

① IDEAS

Title: Where are Malaysia's gender imbalances by state, and how big are they?"

=> Choropleth map

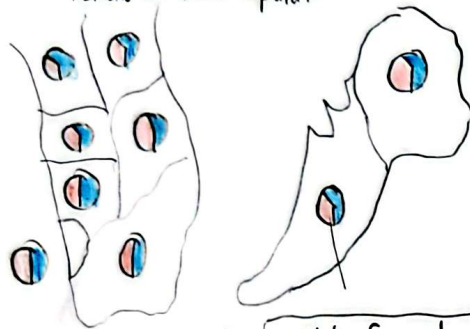
Malaysia: Female Population

Share by State



Female share 47 50 53

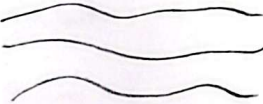
=> Proportional symbol map
Female vs Male Population



Tooltip

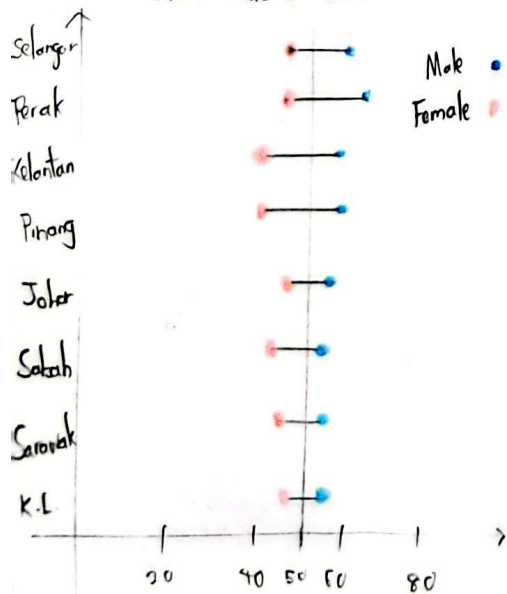
State Sarawak
Female ('000) 1393.4
Male ('000) 1613.8
Total ('000) 2907.2
Female share(%) 47.93

Text: Explanation of why some state has higher population than others



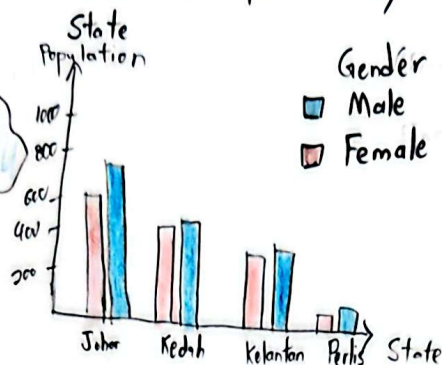
=> Dumbell chart

State Male to Female ratio



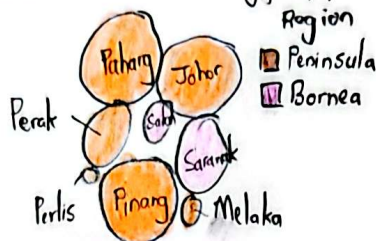
=> Grouped bar chart

Female vs Male Population by



=> Bubble chart

Which state has a bigger population?



FILTER

① checkbox

- Male & Female
- Peninsula & Bornea state
- Ex: ☒ Male ☒ Female

② Range slider

- Filter Female share Percentage



CATEGORIZE

State Population

Selangor : 5 mil

K.L : 2 mil



State Male & Female Population

Selangor Male : 3 mil

Selangor Female : 2 mil



Female Population Pct

QUESTION?

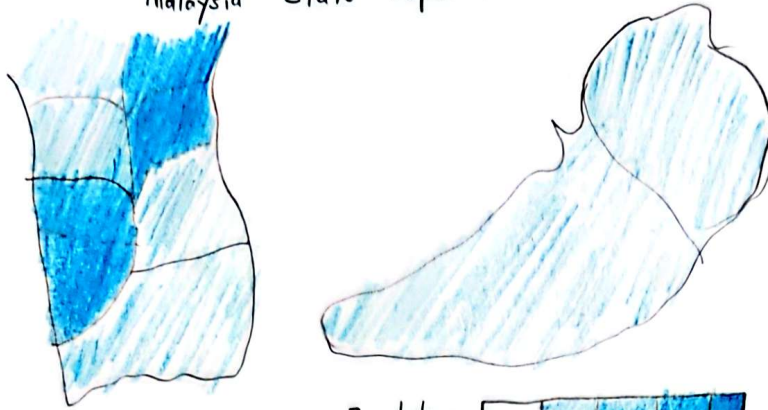
- Which states have a female share above/below 50%
- Do Peninsula / East Malaysia show different patterns?
- Which state has the largest absolute gap (Female Share Pct - 50)
- Investigate why this is happening (history, races, religion, belief etc)

② LAYOUT

Title: Where are Malaysia's gender imbalances by state, and how big are they?

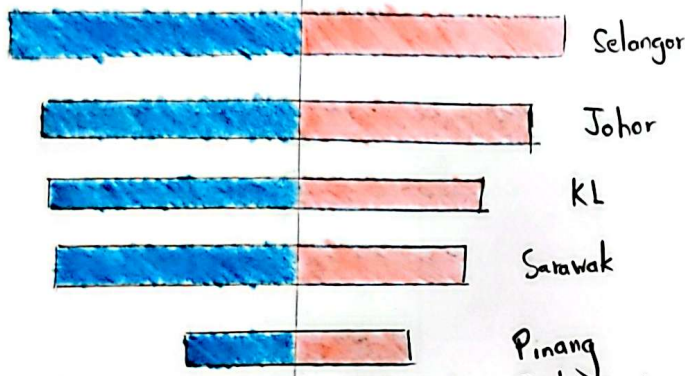
Text: Explaining Malaysia, its history, etc.

Malaysia State Population

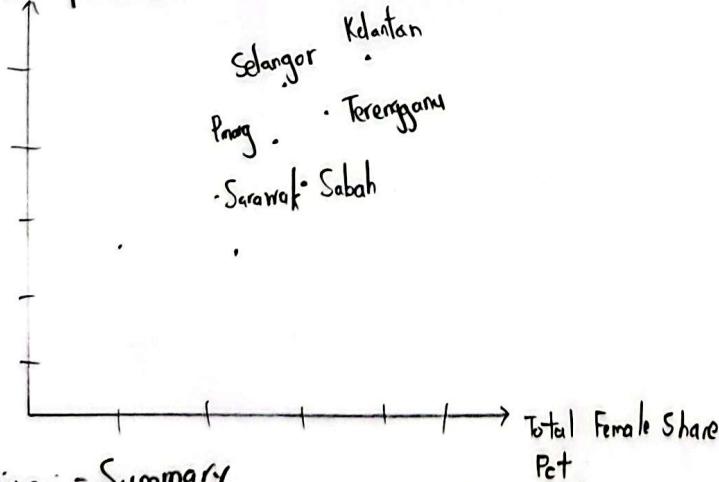


Text: Male VS Female

Population
Male
Female



Text: Possible Reason of Male Population > Female
Total Population



Conclusion: - Summary
- Compare Malaysia to other country
- Future Prediction

Title: Idea 1

Author: Tan Zhong Yi

Date: 6/10/25

Sheet: 2

Task: Visualization idea 1

Focus

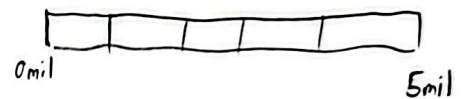
→ Essence: "Where is the imbalance, how big is it, does state population size relate to it?"

→ Tooltip: Hover around the map show the state data details. Ex:

State	Sabah
Female ('000)	1924.0
Male ('000)	2122.9
Total ('000)	4046.9
Female Share (%)	47.54

Operation

→ Range selector for Population



→ Filter state

- ☐ Selangor
- ☐ K.L.
- ☐ Sabah

Discussion

Pros:

- Clear narrative flow
- Mix of spatial, ranking, relational views hits core tasks.

Cons:

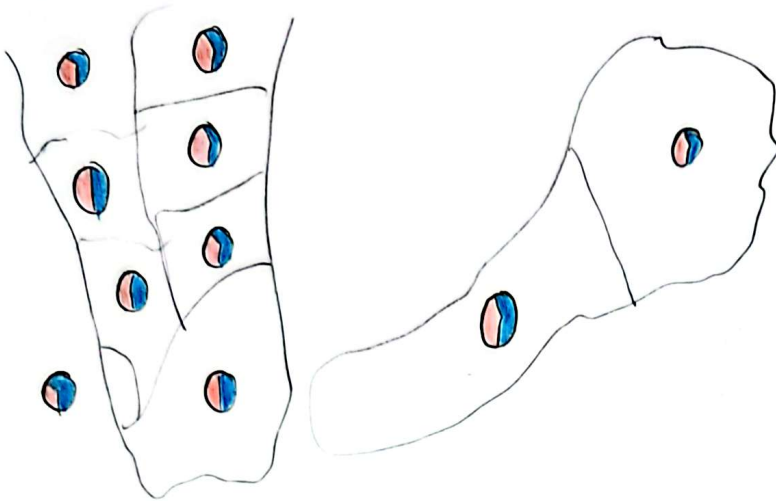
- Scatter Plot may feel busy for all states, use subtle transparency or labels only for outliers
- Choropleth bins must be chosen carefully, avoid misleading classes.

③ LAYOUT

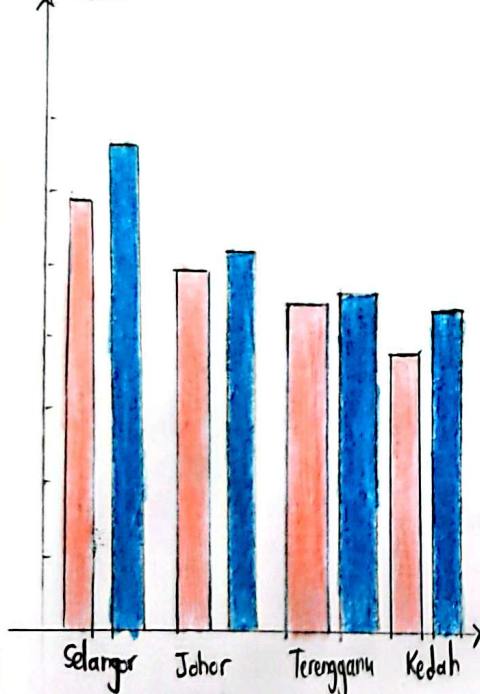
Title: Where are Malaysia's gender imbalances by state, and how big are they?

Text: _____

Malaysia State Male Vs Female Population



Male vs Female Share per State Population



Conclusion: _____

Footer: source, author, notes.

Title: Idea 2

Author: Tan Zhong Yi

Date: 6/10/25

Sheet: 3

Task: Visualization idea 2, designing the dashboard layout

Focus

- Using Proportional symbol map to roughly show the Male-to-Female ratio of each state.
- Then, we zoom into details with stacked bar chart and dumbbell chart to show the difference

Operation

- Filter/focus by region: toggle All/Peninsular/East, clicking a state highlights it across all three charts
 - ☐ All
 - ☐ Peninsula
 - ☐ East
- Hover tooltips for Total, Female, Male, Female/Male, label notable outliers

Discussion

Pros:

- Complementary views:
 - map = where + how big
 - stacked bar = composition
 - Dumbbell = Ranking
- This helps in lowering cognitive load and consistent encodings keep it fast to learn.

Cons:

- Palette risk: diverging colors must be colorblind-safe
- Dashboard might be confusing and can

④ LAYOUT

Title: Malaysia's States Compared: Female Share of Population, State Population, Gender Gaps in 2020

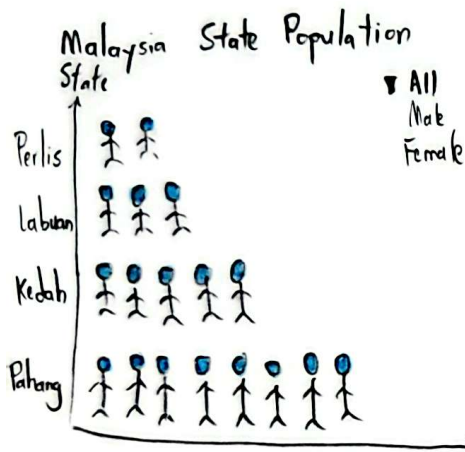
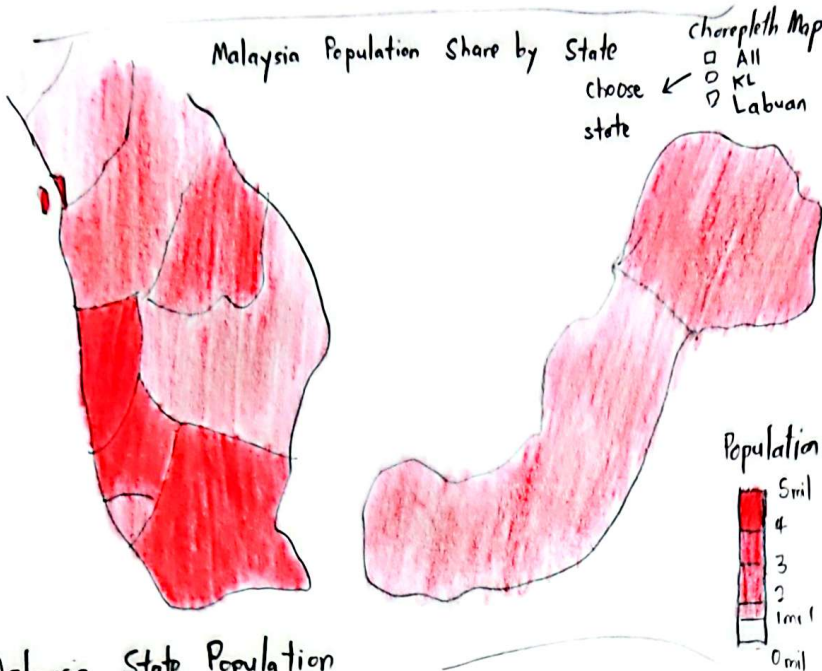
Title: Idea 3

Author: Tan Zhong Yi

Date: 6/10/25

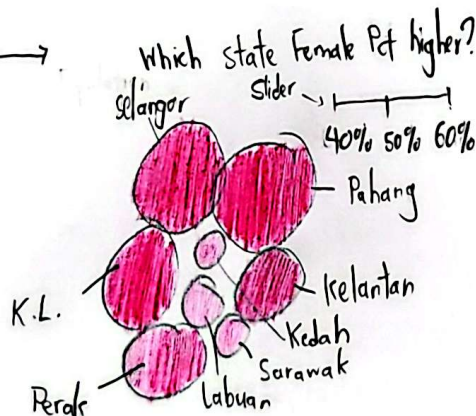
Sheet: 4

Task: Visualization idea 3



Ranked list

Bubble Chart



Conclusion:

Footer:

FOCUS

- Contrast between Male & Female in ranked list
- Bubble Chart show how big each state is (Total) while colour shows which way it leans (Female Share Pct vs 50%)
- Chorepleth Map show the population size of each state

Operation

- Entire chart can be filter out by state selection
- Hover tooltip for exact state information (Total, Male, Female, Gap)
- Rank list sort ascendingly by population

Discussion

- Pros:
- Choropleth map can show immediate spatial overview
 - Ranked list show precise and scannable data, also best for who's where in the ranking
 - Bubble Chart can help explain patterns the map alone can't
- Cons:
- Choropleth map for absolute totals is discouraged by teacher, use population density or classed rank instead.
 - Bubble Chart may risk in overplotting for many states.

⑤ LAYOUT

Title: Malaysia's states compared: female share of population, state population, gender gaps in 2020

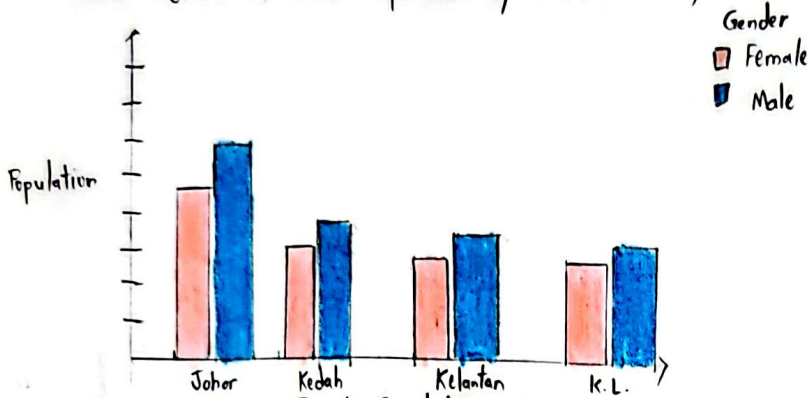
Text:

Title: Where are Malaysian people concentrated?

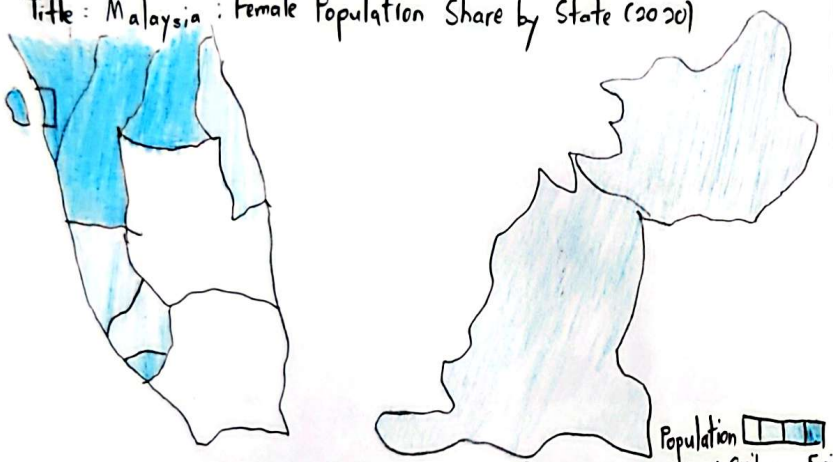


How do totals split by gender?

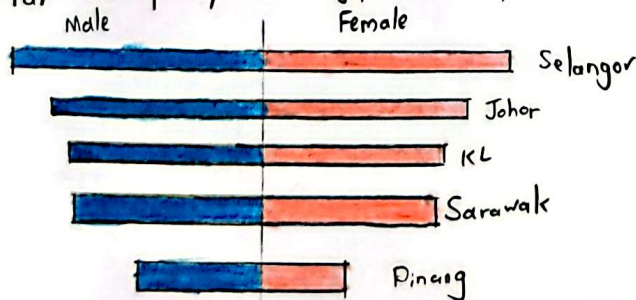
Title: Female vs Male Population by State (2020)



Title: Malaysia: Female Population Share by State (2020)



Title: How far from parity? Gender gap from 50%, ranked.



Conclusion:

Footnote:

Title: Final Design Sheet

Author: Tan Zhong Yi

Date: 6/10/25

Sheet: 5

Task: Finalize the dashboard design implementation

Focus

- Overview of size first: where the people are (map bubbles) and how totals split by gender (grouped bars).
- Then, dive and zoom into balance: where female share is higher/lower (choropleth) and how big the gap is from parity (diverging bars).

Operation and Choropleth

- For Proportional Symbol Map, we can hover tooltip to show information like Total, State name, Male, Female etc.
- For the entire dashboard, we can apply region filter to choose selected area like All, Peninsula, Borneo
- For map, clicking a state highlight the state data across all charts.

Details

=> Dependencies: Vega-lite on VSCode, Excel for data cleaning, GitHub to upload work

=> Plan for time & effort (due Week 11)

1-day => Finish homework 9

1-day => Finish homework 10

1-day => Bring homework's work into dv2, add 2 more charts

1-day => Finalize & short report