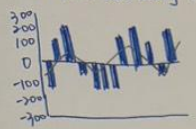
IDEAS

① rainfall anomaly line chart



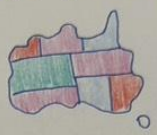
② drought severity map

③ water-storage trend line chart

④ stacked bar chart (total national water stored by year)

⑤ rainfall heatmap

⑥ states - ranking (average drought & average water level)



Filter

- maps → due to repeated datasets, remove states ranking or drought severity map.
- chart → remove storage trend line chart, I can improve it (use the data) to bar chart.

- combine drought map + storage trend → clearer climate relationship
- filter by states → show both rainfall and water storage.

CATEGORIZE

INTRO

- show rainfall seasonality (line chart)(heatmap)

DETAIL

- show every states avg drought and storage water level (map)(bar chart)

REFINE

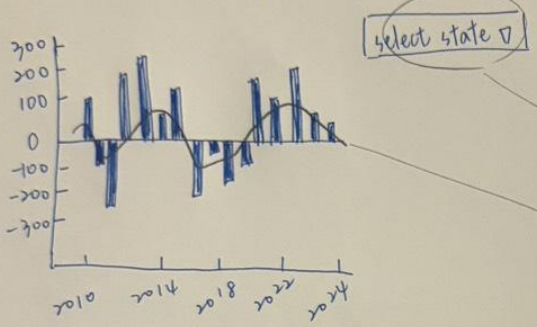
- from introduction of rainfall and drought severity to sumarize national storage and avg water level
- refine: ① keep the color consistent ② make sure the dataset can apply filters such as states, year.

QUESTION

① Does the design clearly show how rainfall affects water storage?
② Which visual type best conveys yearly change (map? line?)
③ How can interactivety help users see patterns more easily?
④ should water-storage levels be shown as percent full or actual volume (ML)?

LAYOUT

Title: How Drought impacts Australia's water storage (2010 - 2025)



Rainfall Anomaly per state over time

Drought severity in Australia

FOCUS

☆ goal: connect spatial drought severity with temporal rainfall fluctuations.

Viewers can see:

- Where drought is most severe
- When rainfall drops below average.
- How different states respond to dry years.

→ Click select state → to see different rainfall amount in different states.

→ Display year and value

→ Highlight drought severity index

→ tooltip with state name + index + rainfall anomaly

→ recolour map for that year

OPERATIONS

→ Hover a state on map → see drought severity + rainfall (mm)

→ Click state → highlight its line on chart

→ Drag slider (2010-2025) → update map colors.

DISCUSSION

✔ visual appeal through colour and interaction

✔ meets requirement for a geographic map

✘ rainfall & drought indices may overlap.

✘ line chart may get busy with too many states.

AUTHER:

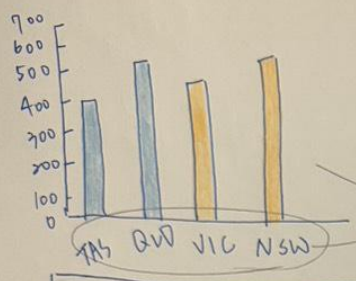
YI-HSUAN, WENG

DATE:

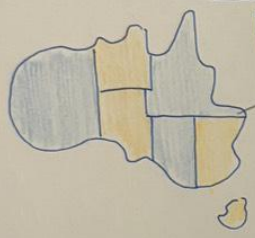
16/10/2025

LAYOUT

Title : "Compare drought & rainfall by state"



Average rainfall v.s. drought



select year

drought severity

state	1st Dry	2nd	3rd	Avg rainfall
VIC	2019	2014	2020	-60 mm
NSW	2019	2017	2020	-75 mm
QLD	2019	2018	2013	-80 mm
TAS	2016	2018	2020	-30 mm

ranking table

FOCUS

☆ goal : Compare regions and observe patterns of droughts and rainfall.

- Enable users to see which states are most affected in dry years.
- Map + bar + table gives both overview & detail.

Click states → highlight maps & bars for that states

Hover bar → show state nam, rainfall, and drought index.

dropdown filter → choose year.

OPERATION

→ Hover over a map → show rainfall anomaly + drought level.

→ Click a state → highlight its bar and table rows

→ Dropdown filter → choose year to update all visuals.

→ Hover bar → tooltip with exact rainfall + drought score.

DISCUSSION

✓ show multiple years and states in one view for easy comparison.

✓ allow ranking and filtering

✗ bar color may hard to differentiate.

✗ slightly complex design.

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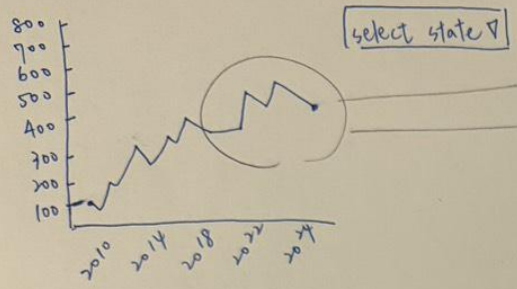
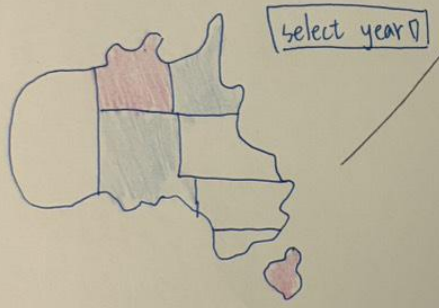
LAYOUT

Title : "Australia's drought journey 2010-2025"



National average rainfall



yearly map panels

FOCUS

★ illustrate how drought developed, peaked, and eased over time.

→ shows the average rainfall amount.

→ Highlight dry years in different colors

for example, → 2014 : beginning of drought (orange east)

→ 2019 : widespread drought (severe : red)

→ 2024 : partial recovery (blue)

OPERATION

→ scroll down : progress through tim

→ Hover on map : tooltip shows state, rainfall anomaly, drought level.

→ tooltip : add key statistic (e.g. 2019 rainfall anomaly : -250mm)

DISCUSSTION

✓ easy for audiences to follow

✓ combine maps, timeline for storytelling

✗ needs a lot design effort, ensure readability on one page.

✗ may reduce interactivity.

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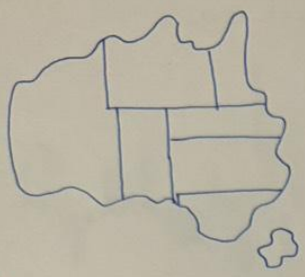
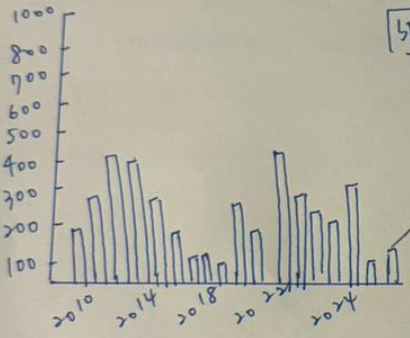
LAYOUT

Australia's Drought and Rainfall (2010-2025)



↑ Choropleth Map - Drought severity by state

SELECT STATE▽



↑ Rainfall Anomaly per state

FOCUS

deliver a responsive, interactive data story that shows how rainfall and drought changed across from 2010 to 2025, by using clean design, accurate data.

OPERATION

→ Hover state → tooltip (state name, rainfall, drought severity)

→ Click state → highlight line in chart

Dropdown → filter specific state view

→ Display value + state when Hover.

DETAILS

- Dataset → Bureau of Meteorology rainfall Anomaly dataset.
  Bureau of Meteorology Drought severity index (2010-2025)
- Vega-Lite vs - data visualisation library (JSON spec)
- Pure.css - page layout and responsive grid.
- Javascript
- GitHub
- Browser support : Chrom/Edge.
- File size < 1MB

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