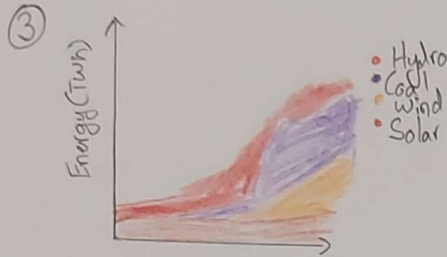
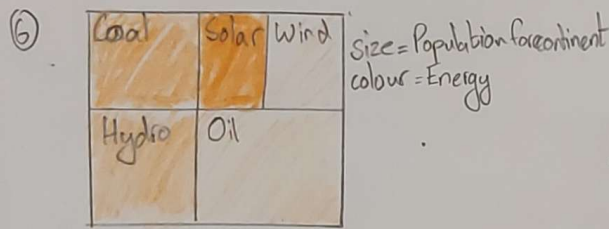


# Datasets

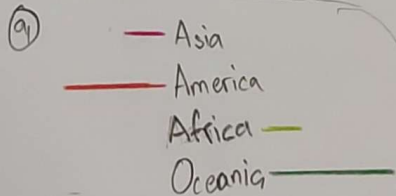
- 1) Primary Energy Consumption
- 2) Global primary energy consumption by source
- 3) Energy consumption by source
- 4) Per capita CO<sub>2</sub> emissions
- 5) Population



Area Graph  
Note: dataset 2



Treemap  
note: Dataset 3 & 5



Diverging chart  
Note: dataset 4

## FILTER

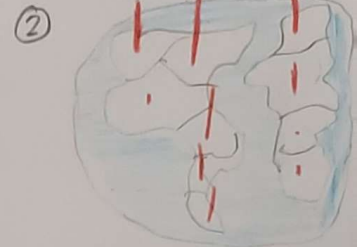
- ② Removed as ① conveys it better
- ⑦ Removed as ③ conveys it better without need of year slider.



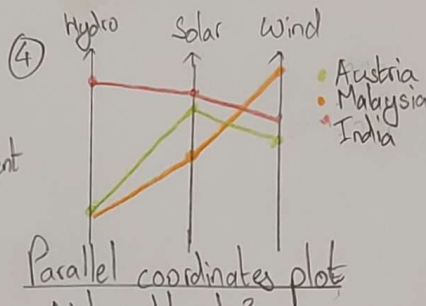
# IDEAS



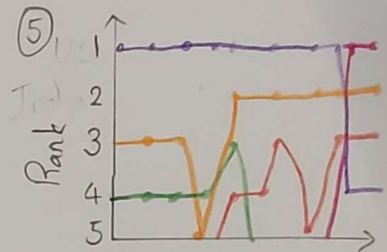
Choropleth Map  
Note: dataset 1 & 5



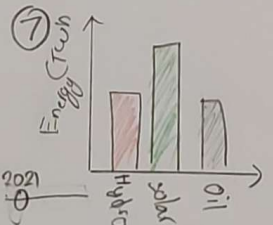
Proportional Map  
Note: dataset 1



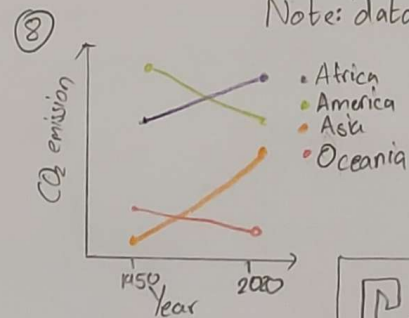
Parallel coordinates plot  
Note: dataset 3



Bump chart  
Note: dataset 3



Bar chart  
Note: dataset 2

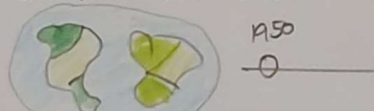


## COMBINE & REFINED

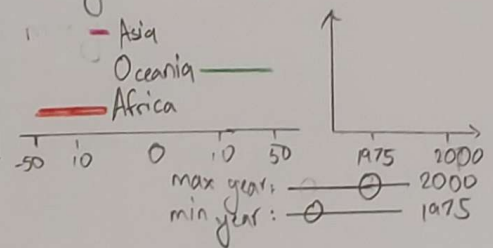
## CATEGORISE

- ①, ②: Geographical Map
- ③, ⑤, ⑧: Time based Trends
- ④, ⑦, ⑨: Comparative Trends

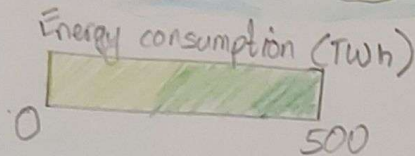
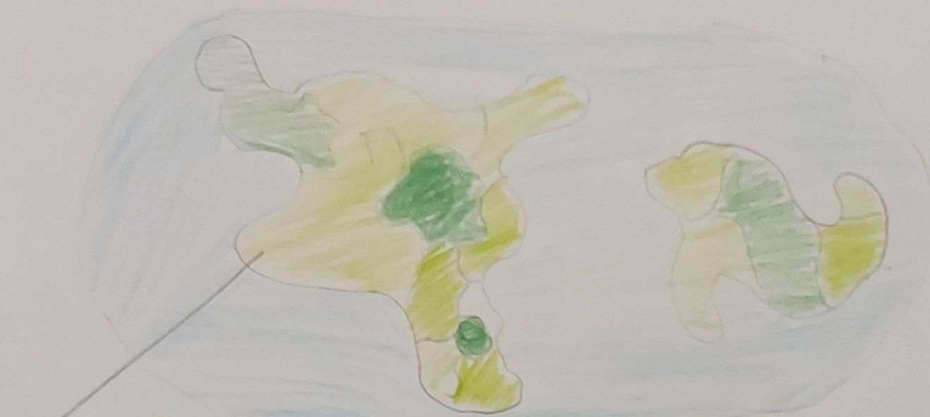
- ① can use normalised data.
- ① can have time slide



- ⑧ & ⑨ can use a time slider, allowing users to compare CO<sub>2</sub> emission from one year to next.



white colour means  
no data

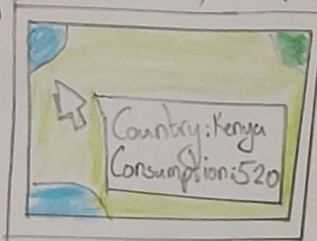


Year:  
1980

LAYOUT

Focus

when hovered, tooltip appears to



show  
Country &  
consumption

When  
year is  
changed



Name: Jobin Mathew Van  
Student ID: 32871953

Sheet: 2

Date: 15/09/24

Topic: Global Energy Consumption

Task: Show primary energy  
consumption by country.

## OPERATION

- Hover: Displays a tooltip with precise data values for each country at selected year
- Time slider: Allows user to select a year to focus on.
- Colour-coding: gradient to show energy consumption

## +VES

- + Interactive Analysis: Users can interact with chart to focus on certain years, making it engaging
- + Helps Identify outliers: Makes the anomalies more visible

## -VES

- The colour can cause confusion



Name: Jobin Mathew Pan

Student ID: 37871953

Sheet: 3

Task: Show energy consumption by source across years

Date: 16/09/24

## OPERATION

• Hover: Displays a tooltip with data about the country for that year

• Slider: Can select a year to focus on.

• Drop-down: Can select the source you want to check for

## LAYOUT + VES

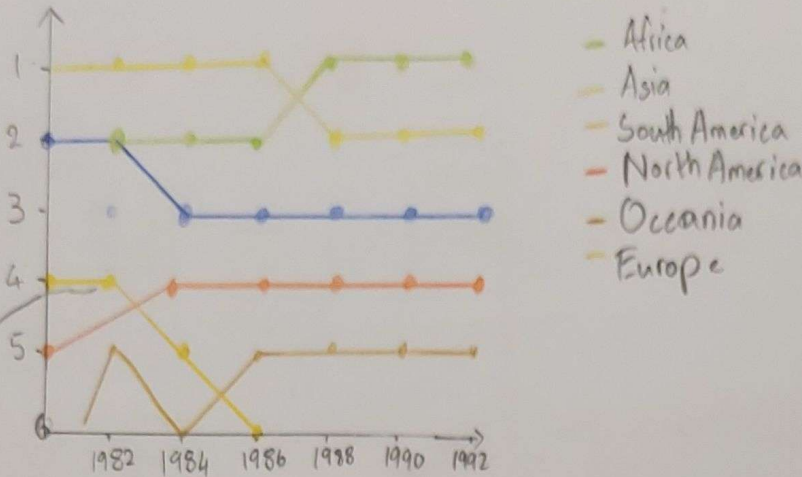
### FOCUS

+ Interactivity: Can interact with chart to focus on certain energy source.

+ See trends easier: Makes seeing <sup>what</sup> the group of continent has more supremacy in that Energy source

## - VES

- When more ranks, it gets very cluttered.

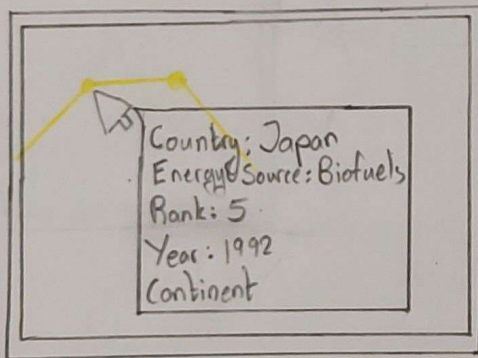


Ranks:

Energy Source:

Biofuels

When hovered, tooltip appears



Rank

3

The y-axis changes as Rank is changed

Biofuels  
Solar  
Wind  
Hydro

When changed energy source the rankings change

Terbong  
100 ↑

Date: 1980 — 2022

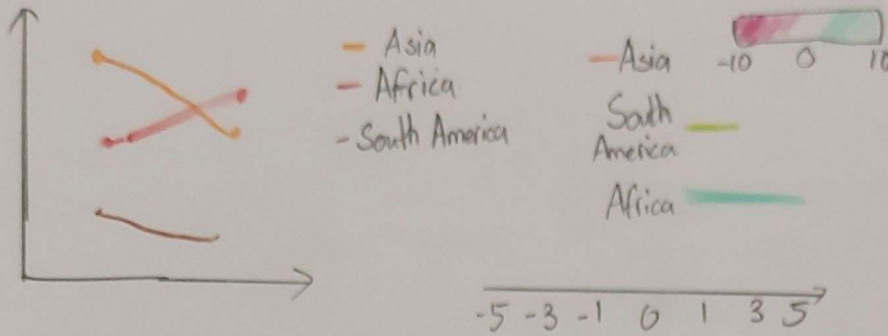
Student ID: 32871453

Name: Jobin Mathew Dan  
ID: 32871453

Sheet: 4

Task: Show Ranking  
of countries per  
energy consumption.

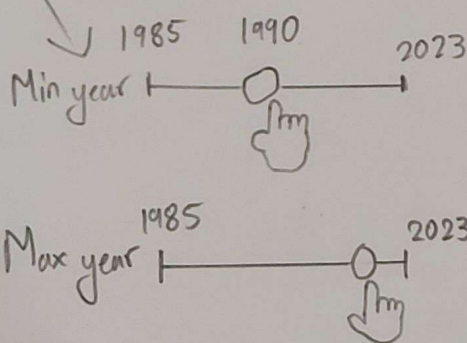
Date: 16/09/24



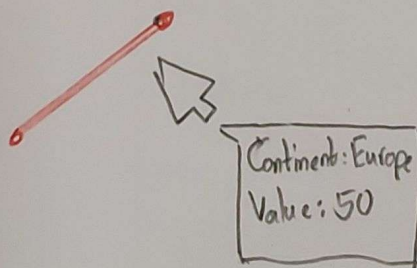
Min Year — 1990  
Max Year — 2020

LAYOUT

Focus



Hover & change the  
years, which changes  
both visualisation.



OPERATION

- Hover: Tooltip that displays the value.
- Colour coding: The diverging value, red means loss, white means close to 0, blue means gain.

PROS

- + Visual balance: Easy to spot change
- + Interactive: interact with slider to see different values

CONES

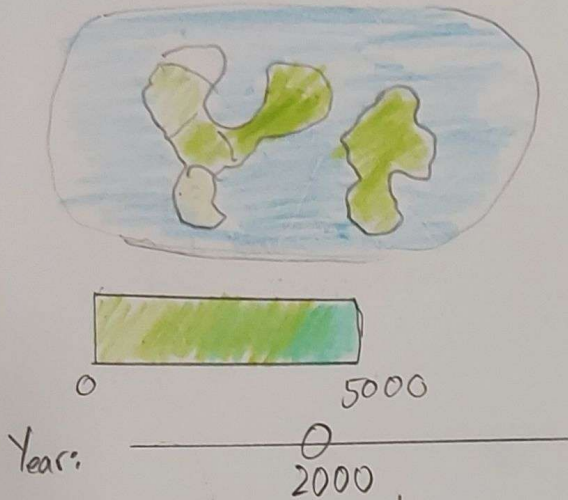
- Min & max year is separate sliders, causing inconvenience



# LAYOUT

Name: Jobin Mathav Dan  
Student ID: 32871953  
Sheet: 5  
Date: 17/09/24  
Topic: Global energy consumption.

## ① 1st Visualisation



## ② 2nd Visualisation



## ③ 3rd Visualisation

Biofuels ☐  
Rank: 05



## DESIGN

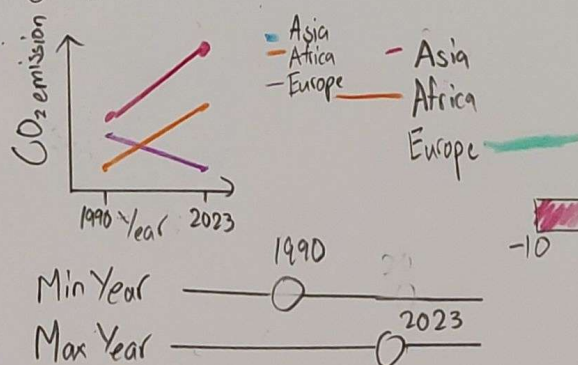
① Sets the tone of Global primary consumption and which country uses it more per population.

② Tells the tone of the what energy source is mostly used

③ Ranks the country that uses the most of the selected energy source.

④ Show impact of non-renewable energy sources

## ④ 4th Visualisation



# COMPONENT

- Interconnected filtering: Year sliders, dropdowns & legend filtering allows users to filter data across visualisations.
- Hover Interaction: Hovering over data provides tooltip with detailed information

# ESSENCE

- Enable users to uncover patterns, trends & correlation
- Provide a comprehensive, interactive analysis about Global energy consumption.