Title : Brain Storm

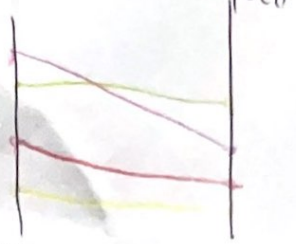
Auther : Ryuji Takamura

Date : 16/10/2024

Sheet : 1

Task: Generate ideas, filter, categorize, combine, refine & question.

④ Households using solid fuels



1980 slope chart 2010

Filter.

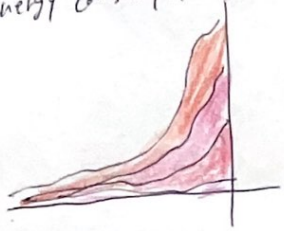
① For the energy consumption by country, there are a lot of missing value. It's hard to replace with another value, so simply put Data unavailable for better visuals.

For the scatter plot, it is better to add text annotation since the data is expressed as dots and it is hard to see the countries across year.

① Energy Consumption by Country

map.

② Energy consumption by source



area chart

③ GDP vs access to electricity

scatter plot

CATEGORIZE

Consumption

①, ②

Access

③, ④

COMBINE & REFINE

For the slope chart, we can use line chart to add more year data (if data is available)

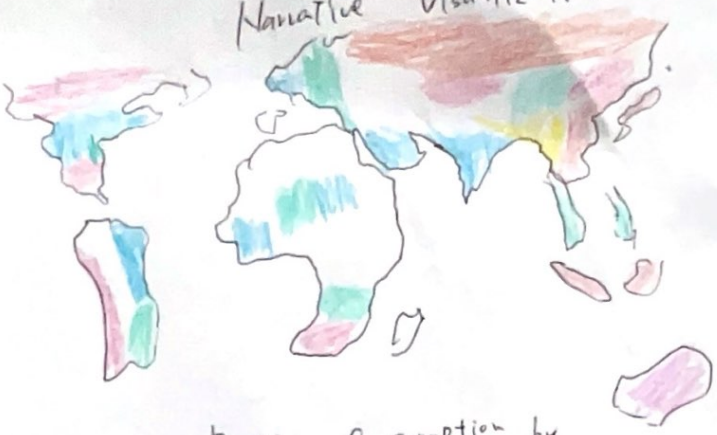
Question

1) How do you handle missing values?

2) Do the visualizations clearly tell you what they want to say?

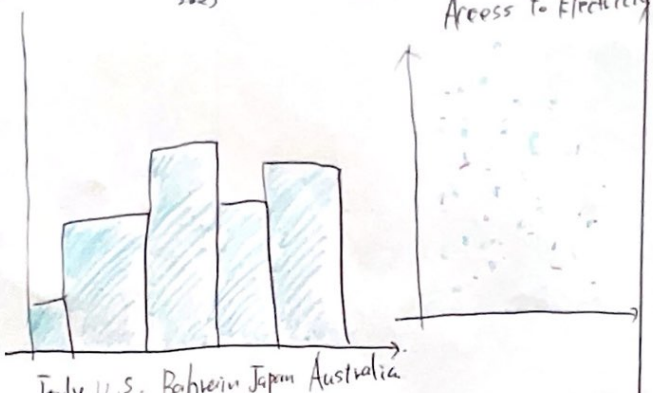
LAYOUT

Narrative Visualization



Energy Consumption by Country.

Access to Electricity



Italy U.S. Bahrein Japan Australia

Per capita Electricity by country

Title : Initial Design 1

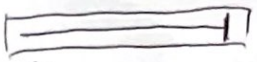
Author : Ryuji Takamura

Date : 16/10/2024

Sheet : 2.

Task: Narrative visualization for energy access and consumption

Operations



create the slider

if you move your mouse, it shows the specific year's map. You can change the map manually.

Focus.

For the Access to Electricity,

X axis is GDP per capita and Y axis is the percentage of access to electricity.

the color is based on regions such as Asia, Africa, Europe, etc.

The later data points, the higher the access to the electricity.

Discussion.

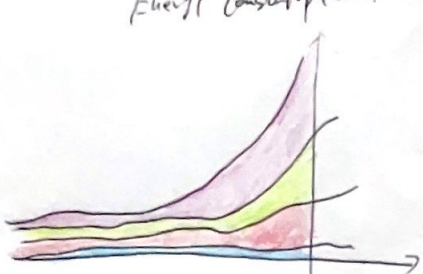
Pros : easy to understand and comprehensive.

Cons : visually imbalanced for the overall color.

LAYOUT

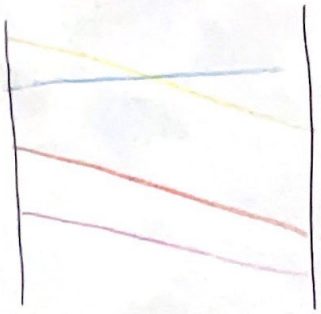
Narrative Visualization

Energy consumption.

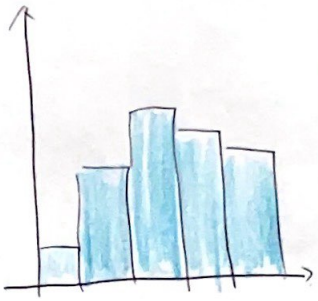


Energy consumption by Source.

Access to electricity vs GDP per capita.



Households Using Solid Fuels.



Electricity Usage by Country

select All

Title : Initial Design 2.

Author : Ryuji Takamura.

Date : 16/10/2024

sheet : 3.

Task : Narrative visualization for energy consumption and access

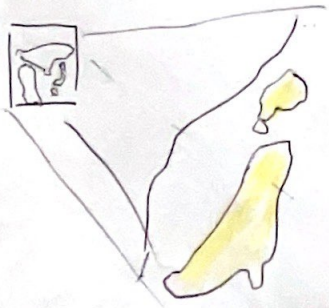
OPERATIONS.

For the Electricity Usage by Country, I added one interaction which enable us to select countries's electricity usage.

select

Focus.

For the map, there are a lot of information. By using zooming in-out function to visually check each country.



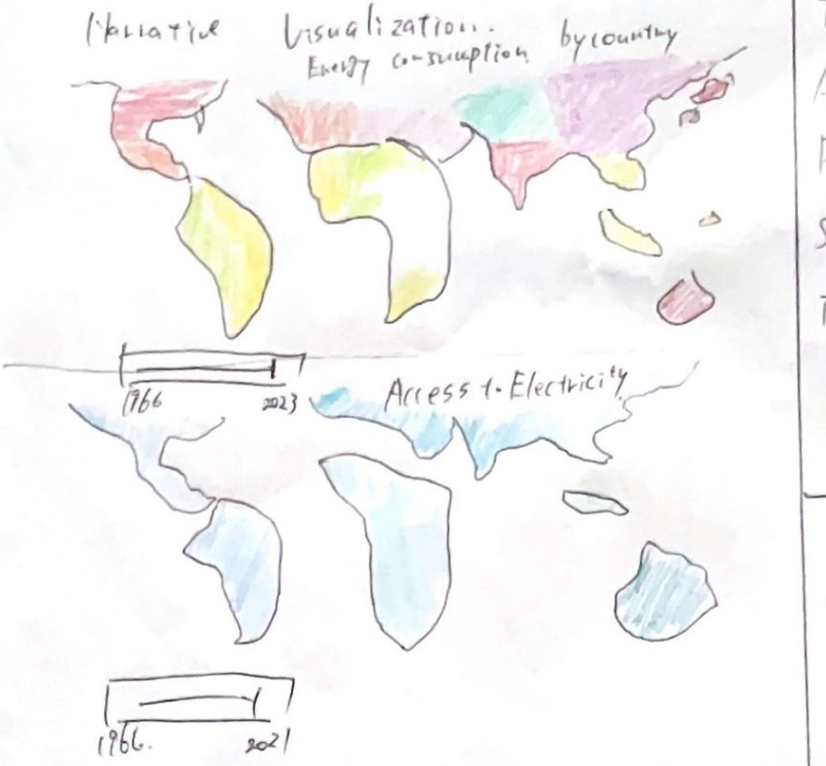
Discussion.

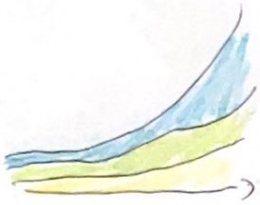
Pros: more interactive than sheet 2.

easy to compare.

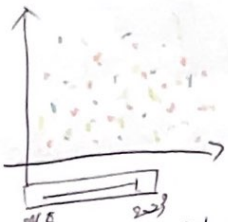
Cons: we can add 1 more visualization for better understanding of the energy consumption.

LAYOUT

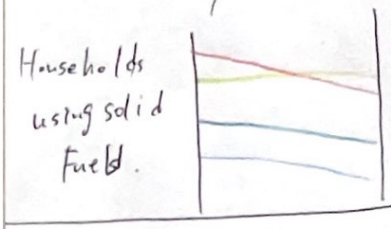


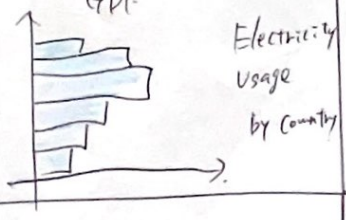


Energy consumption by Source.



Access To Electricity vs GDP





Title : Initial Design 3

Author : Ryuji Takamura

Date : 16/10/2024

Sheet : 4

Task : Narrative visualization for energy consumption and access

OPERATIONS

For the map, I added 3 more sliders.

1. year slider to change the data by year
2. Moving left/right sliders To move the map left or right
3. Moving top/bottom sliders To move the map top or bottom
4. Zoom sliders To zoom in or out the map

for 2 maps.

Focus.

For all the map, I add the text annotation for key features that express the visualization the most. For example, one of the African countries on scatter plot is the text annotation to see the electricity access across the year.

Discussion.

Pros : These graphs clearly shows the content of the visualization It is interactive and attracting the users

Cons : Overall it looks overwhelming. some assistance needed

LAYOUT

year 1966 2021 — Consumption change

Left/right 0

Top/bottom 0

Zoom 0

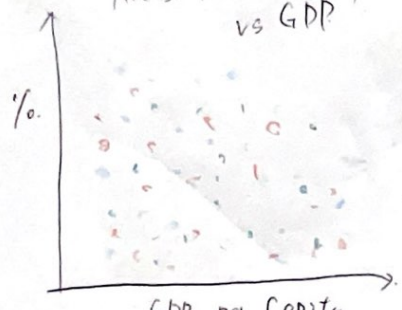
year 1966 2021 — Access to electricity

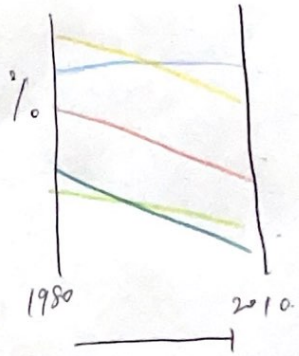
left/right 1 0

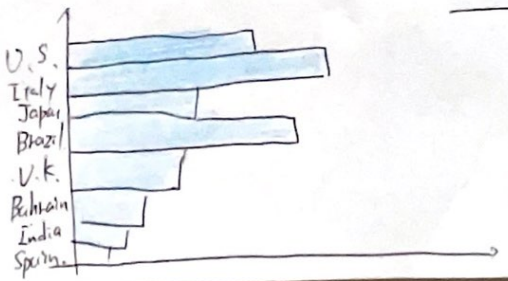
Top/bottom 1 0

Zoom 1 0

Access to electricity vs GDP







Title: Final Design

Author: Ryuji Takamura

Date: 16/10/2024

Sheet: 5

Task: Final visualization for energy access and consumption.

OPERATIONS

I added all the graphes ~~the~~ sliders to except for area chart.

This enables us to interact with the visualization.

Focus.

In terms of the color, I try to avoid using red and green at the same time for better visualization.

Estimate time and effort to build the solution.

roughly estimate 20 hours to build. Each visualization takes 2 hours, HTML and CSS takes 7 hours, Javascript takes 1 hour.

Requirements.

desktop or laptop.

I can modify the code to let phone users can see the view.