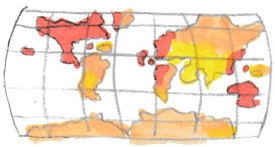
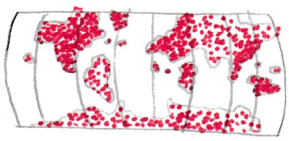
IDEA

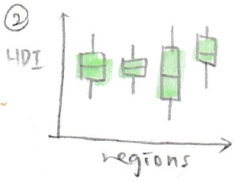
Author : Lau Yun Xian
Date : 5/10/2024
Sheet : 1 - Brainstorm

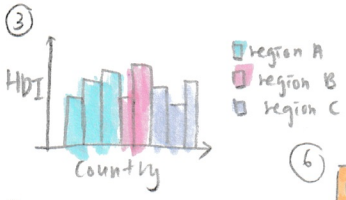
→ global income level

① 

② 

→ global HDI & GINI coefficient

② 

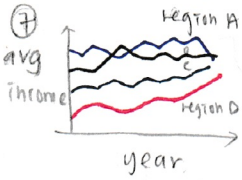
③ 

④

⑤

⑥

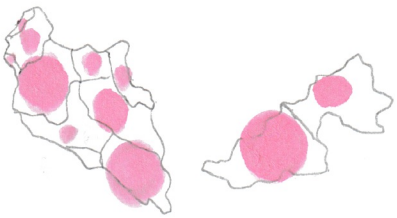
→ trend (avg income)

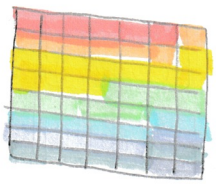
⑦ 

⑧

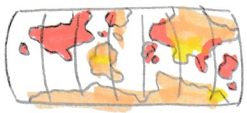
⑨

→ msia household income

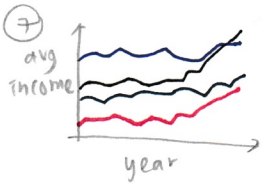
⑩ 

⑪ 

FILTER

① 

⑤

⑦ 

⑩

CATEGORIZE

trend (average income by regions over time

↓

global income level by countries

↓

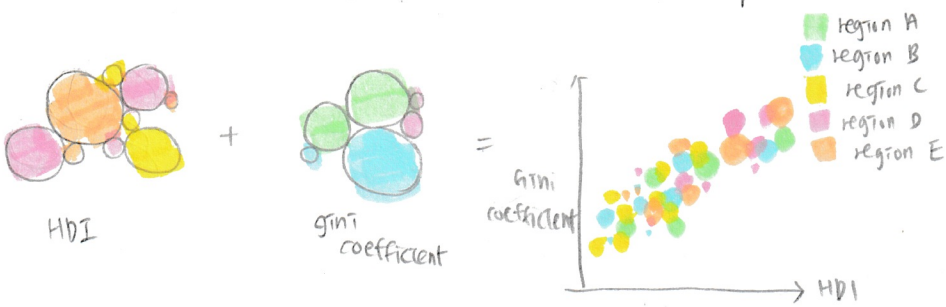
global HDI and GINI coefficient

↓

Malaysia household income data

COMBINE & REFINE

We can show HDI and GINI coefficient together by combining ⑤ for HDI and ⑤ for gini coefficient and maybe population size to create bubble plot:

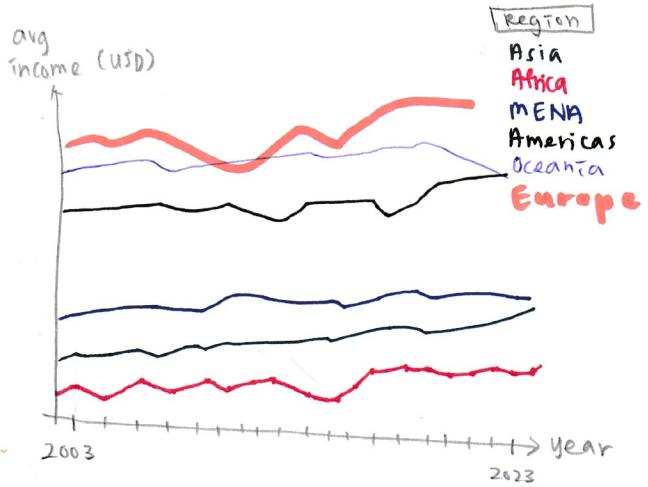


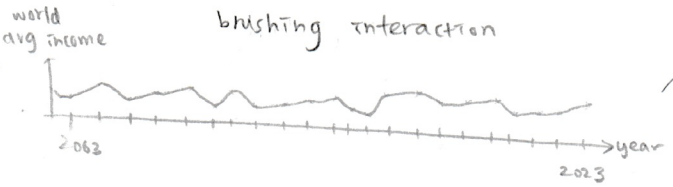
QUESTION

① Include poverty rate to Malaysia income data? if yes, do I combine with current chart or create a new chart?

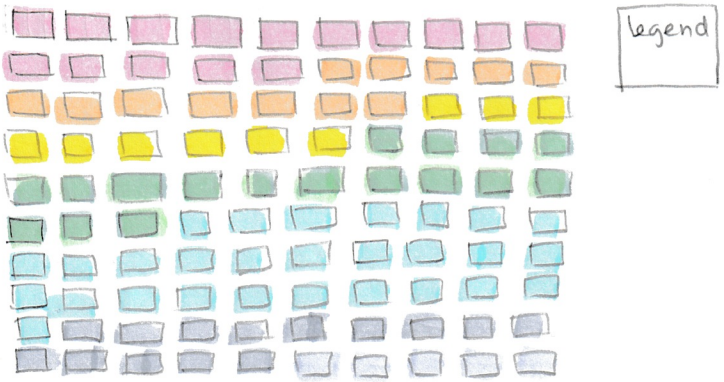
② any better visualisation for Malaysia income data?

LAYOUT





average income distribution by region in [selected year]



Author	: Lau Yun Xian
Date	: 5/10/2024
Sheet	: 2 - Initial Design (a)
Title	: Income by regions over time

OPERATION

① both the line chart and waffle chart will provide the legend which can filter the data on click

② a brushing interaction is provided !
user can select a range on the brushing interaction line chart to filter the data to show the data of the selected range of year.
⇒ waffle chart will be filtered to show the latest year! but user can use the dropdown list to see the other years in the selected range, eg:

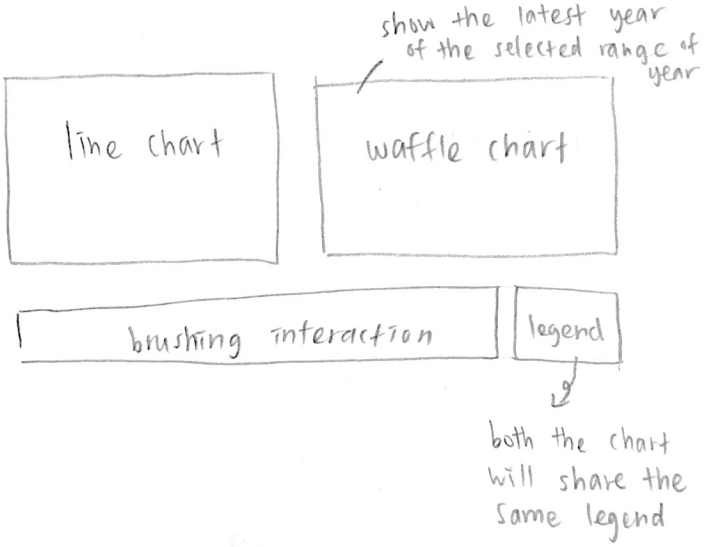
average income distribution by region in year [2023 ∨]
2020
2021
2022
2023

③ display tooltip on hover, eg:

Region : Americas
Year : 2021
Average Income (USD) :
33580.79

FOCUS

both the line chart and waffle chart will be the focus.

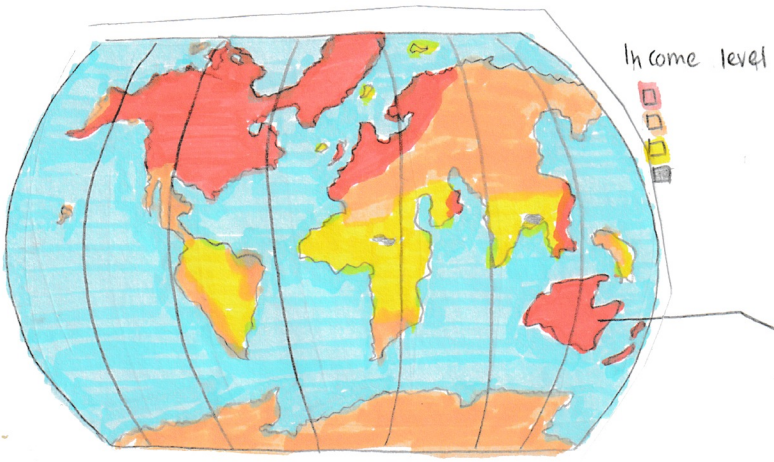


DISCUSSION

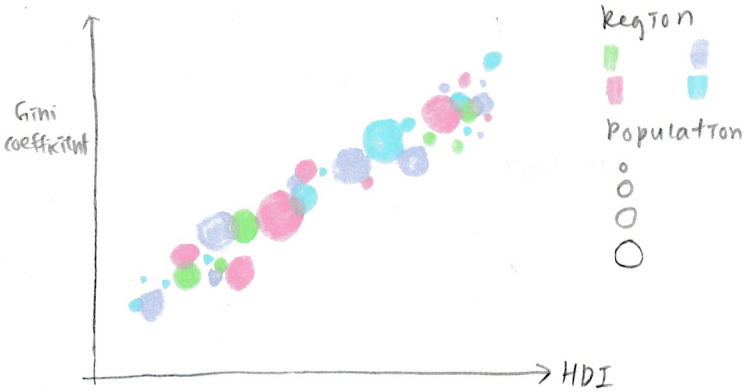
- line chart effective show the trends in average income over time
- brushing interaction allow users to focus on specific range of years
- waffle chart provides a quick overview of the income scenario without needing to interpret trends
- if multiple regions in line chart have similar trends, lines may overlap, difficult to differentiate
- may confuse the users as waffle chart can only show the latest year of the filtered range of years

LAYOUT

Author : Lau Yun Xian
Date : 5 / 10 / 2024
Sheet : 3 - Initial Design (b)
Title : Global Income Level and HDI with Gini coefficient



Region selection [show All ^]



OPERATION

① when hover to each country on the map, a tooltip will be shown, eg:

Country: ____
Income level: ____
GDP: ____
Population: ____

② legend is also a filter, the selection menu can be used to filter region data too, eg:

click on the desired region to filter!

- Show All
- Africa
- Americas
- Asia
- Europe
- MENA
- Oceania

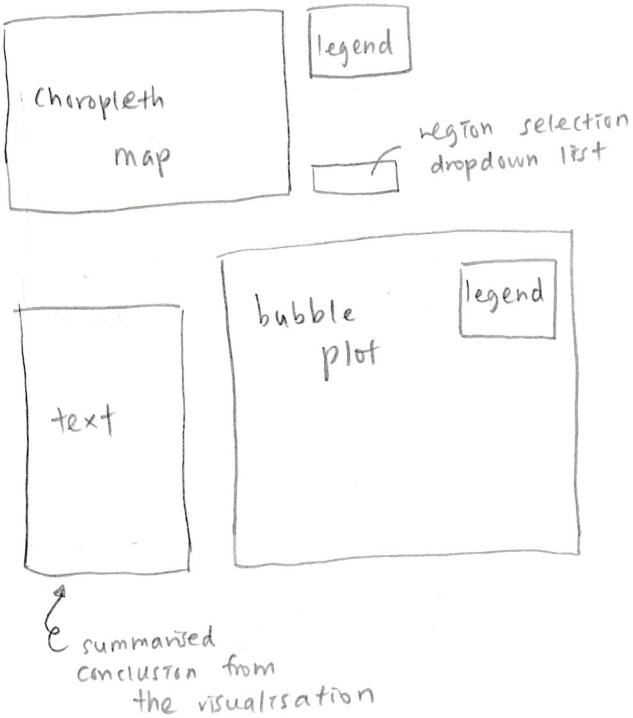
Region selection : [Africa v]

↳ filter for both choropleth & bubble plot

③ after a region is selected, choropleth map will zoom in the selected region

FOCUS

Both choropleth map and bubble plot will be the focus, such as:

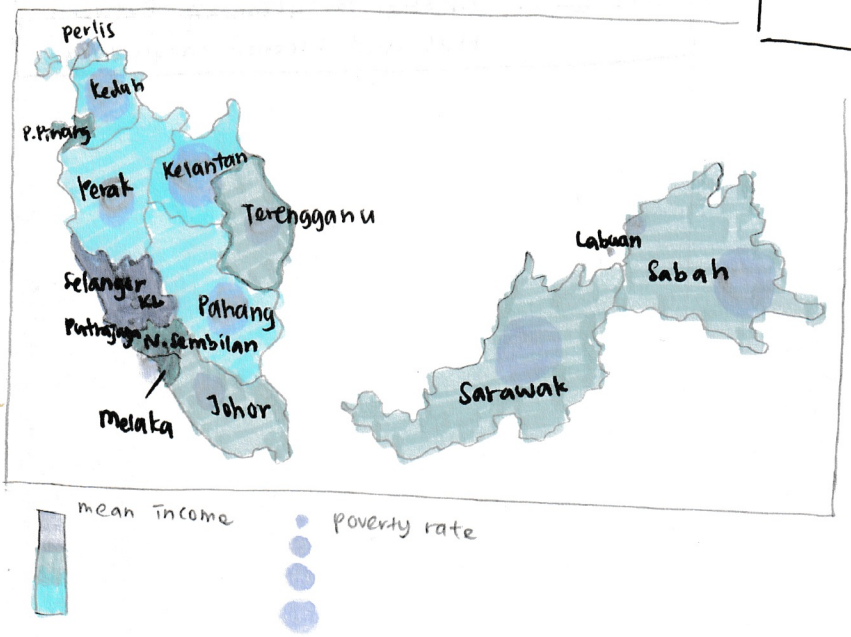


DISCUSSION

- effectively show the difference in income level across geographical regions
- interactive exploration by zooming in selected region from dropdown list
- show the relationship between HDI and Gini coefficient
- filter is provided for different variables
- zoom in and out might be complex if not designed carefully

LAYOUT

Author : Lau Yun Xian
Date : 6/10/2024
Sheet : 4 - Initial Design (c)
Title : Malaysia Household Income by States



mean income

poverty rate

Zoom :

map centre : None

OPERATION

1. tooltips will displayed when user hover to the state, eg:

State : Selangor
mean income : ___
poverty rate : ___
population : ___

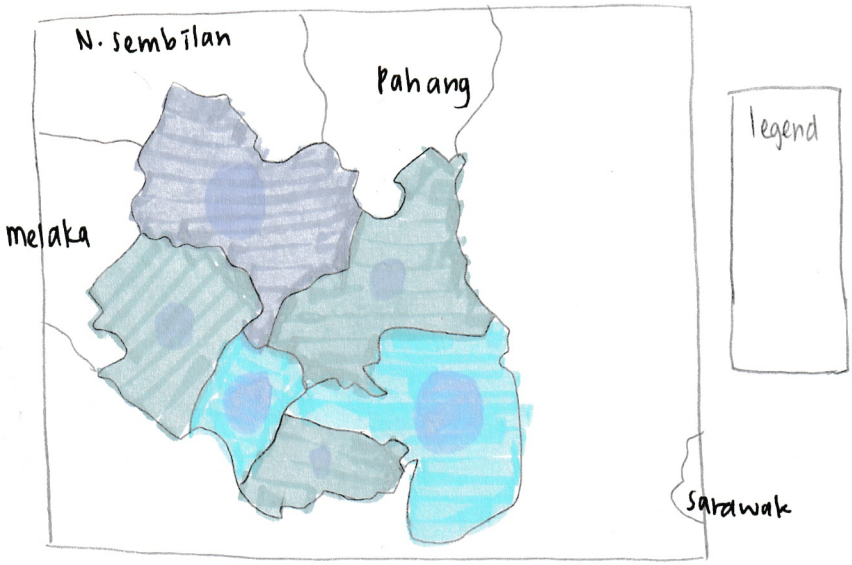
2. legend provided also act as a filter where it will show the filtered states

3. user can choose to centre the map on a state and then zoom in to see the more detailed data, eg:

4. text annotation is provided to enhance clarity

Focus

the choropleth map with symbol proportional will be the main focus, it can be zoom in and centre on a selected state, eg:



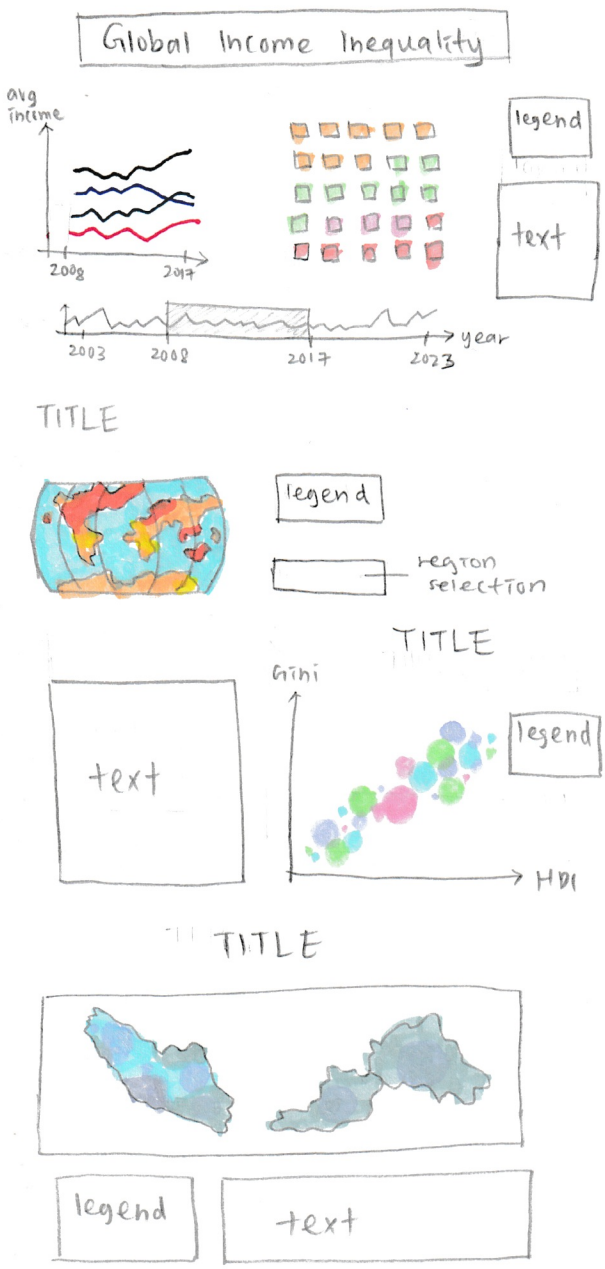
Zoom :

map centre : Johor

DISCUSSION

- clear visual comparison with proportional symbols emphasize the poverty rates
- able to display two important metrics in a visualisation
- zoom slider and map centre improve user experience
- tooltips allow users to interact with the map and get detailed info
- combine both choropleth colour shading and proportional symbols on a single map may causes visual clutter

LAYOUT



FOCUS

- no main focus, all graphs are equally important
- focus on different aspect of income inequality data
- title and text is used to guide the user
- with filter and legend for better and easier usage

Author : Lau Yun Xian
Date : 6/10/2024
Sheet : 5 - Realization
Title : Final Design Sheet

OPERATION

- user can select and filter by regions, income level, average income, HDI and more to explore the datasets
  - ↳ each visualisation have legend or filter with them, some that have common variable will share a legend // filter
- text is added to describe or conclude the visualisation, help the user understand the charts
- all charts will have tooltips, ensure the user can get the detailed information easily.
- different type of filter is used, eg: selection dropdown list and slider, this enhance the overall visualisation

DETAIL

to make this idea into reality,

1. code each charts out using vegalite
2. create a folder in visual studio code, add the dataset csv files and vegalite json files for each chart in
3. combine and design the page in a html file
4. upload in github and deploy the page
5. now, we can access the designed webpage using the link generated by github!