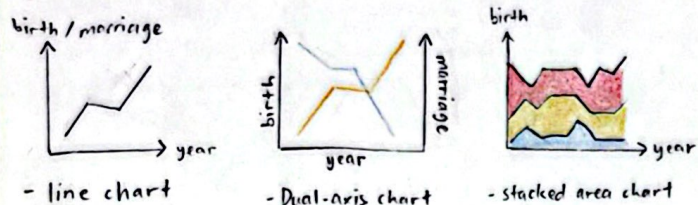
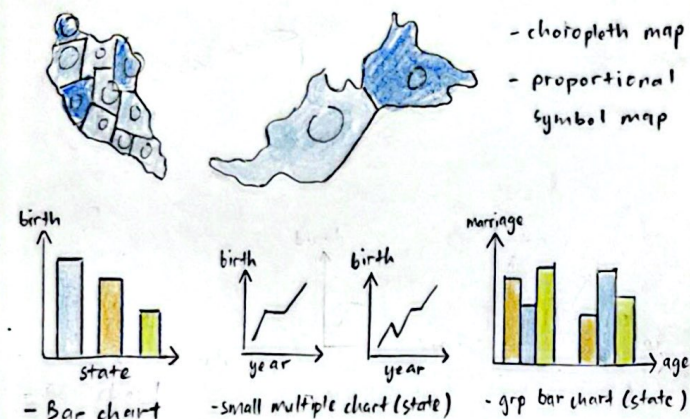


Ideas

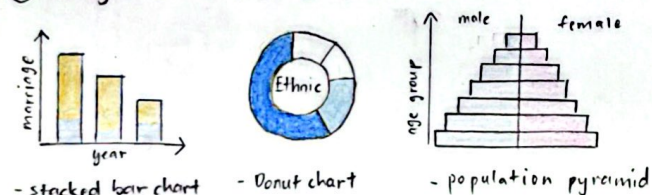
① Time Series Visualisation



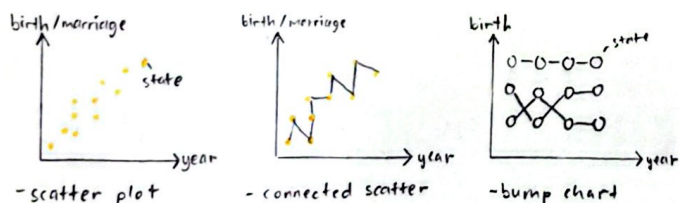
② State-level Visualisation



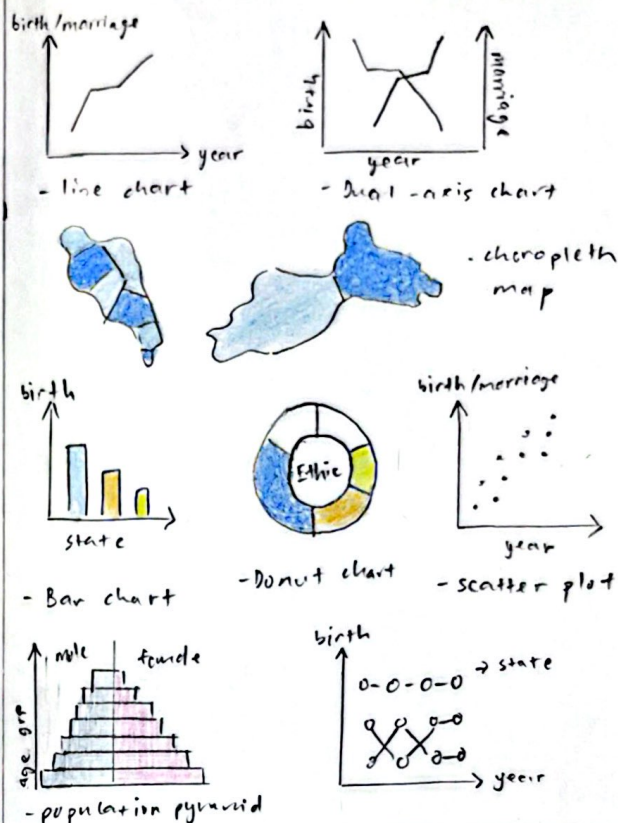
③ Categorical & Distribution Visualisation



④ Relationship Visualisation



Filter



Categorize

① National Trends Over Time

- dual-axis line chart (birth vs marriage)
- stacked area chart (birth by ethnicity)

② How State compare

- choropleth map (marriage / birth rate by state)

③ Who and When

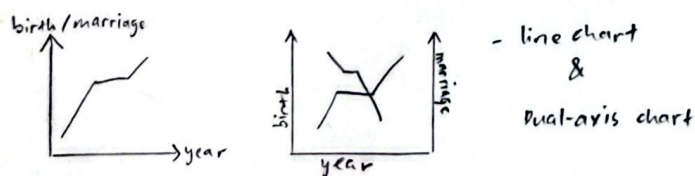
- stacked bar chart (marriage by age group)

④ Core Relationship

- Scatter Plot (Marriage Rate vs birth rate by state)

Combine & Refine

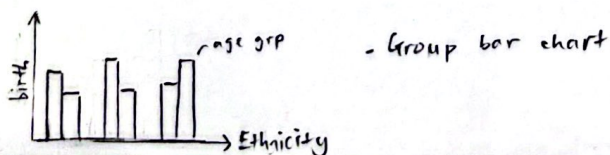
① National Trends Over Time



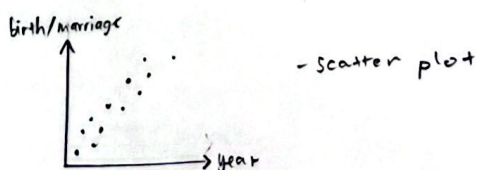
② How states compare

- choropleth map (birth rate by state)

③ who and when



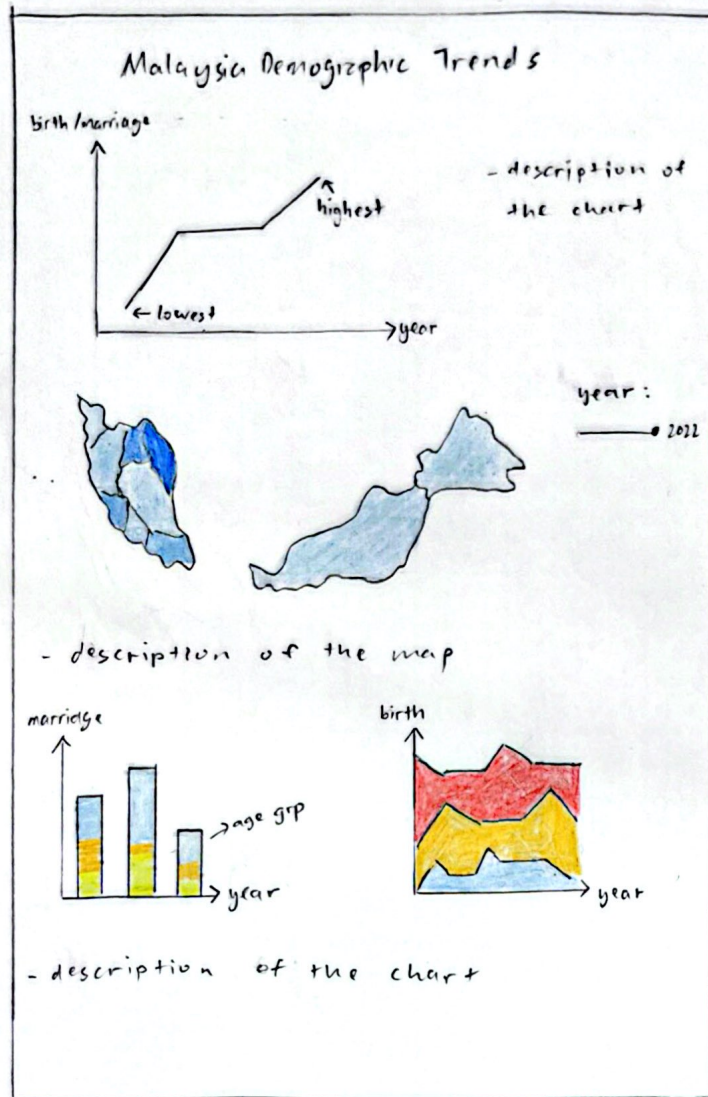
④ The Core Relationship



Question

1. What is the best way to normalize the dataset?
2. What is the main narrative?
↳ declining birth rate despite stable marriage rates or rising age of marriage impacting when births occur?
3. What is the most important interactive element?
4. What annotations or text are needed to add context?

Layout



Title : Malaysia Demographic Trends

Author : Sarina Sim

Sheet : 2

Date : 18/10/2025

Task : DV2

Operations

① Filter

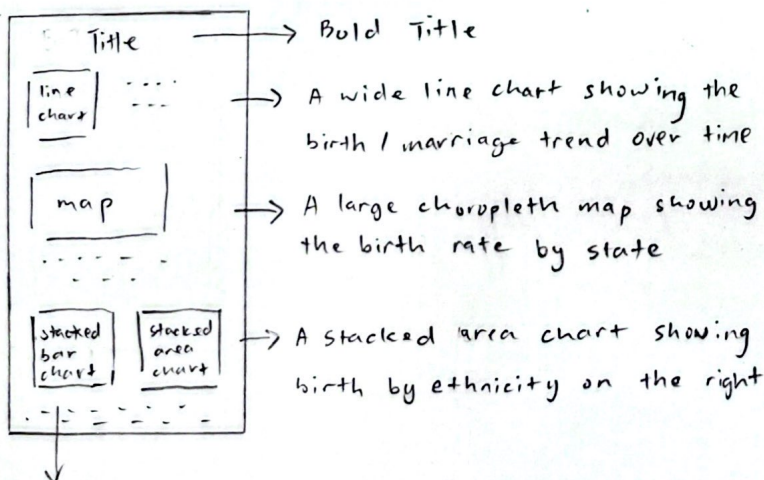
- user can select a specific year from the slider, which will update the map.

② Hover

- Hovering over a state on the map or a bar in the chart reveals a tooltip with basic information.
- Hovering over the point on the line chart show a tooltip with basic info



Focus



Discussion

1. Pros

- provide high density information
- allow for easy comparison between different facet of data
- good for expert user

2. Cons

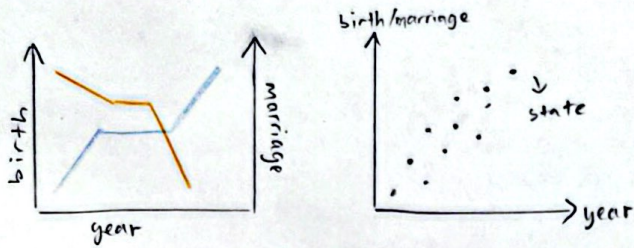
- can be overwhelming for the average user.
- Lacks a clear narrative or story to guide the user
- The relationship between marriage and birth is not explicitly highlighted.

Layout

Malaysia Demographic Trends

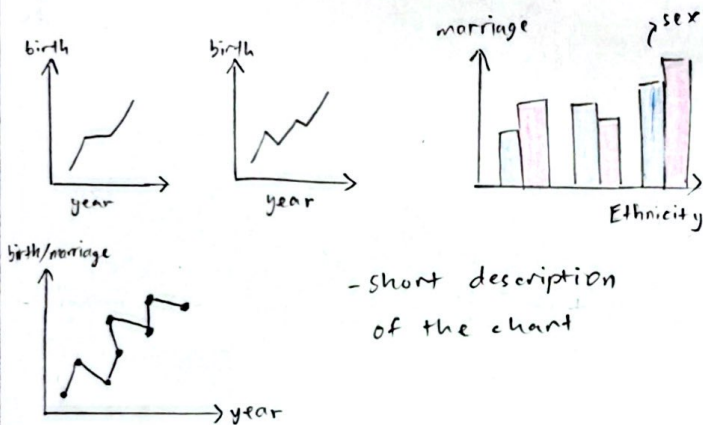
- short description for the visualisation

① Relationship of marriage and birth



- short description of the chart

② State level visualisation



- short description of the chart

Title : Malaysia Demographic Trends
Author : Sarina Sim
Sheet : 3
Date : 18/10/2025
Task : DV 2

Operations

① Filter

- click on the dropdown filter menu for the group bar chart can filter the Ethnicity.

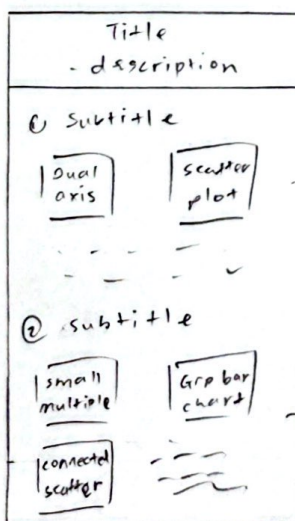
② Hover

- Hovering on the point on the scatter plot will appear a tooltip showing the details of that state.

③ Description

- below every chart, showing a details explanation for the chart

Focus



Bold title and short description of the visualisation

Dual axis chart & scatter plot place side by side and showing a detail explanation for this two chart

small multiple chart & Grp bar chart place side by side and given a detail information below the two chart

Discussion

1. Pros

- excellent for storytelling and communication a clear message.
- highly engaging and accessible for a general audience

2. Cons

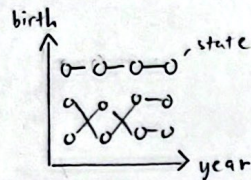
- Restricts user exploration
- can be rigid

Layout

MALAYSIA DEMOGRAPHIC TRENDS

- short
information
for the
visualisation

① The birth rate change over time

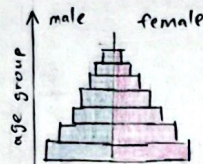


- short description
of the chart

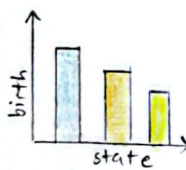
② The categorical Distribution of birth & marriage



year : 2022



③ Birth & marriage rate by state



Title : Malaysia Demographic Trends

Author : Sarima Sim

Sheet : 4

Date : 19/10/2025

Task : DV 2

Operations

① Tooltips

- clicks on the points on the chart, will appear a tooltips showing the basic information.

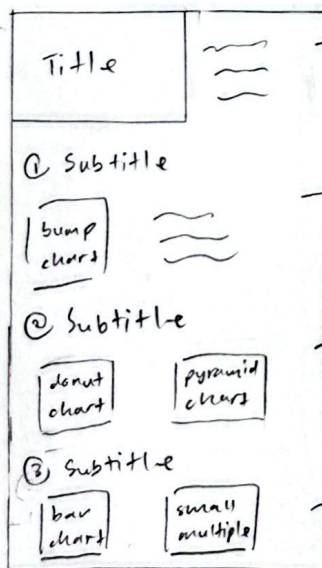
② Year slider

- A slider allow user to change the year of the donut chart

③ Dropdown menu

- A dropdown menu to filter the state of the bump chart

Focus



Bold title with a short description of the visualisation

A bump chart with a short description

A donut chart & pyramid chart place side by side

A bar chart & small multiple place side by side

Discussion

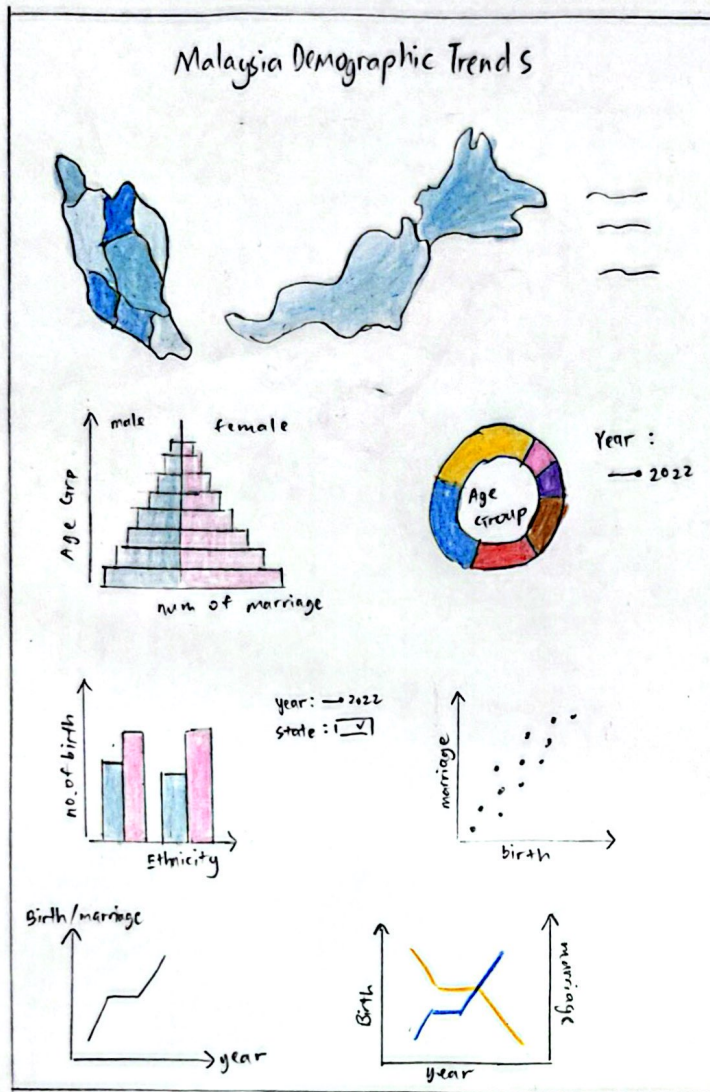
1. Pros

- Balance guide storytelling with intuitive exploration
- caters to both casual and expert user by providing a summary and deep-dive tools
- Allow for easy comparison between different facts of the data

2. Cons

- require very clean and well-thought-out layout to ensure the link interaction are obvious to the user

Layout



Title : Malaysia Demographic Trends

Author : Sarina Sim

Sheet : 5

Date : 19/10/2025

Task : DV2

Operations

① Filter

- year slider and dropdown menu for group bar chart
- user can select any year or state they want

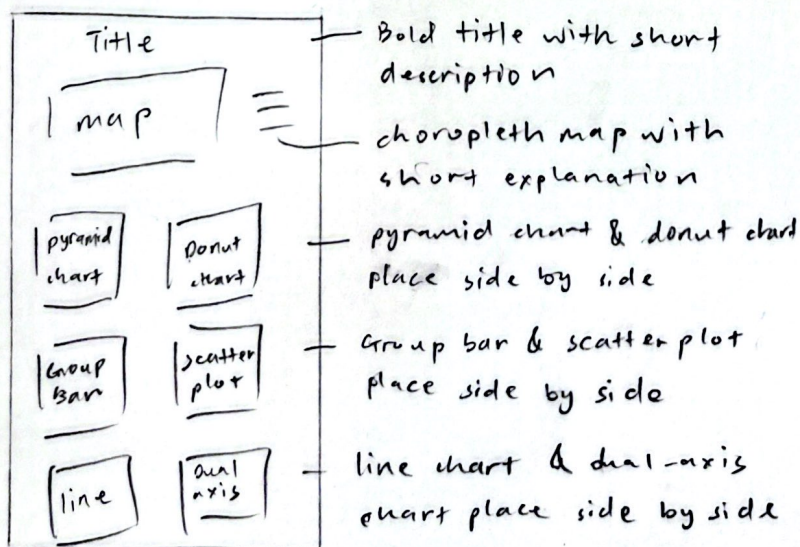
② Hover

- Hovering the map or chart will show the tooltip with the basic information

③ Description

- Include short explanation for all of the chart

Focus



↳ add short description for all the chart

Details

1. Tools

- HTML, CSS, Vega-lite, Javascript
- 2. Algorithms and data processing
- use data aggregation algo
- implement correlation analysis

3. Time Estimated

- 4-5 days for design and interactivity
- refinement : 2-3 days