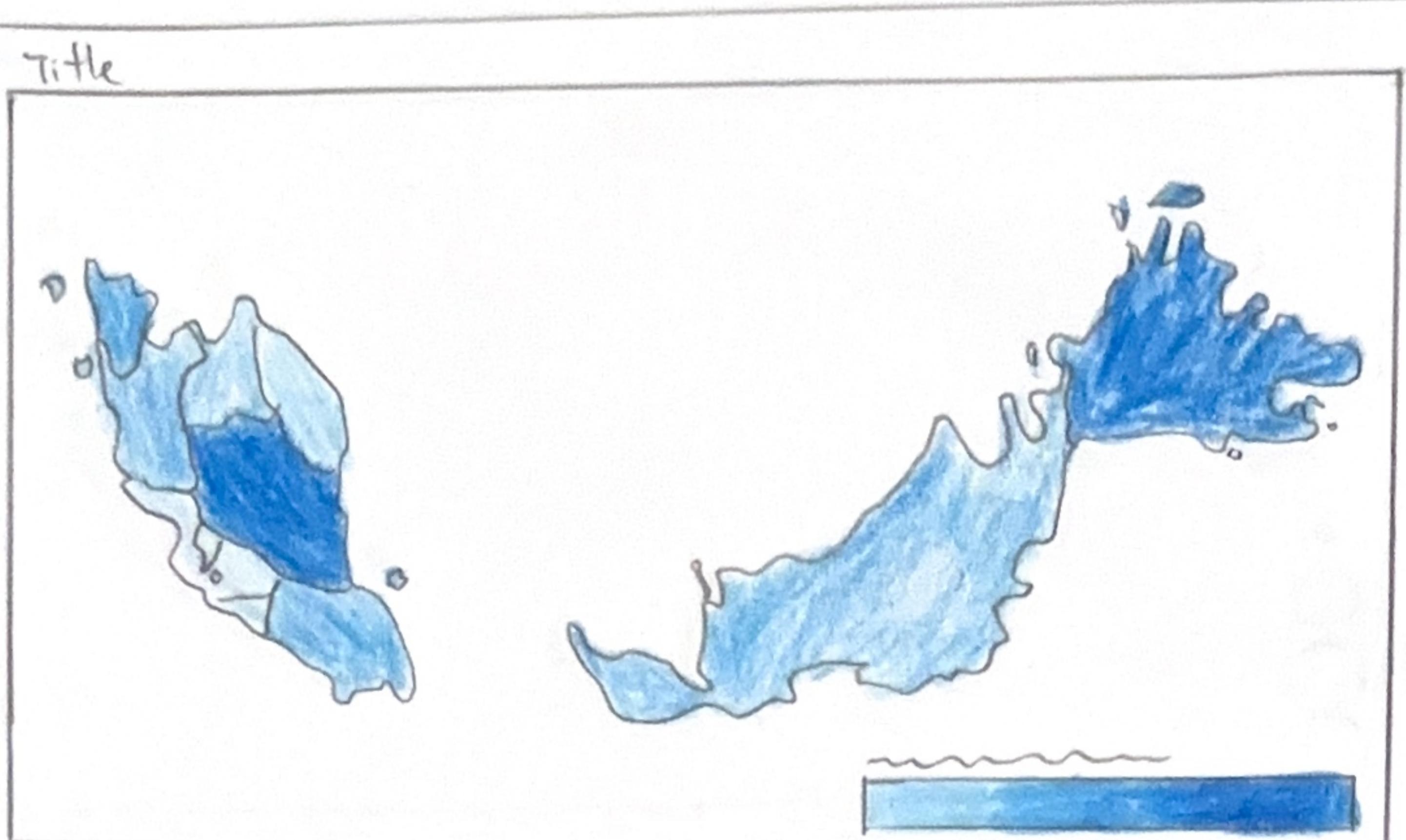
Advantages:

- ① density of dots in map allows easy comparison on the number of flood events happened
- ② bar chart + box plot showing both the detail in monthly rainfall data and variability of daily average rainfall over years.

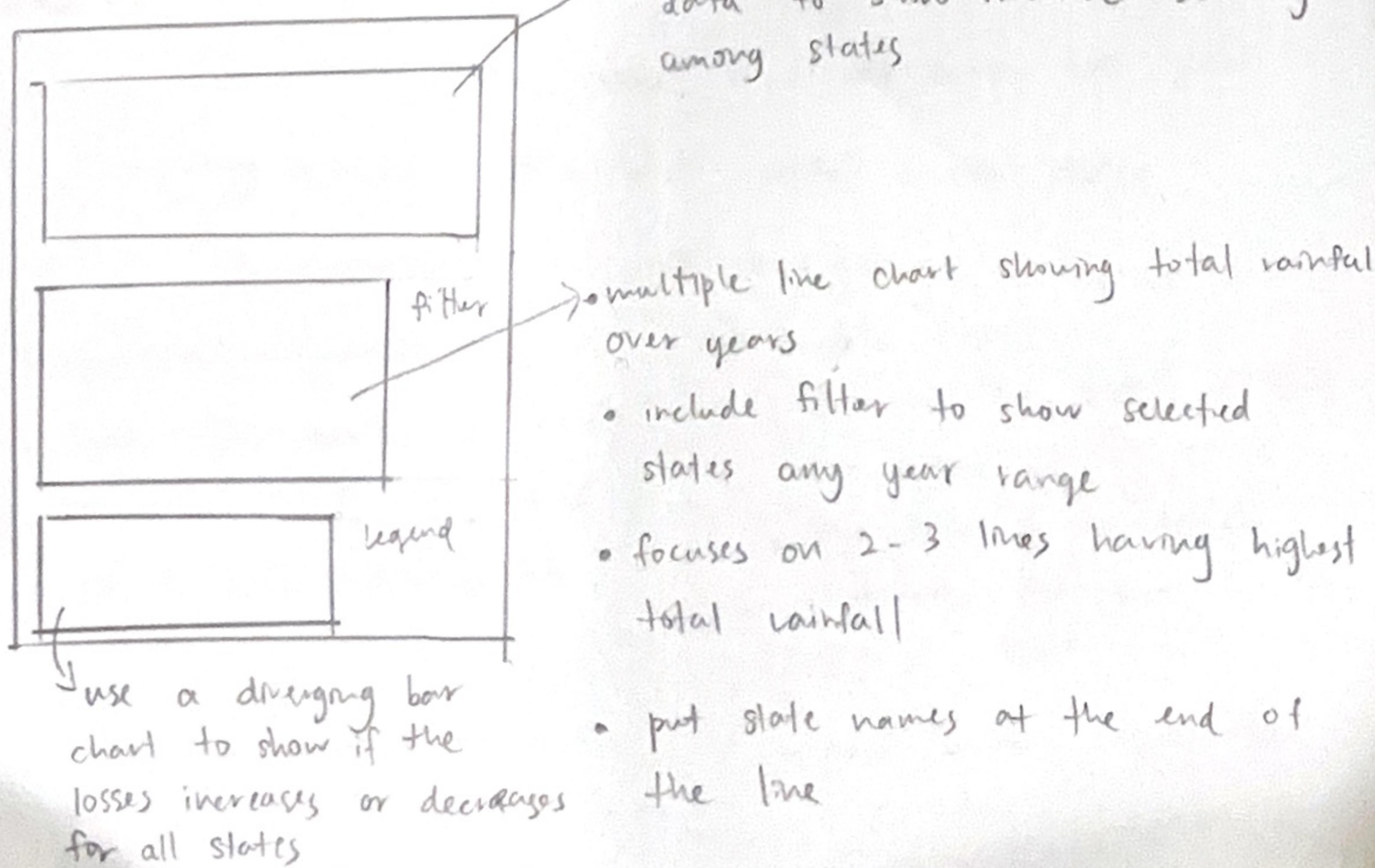
Disadvantages:

- ① using both bar chart and grouped stacked bar chart might be repetitive
- ② box plot might be harder to interpret

LAYOUT



FOCUS



Author: Henn Yu Ling
Date: 10/10/2025

Sheet: 3
Task: planning dashboard

OPERATION

Filter:

- ① dropdown filter for line chart to select states
- ② year range slider for both line chart

Tooltips:

- ① show useful information on hover

Annotation:

- ① Add annotation on line chart to show serious flood events
- ② Annotating trends in losses in diverging bar chart

DISCUSSION

Advantages:

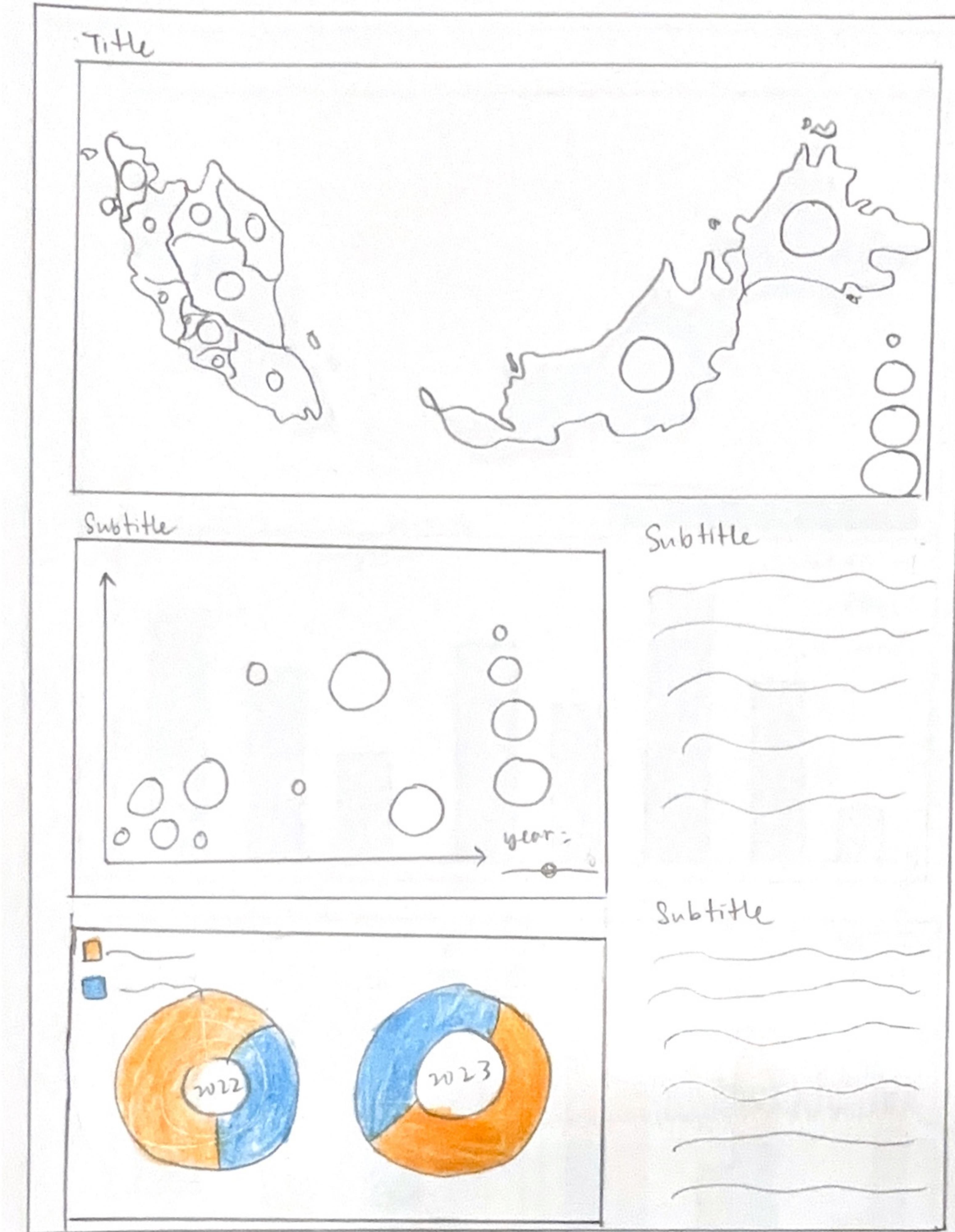
- ① choropleth map can show relative flood severity in states instead of just raw numbers

- ② diverging bar chart can clearly compare the losses in year 2022 and 2023.

Disadvantages:

- ① multiple line chart might be too cluttered since there are 16 states
- ② multiple line chart does not show the monthly rainfall which might be less meaningful

LAYOUT



FOCUS

- 3 focuses:
- ① showing total number of floods across the years
 - ② showing monthly total rainfall across states
 - ③ conservation loss vs emergency loss

①: Proportional Symbol map

- shows the number of floods for each state over years
- size of circle indicates the number of floods

②: Donut chart

- comparing conservation and emergency loss for year 2022 and 2023

② Bubble chart

- showing the total rainfall for years
- The size of the bubble indicates the amount of rain in that year
- each bubble represents a state

Author: Henn Yee Ching

Date : 10/10/2025

sheet : 4

Task : Planning Dashboard

OPERATION

Filter:

- ① year range slider for rainfall bubble chart

Annotations:

- ① adding annotations on map to show key insights.

- ② adding annotations on bubble chart to show special findings.

Tooltips:

- ① when hovering show details according to charts.

DISCUSSION

Advantages:

- ① The three charts form logical narrative:
number of floods →
total rainfall over years
→ losses due to floods.

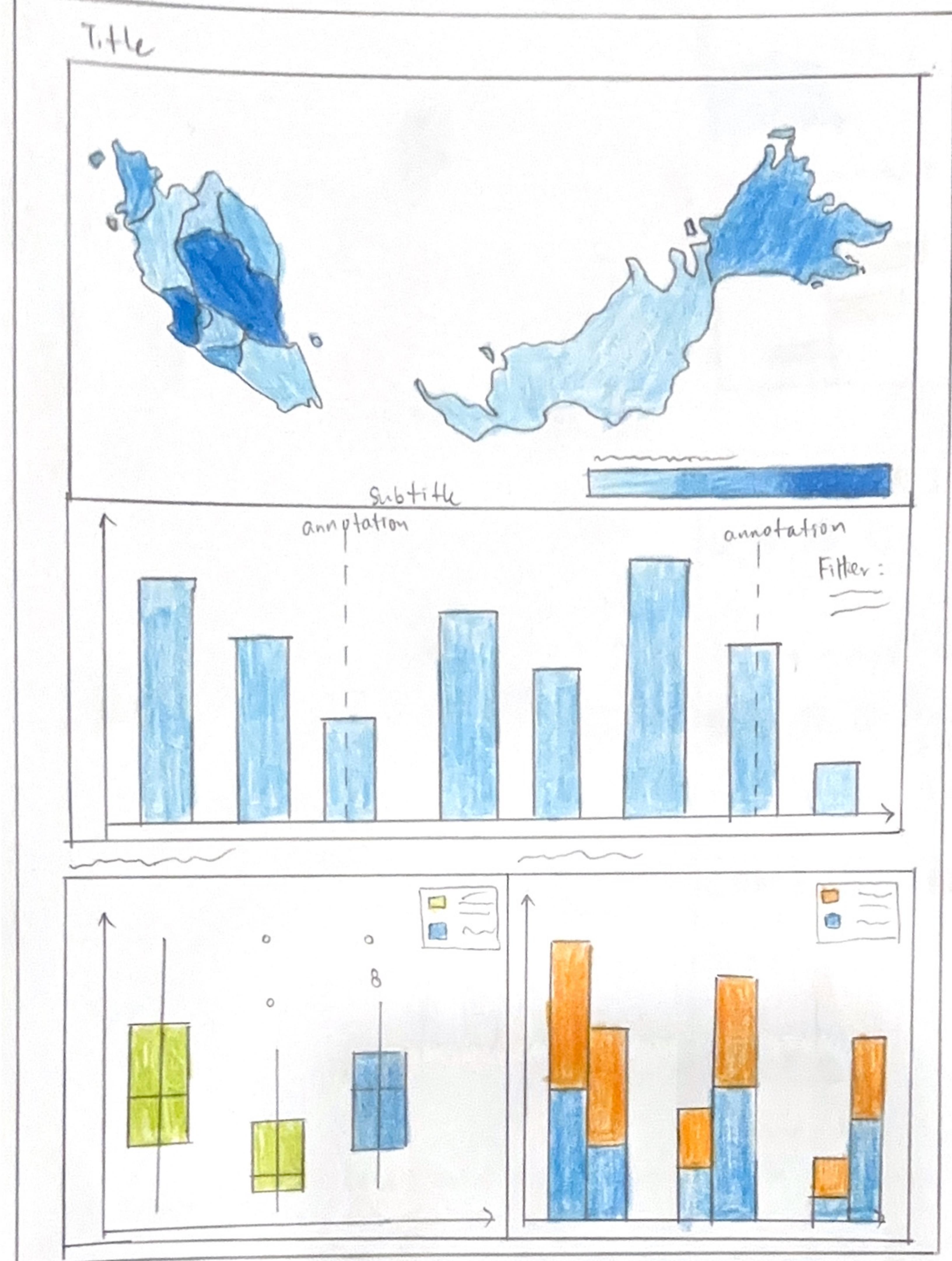
- ② Filters provided allows interactive flexibility

Disadvantages:

- ① The bubble chart might be cluttered when several states is having similar total rainfall

- ② Donut chart is only showing the losses for Malaysia, not showing losses per state, lacking details for trends in each state.

LAYOUT (Based on sheet 2)



FOCUS

- 2 main focus:
 - ① floods severity and rainfall variability
 - ② flood conservation VS emergency loss
- includes annotation on the start and end of monsoon season to provide more information on rainfall
- separate the states into 2 groups (monsoon affected, less affected) for box plot
- using grouped stacked bar chart to compare the conservation and emergency losses

Author: Huen Yee Ching

Date: 10/10/2025

sheet: 5

Task: Final Design

OPERATION

- annotation on key insights

Interactivity:

① Selecting a state on the map shows corresponding bar chart below.

② Dropdown year filter for bar chart

③ Hovering on a state in the map shows a black border to highlight the state.

Tooltips:

- use tooltip on each chart to display useful information.

DETAILS

Dependencies:

- Excel for preprocessing data
- Vega-lite for creating visualisations.
- VS Code for creating and styling website

Time and effort estimations:

- Data preprocessing (1 day)
- Building visualisations (2 - 3 days)
- Creating website and embedding visualisations (1 - 2 days)
- Styling website and adding text descriptions (1-2 days)