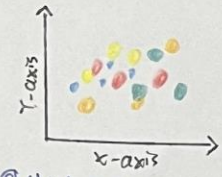
IDEAS

Title : Electricity Across The World
Author : Chai Jun Jie
Date : 1/10/2024
Task : Planning sheet : 1

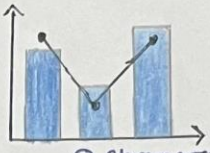
① Choropleth map / Proportional Symbol map

② Bubbleplot

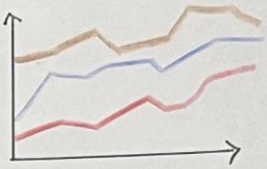


③ Pie Chart

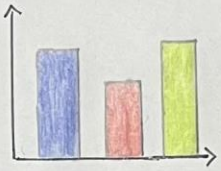
④ Bar and Line Chart



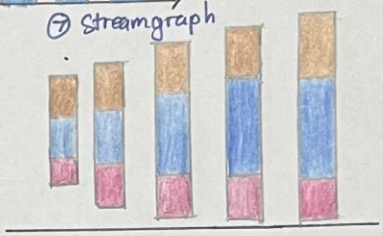
⑤ Line Chart



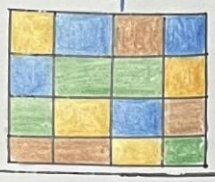
⑥ Bar Chart



⑦ Streamgraph



⑧ Heat map



FILTERS

② Bubbleplot
- Size of circle might provide false information to users

④ Bar and Line Chart
- Similar to streamgraph but provides less information
- Too clustered if many data

⑥ Bar Chart
- Too similar to streamgraph, but requires more bar to represent more data

CATEGORISE

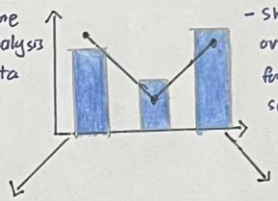
Electricity Consumption Across the World
- Choropleth map

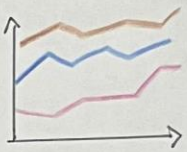
Source used to generate electricity
- Pie Chart
- Line Chart

Electricity consumption by Sector
- Line Chart
- Streamgraph

COMBINE + REFINE

- To have more in-depth analysis of the data
- Shows the trend over the years for several sources / sectors





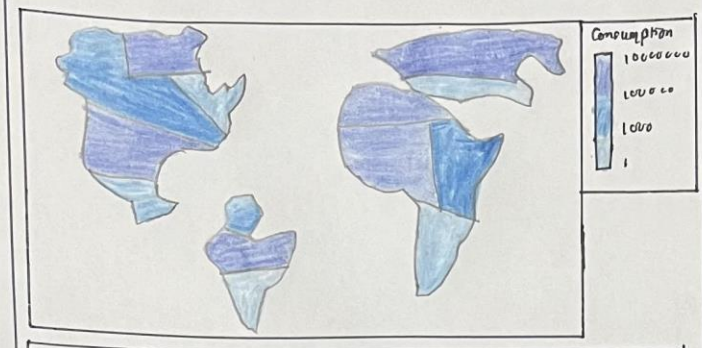
QUESTION

- Should the choropleth map be the main visualization?
- Does these visualization provide sufficient information to users?
- Are there other visualization idioms that are more suitable to represent the data?

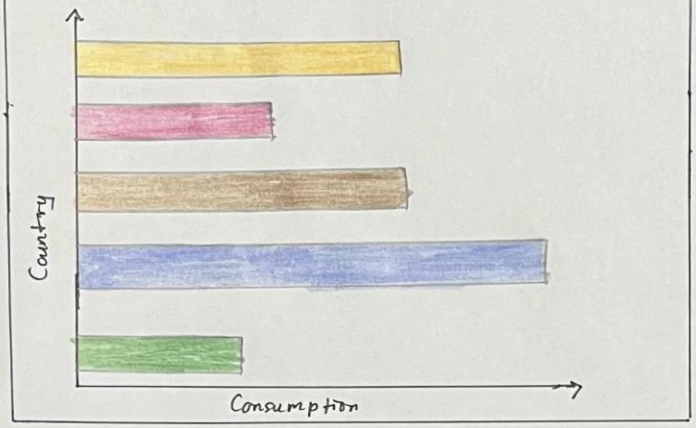
LAYOUT

electricity / consumption / statistics / world .com

Electricity Consumption Across The World



Brief Explanation / Description



Title : Electricity Across The World

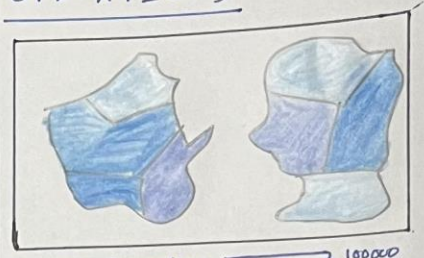
Author : Chai Jun Jie

Date : 9/10/2024

Task : Statistic for Electricity Consumption (Website)

Sheet : 2

OPERATIONS



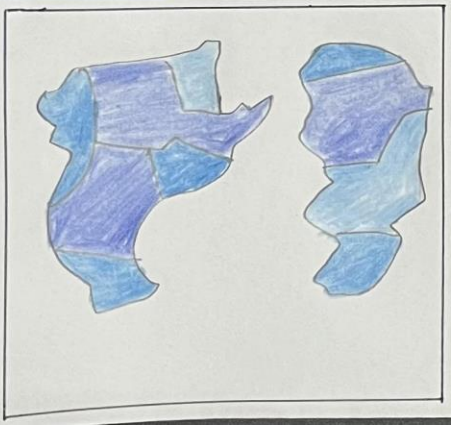
Electricity Consumption : 100000

Zoom : 4 25

Map Centre : centre

- Electricity consumption and zoom slider allows users to categorise countries within a certain range for electricity consumed, while the zoom slider allows users to zoom in and out of the map.
- Drop down option allow users to select a specific continent on the map.

FOCUS



- Different shades of colour allows users to identify countries with high and low electricity consumption throughout the years.
- Provides a map instead of a chart or plot to help users to better understand the data.

DISCUSSION

Advantage :

- Users are able to quickly identify countries based on their geographical knowledge
- Users are able to easily compare the total consumption based on the bar chart.

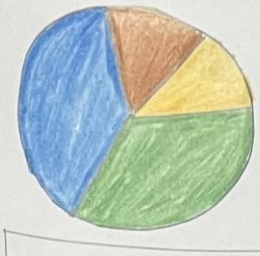
Disadvantage :

- Both visualizations only shows the total consumption of a country, users will not be able to analyze the overall trend of the consumption rate for further analysis.

LAYOUT

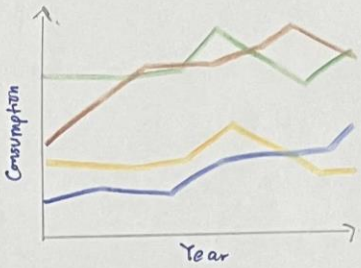
What are the sources used to generate electricity ?

MALAYSIA



Explanation

WORLD



Explanation

Title : Electricity Across The World

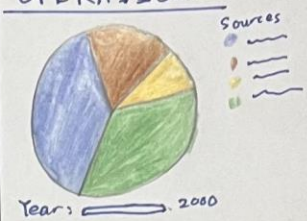
Author: Chai Jun Jie

Date : 9/10/2024

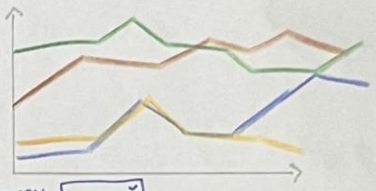
Task : Sources used to generate electricity (Malaysia and World)

Sheet : 3

OPERATIONS



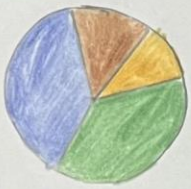
- Slider allow users to see how much electricity was generated in that particular year using that source.
- Users are able to click on the source in the legend to only display the electricity generated by that source on the pie chart



- Slider allow users to see the trend throughout the years of the electricity generated by every sources.
- Drop down option allow users to select a particular source to show on the line chart.

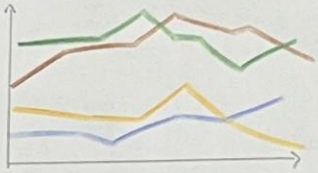
FOCUS

Malaysia



- Each colour represents a different source used to generate electricity.
- A slider will provide a better understanding on how much electricity was generated using that particular source.

World



- Each colour represents a different source used to generate electricity.
- Shows the trend throughout the years on how much electricity was generated through that particular source. Allow users to see what sources was used for recent years.

DISCUSSION

Advantage :

- Two interactive visualizations provides users a better understanding on what sources are more popularly used to generate electricity in Malaysia and World.

Disadvantage :

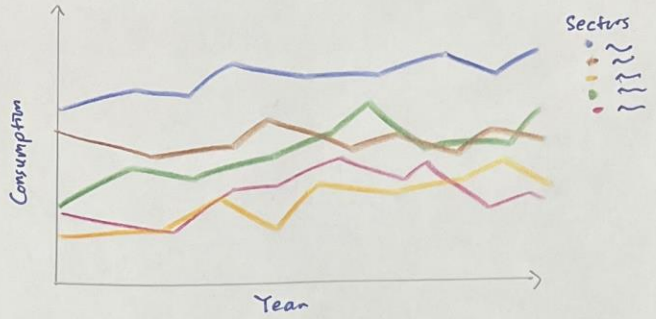
- Lack of text annotation and explanation, users might not be able to fully understand what the tree map means.
- Some users might find the bubbleplot too complicated.

LAYOUT

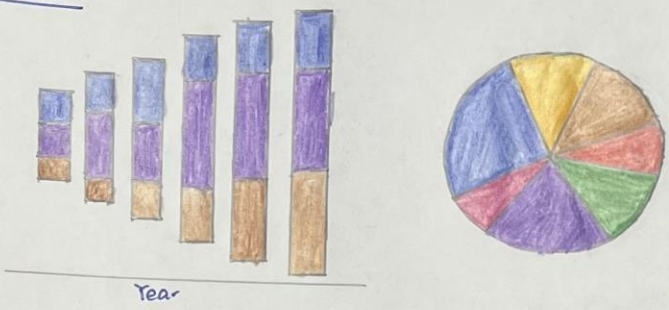
How Much Electricity Was Consumed By Each Sector?

Malaysia

Explanation / Brief description



World



Title: Electricity Across The World

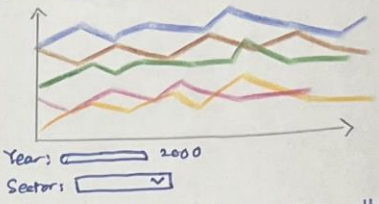
Author: Chai Jun Jie

Date: 10/10/2024

Task: Electricity consumption by Sector (Malaysia and World)

Sheet : 4

OPERATIONS

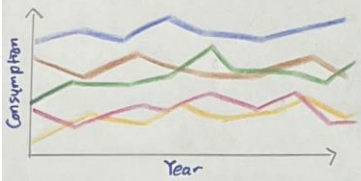


- Slider and drop down option allow users to better understand and analyze one particular sector through the years.

- Users are able to click on the sector to filter out the selected sector for displaying on the streamgraph.

FOCUS

Malaysia



- Each colour represents a sector in Malaysia
- A slider allow users to filter to the years intended for further analysis.
- A drop down option allow users to only display the intended sector in the line chart.

World

- Each bar represent total electricity consumption by all sector in that year, within the bar, each part represents a sector.
- Total consumption depends on the length of each part.

DISCUSSION

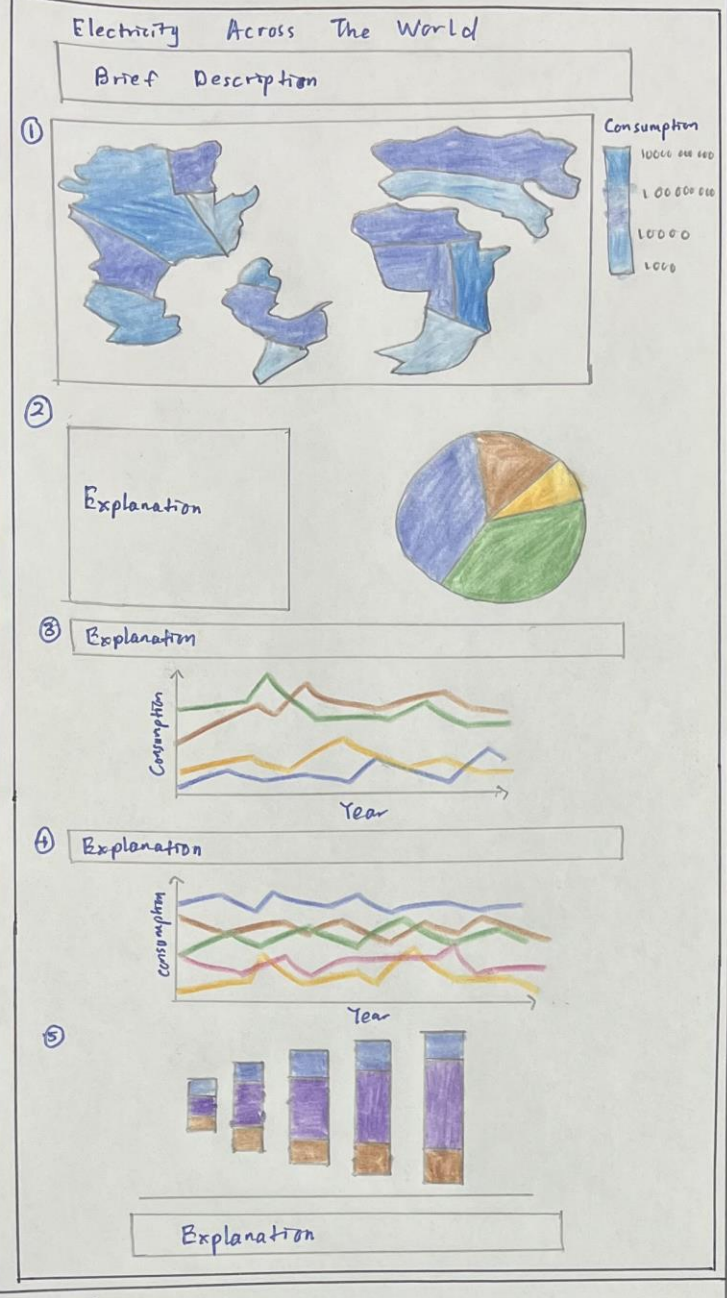
Advantage:

- Line chart is suitable to display the trend of electricity consumption by each sector throughout the years.
- Users will be able to compare multiple sectors within one chart.

Disadvantage:

- Pie chart is not a suitable idiom as there are too many sectors in the World. Sectors with low consumption only occupy a small percentage of the pie chart, reducing readability for users to understand the purpose of the chart.

LAYOUT



Title: Electricity Across The World

Author: Chai Jun Jie

Date: 13/10/2024

Task: Final design

Sheet: 5

OPERATIONS

① Choropleth map

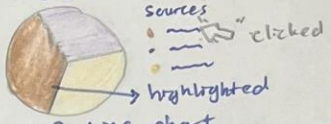
Electricity consumption : 1000000

Zoom : 125

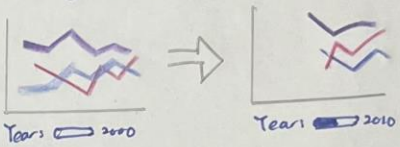
Map Centre :

- Users are able to interact with the slider to filter out and zoom in or out of the map

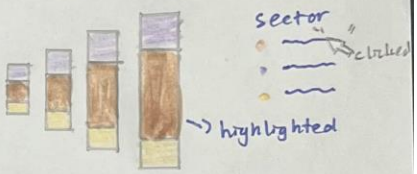
② Pie Chart



③ and ④ Line chart



⑤ Streamgraph



FOCUS

- All map and charts are equally important for users to understand the topic.
- Among all, the choropleth map would be the main visualization, as it provides the total electricity consumption by all country within the World map.
- Allow users to perform further analysis through other charts.

DETAIL

Visualization creation

- all visualization will be created using Visual Studio Code.
- vega lite editor will be used for better debugging.
- database will be cleaned manually.

Estimation of time

- data cleaning ~ 1 day
- creation of visualization ~ 1 week
- creating webpage containing all visualization created ~ 1 week