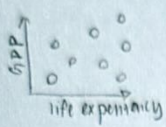


1. IDEAS

Name: Tan Qian Qian
Date: 4 October 2024
Sheet 1: Brainstorm

2. FILTER

① SCATTERPLOT



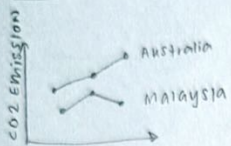
② HEATMAP



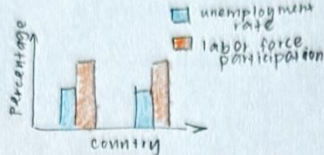
③ PIE CHART



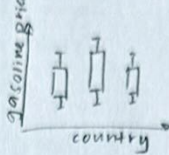
④ LINECHART



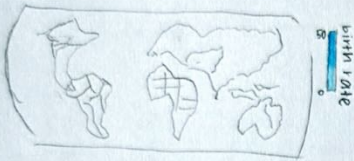
⑤ SIDE BY SIDE BAR CHART



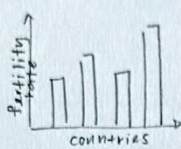
⑥ BOX PLOT



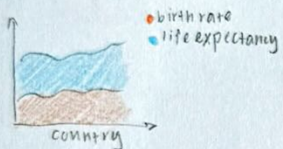
⑦ PROPORTIONAL SYMBOL MAP



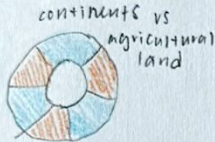
⑧ BAR CHART



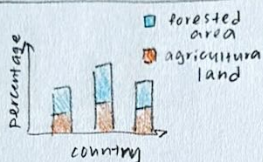
⑨ AREA CHART



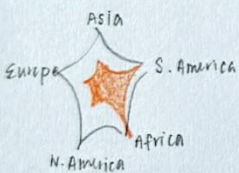
⑩ DONUT CHART



⑪ STACKED BAR CHART



⑫ RADAR CHART



③ PIE CHART



⑩ DONUT CHART



AND

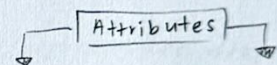
- difficult to compare angles
- lack of precision

⑨ AREA CHART



- overlapping areas make it hard to compare
- visually complex

3. CATEGORISE



Categorical

country ① ② ③ ④
Continent ② ⑩ ⑦
Abbreviation
Currency Code
Calling Code
Capital
City
Official Language

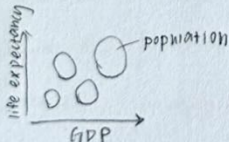
Quantitative

Density
Agricultural Land ⑪
Land Area
Birth Rate ①
CO₂ Emission ④
Fertility Rate ③
Forested Area ⑩
Gasoline Price ⑥
GDP ②
Life Expectancy ⑨
Population ⑦
Labor Force Participation ⑤
Tax Revenue
Unemployment Rate ⑤

4. COMBINE & REFINES

a - transform ⑦ into a choropleth map because ⑦ more suitable for absolute values.

b - transform ① into a bubble plot



c - combine ⑧ with an additional line graph



QUESTION ?

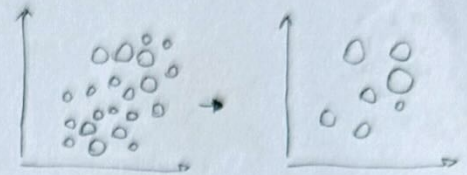
- ① Is there a need for additional visualisations to explore other dimension?
- ② Are the visualisations providing meaningful insights?
- ③ Can the visualisations actually be implemented?

LAYOUT

NAME: Tan Qian Qian
Date: 4 October 2024
Sheet: 2 Initial Design

OPERATION

→ Filter Action

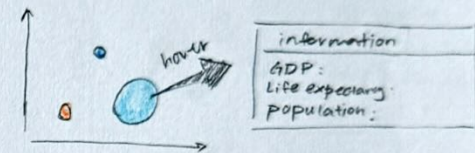


Population



move slider to alter minimum population shown on graph

→ Tooltip



maybe add drop down menu for continent filter ?

FOCUS

→ Bubble Chart (3 focus)

- ↳ x-axis: GDP, y-axis: life expectancy
- ↳ size of bubbles: population
- ↳ colour: continent

→ Grouped Bar Chart (2 focus)

- ↳ x-axis: country, y-axis: percentage
- ↳ colour: unemployment rate / labor force participation

→ Scatterplot matrix

- ↳ to identify patterns, correlations, outliers across multiple pairs of variables simultaneously.

→ Choropleth Map: conveys how ratio varies across geographic regions

- ↳ focus on country, birth rate
- ↳ colour: intensity determines ↑ # of births

DISCUSSION

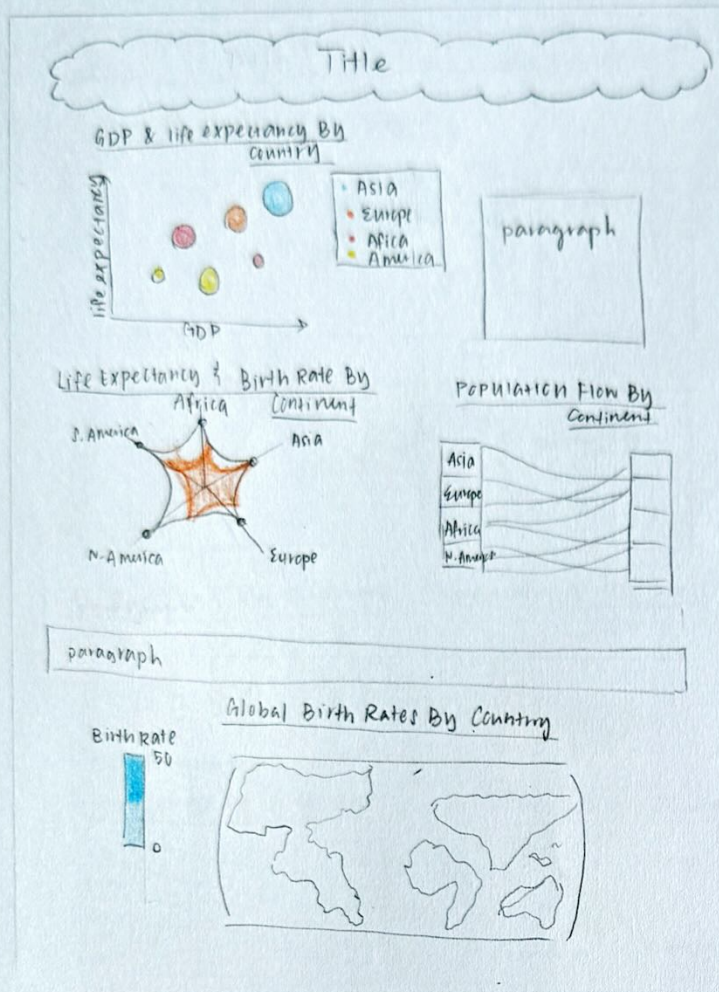
Advantages

- well segmented into clear sections
- simple for users to navigate through
- users read from top left to bottom right allowing storytelling of the visualisations

Disadvantages

- might be information overload
- bar charts might be too simple
- all sizes are equally the same
 - ↳ x main graphs that catches the eyes of the user.

LAYOUT



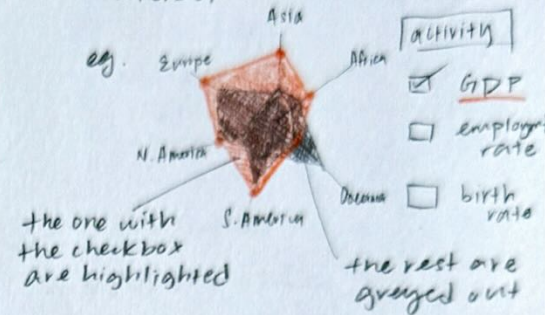
NAME : Tan Qian Qian

Date : 4 October 2024

Sheet 3 : Initial Design

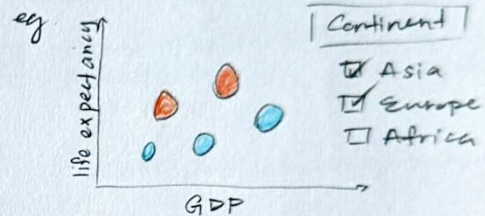
OPERATION

→ highlight Action of users' interest



- filter for other attributes? (add more?)

- change activity from multiple options to drop down menu?



- that way users would be able to filter out the ones that interest them.

↳ flexible + cater their needs.

FOCUS

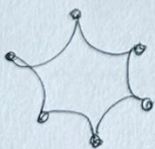
- no main focus, all size equally the same, equally important

↳ main focus is storytelling

↳ consistent size

↳ consistent whitespace

- radar chart :



↳ able to compare multiple continents across multiple variables on a single chart.

↳ engaging visualisation

DISCUSSION

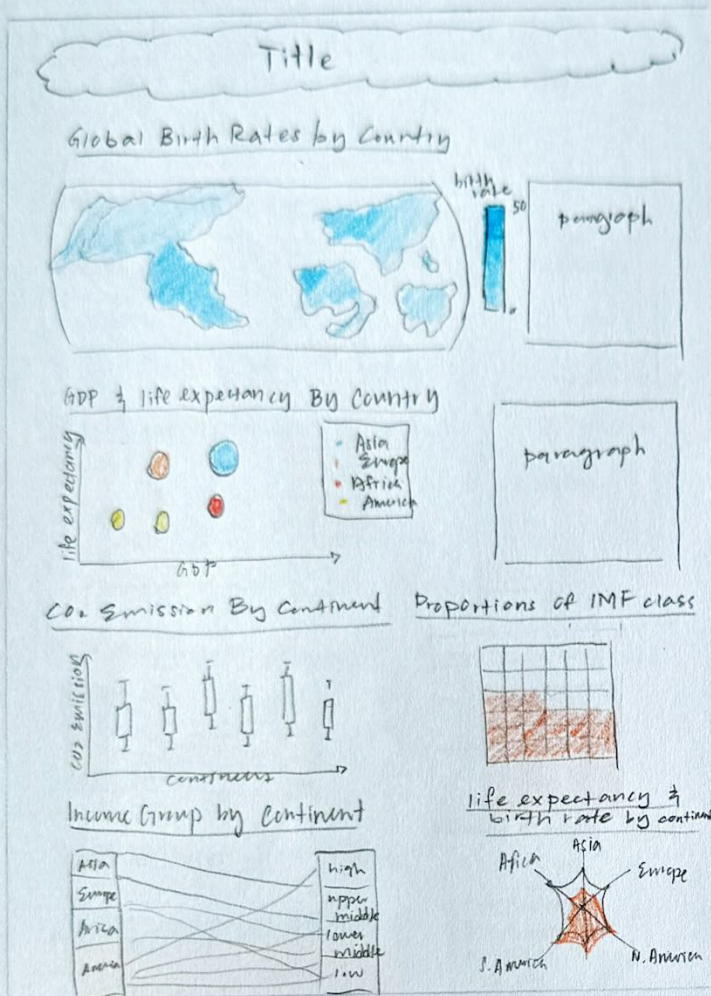
Advantages

- aesthetically appealing + eye catching
- well segmented into diff sections with paragraphs for justification
- interactive dashboard with functions to ease the users

Disadvantages

- heatmap might be too simple
 - ↳ not complex enough
- small range of attributes used
 - ↳ limited information

LAYOUT



NAME : Tan Qian Qian
Date : 4 October 2024
Sheet : 4 Initial Design

OPERATION

① search bar

1a

→ user can type the continent that they are interested

② Filter Action

→ Multi Select Filters

→ Single Select Filters

Continent

☐ All

☐ Asia

☐ Europe

☐ ...

Continent

All

Asia

Europe

...

☒ able to choose multiple options

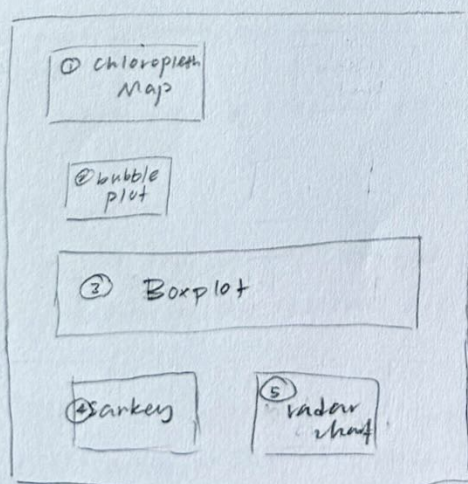
☒ focus on one option

- use for which graph?

③ Excluding Action

→ apply for sankey?

FOCUS



Global Economic Health

Economic Development

① ② ③

④ ⑤

→ focused more as it is placed on top half of layout.

DISCUSSION

Advantages

- well structured & visually appealing
- usage of different complex graph with 2 or more attributes → sufficient user interaction (filtering, excluding)

Disadvantages

- Radar chart → extension supported in vegalite?
UNSURE - might be in vegalite
- Search bar probably not suitable (Filter more suitable)

LAYOUT

Name: Tan Qian Qian

Date: 4 October 2024

Sheet: 5 Final Implementation Design

OPERATION

↳ combination of all suitable actions

✓ Filter Action: Single Select Filters

↳ user can choose one option to focus on

Continent
<input type="checkbox"/> All
<input type="checkbox"/> Asia
<input type="checkbox"/> Europe
<input type="checkbox"/> =

Population
↳ minimum

1000000 0

— move slider to change the minimum pop. shown on graph

✓ Tooltip Interaction

↳ hover over data points to show information

Country:	—
Population:	—
	—
	—

✓ Brushing & Zooming

↳ apply to map

DETAIL

DEPENDENCIES

Data Cleaning:

↳ VS Code (Python)

↳ Libraries (Pandas)

Graph

↳ VegaLite for drawing visualisation

ESTIMATED TIME

at least 3 days

↳ 1 day: choropleth map, bubbleplot

↳ 1 day: waffle chart & sankey diagram

↳ 1 day: stacked area chart & further checks

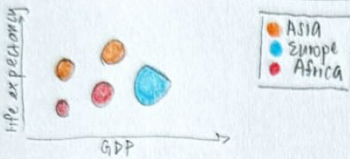
The Global Footprint: Economic Activity & Population Health

Global Birth Rates By Country



paragraph

GDP & Life expectancy Across Countries



paragraph

Income Group Across Continents

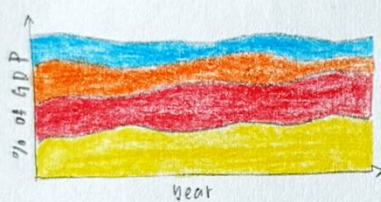


Proportions of IMF Class



• Advanced • Emerging • Others

% GDP by Sector Across Countries



• Agriculture
• Manufacture
• Industry
• Services

FOCUS

↳ each section contains text for explanation of graphs.

• user has a clearer understanding

↳ for all charts

• avoid the usage of red & green colour (which are colour vision deficiency)

↳ bubbleplot, choropleth map, stacked area charts

↳ users able to filter attribute

• easy to tailor dashboard to their needs