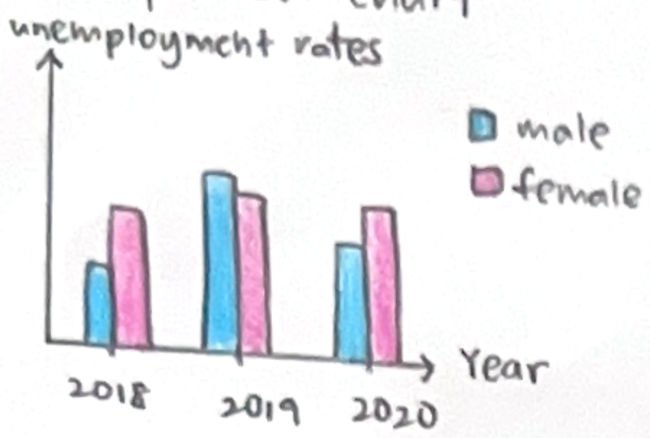
IDEAS

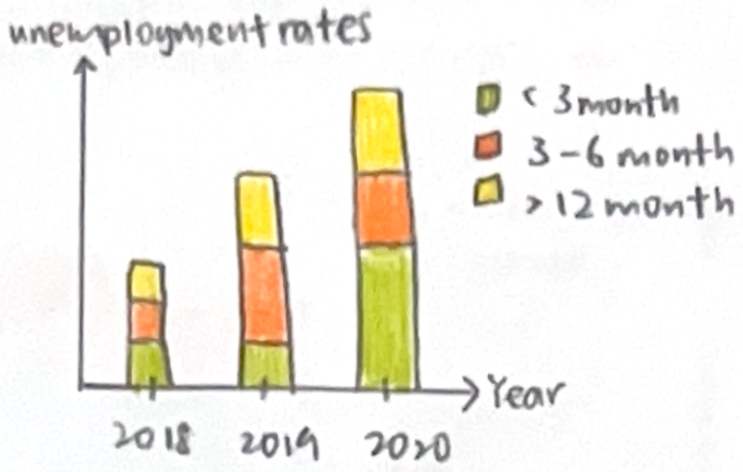
Author : Yeo Yu Xuan
Date : 20 Sep 2025

① Categorical attribute

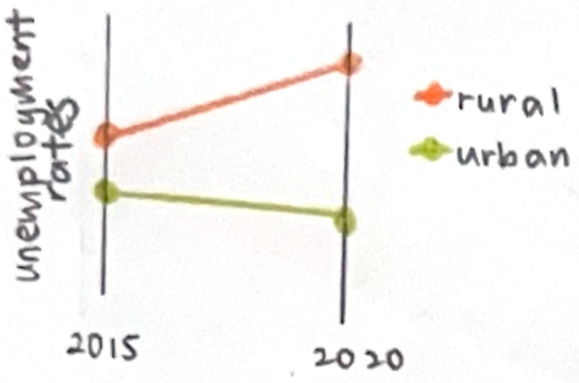
a) Grouped bar chart



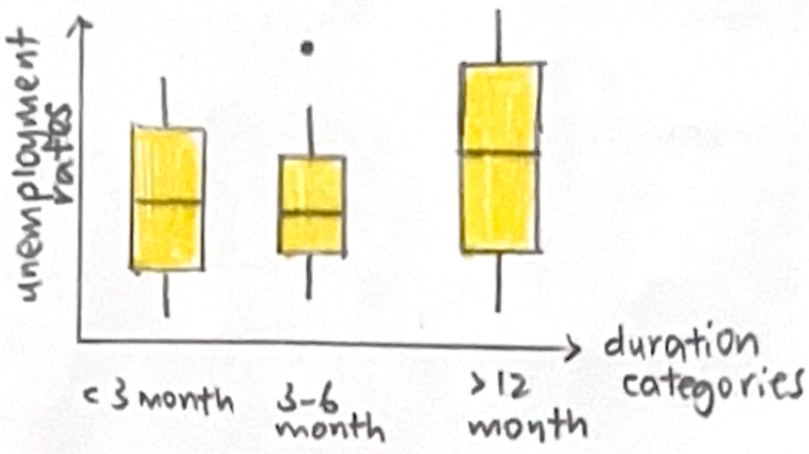
b) Stacked bar chart



c) Slope chart



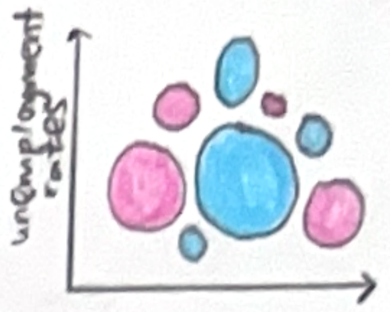
d) Boxplot



② Quantitative attributes

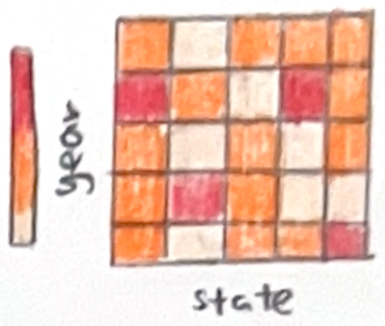
a) Scatterplot

b) Bubblemap

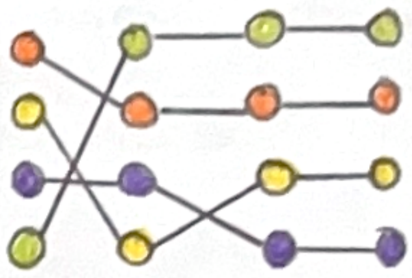


c) Choropleth map

d) Heatmap

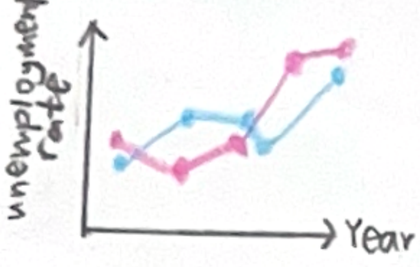


e) Bumpchart

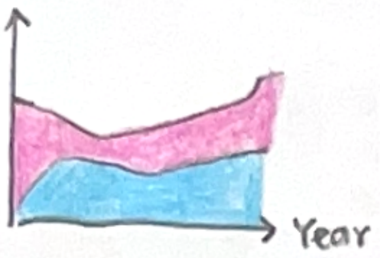


③ Temporal attribute

a) Line chart

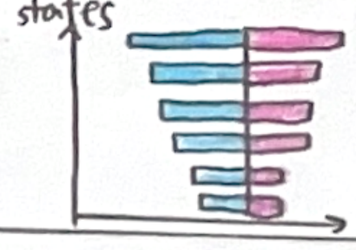


b) Stacked area chart



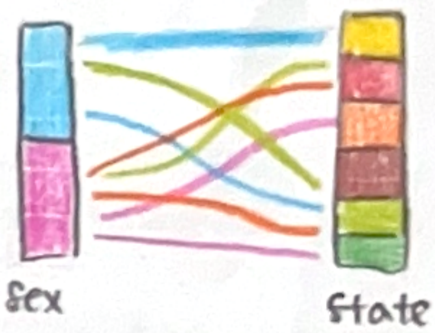
e) Donut chart

f) Diverging bar chart



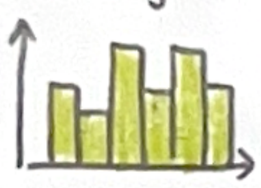
f) Histogram

g) Sankey Diagram



FITRER

2f) Histogram



- show overall distribution of values, doesn't reveal who/where/when
- remove this as we have boxplots which can show spread and outliers more meaningfully

COMBINE & REFINE

- combine stacked area chart with line chart (urban vs rural), so that users can views the overall unemployment rate trends across years by sex & stratum

CATEGORIZE

Unemployment attribute

Categorical

- state (e.g Johor..)
- sex (male, female)
- stratum (urban, rural)
- age group (e.g youth, 15-24, ...)
- duration group
- category type (overall, youth, long-term)

Quantitative

- unemployment rate (%)
- number of unemployed
- duration (months)
- proportion/share (%)

Temporal attributes

- year (1982-2020)
- month
- year-month combination

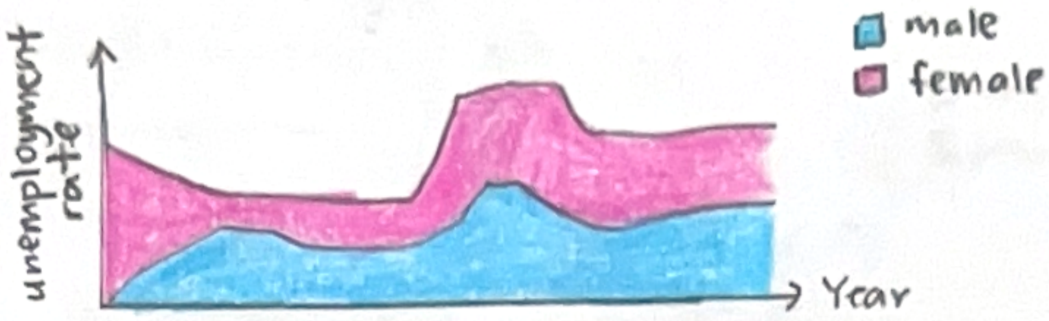
QUESTIONS

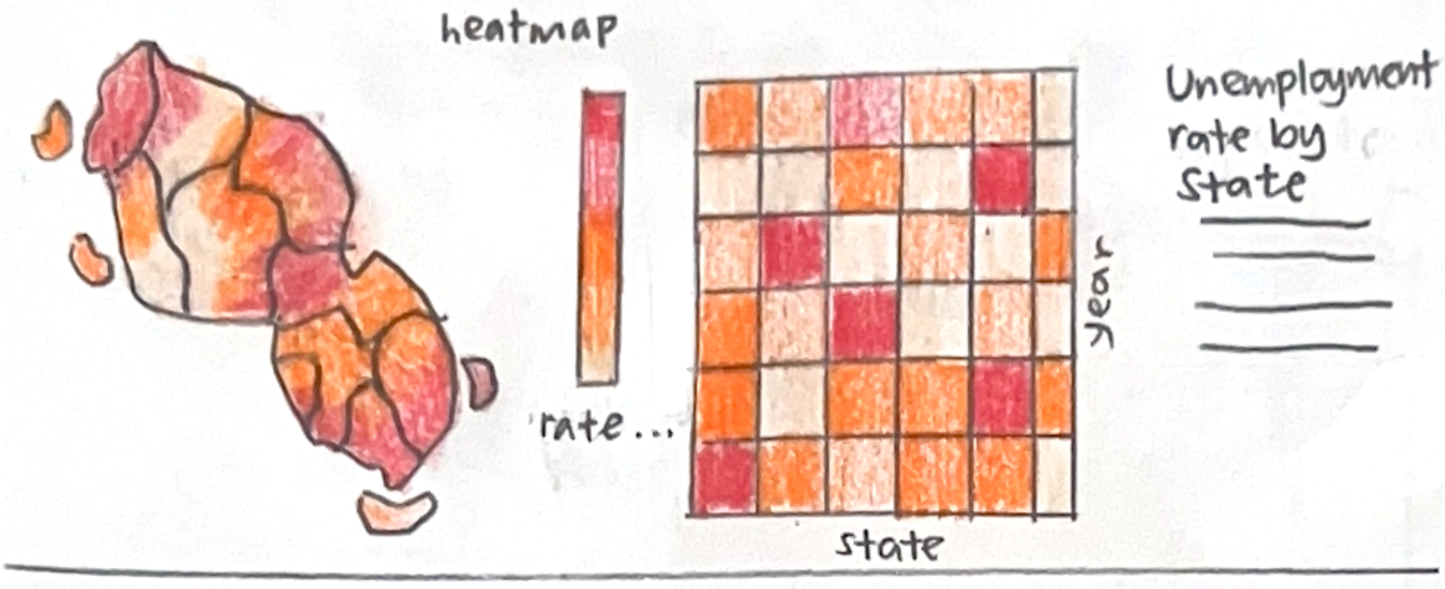
1. Who is the main audience of this visualisation?
2. Can the audience acts on the findings?
3. What insights can the audience gain?
4. Does the choice of charts make the audience to know the story clearer or confusing?
5. How well does the design balance detail with accessibility?

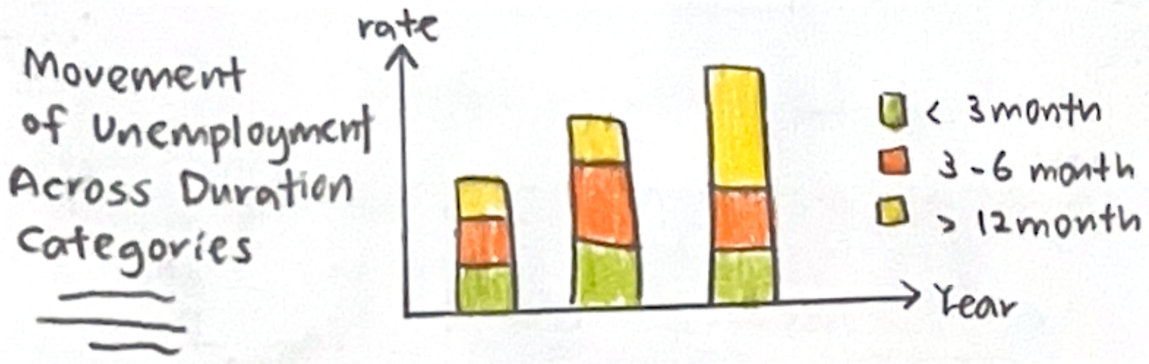
LAYOUT

Unemployment in Malaysia : Trends, Demographics and State Variation

Unemployment is a key indicator of Malaysia's economic health, but it is not evenly distributed. It varies significantly by location, gender and duration.







FOCUS

→ no main focus, all graphs in the poster are equally important

① Stacked area chart
→ instead of only showing total employment over time, it could show how different categories (male vs female) contribute to overall unemployment trends.

② Choropleth map
→ uses latitude & longitude data to create a spatial representation of unemployment rate by state, so that audience can instantly connect unemployment to geography, which is harder to detect from tabular data

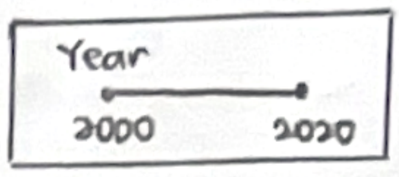
③ Heatmap
→ encodes both time and state variation in single compact grid, color intensity makes it easy to spot persistently high unemployment states

④ Stacked bar chart
→ shows the breakdown of unemployment by demographic groups in a given year, helps to show structural issues.

Title : Partitioned Poster
Author : Yeo Yu Xuan
Date : 20 September 2025
Sheet : 2
Task : Design an infographic poster

OPERATIONS

1. Filtering & selection
→ users can choose the range by filtering
• Year (2000 - 2020)



2. Tooltips on hover
→ shows unemployment rate, state, duration categories

DISCUSSIONS

Advantages

- Scalable for storytelling where poster layout allows a clear flow: overall trend → geography → detailed breakdowns
- clear structure so the audience can easily understand the story flow
- partitioning allow audiences for step by step exploration rather than overwhelming them at once

Disadvantages

- Choropleth map depends heavily on color scale. Small states may be visually overshadowed by larger states
- Heatmap can become visually overwhelming if there are too many years / states

LAYOUT

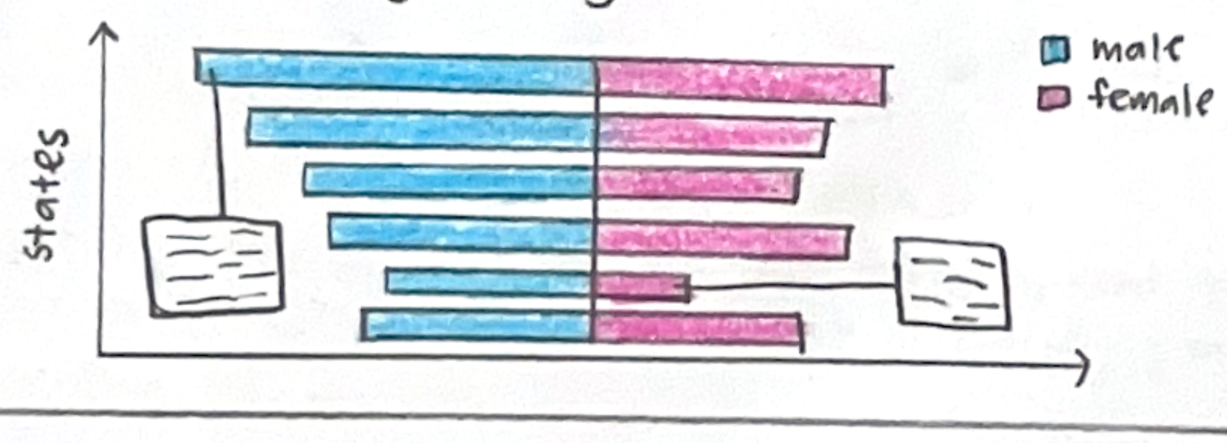
Unemployment in Malaysia :
A Story of States, Times, and People

Exploring four decades of unemployment data by state, gender and demographics

Why UnEmployment matters ?

UnEmployment Person Around the State

UnEmployment by Gender



FOCUS

→ scrollable story means that narrative unfolds gradually, allows audience engaged with it and could guide them step by step

① Line chart

→ rather than a single unemployment curve, two separate gender-based lines allows audience to see how unemployment rates for male and females diverge and converge across decades

② Choropleth map

→ uses geographic boundaries and color intensity to encode unemployment rates across Malaysia's 13 states and 3 federal territories

③ Diverging bar chart

→ bars extend left and right from central axis, with males on one side and females on the other.

→ this arrangement makes difference immediately clear without needing mental subtraction

Title : Magazine style

Author : Yeo Yu Xuan

Date : 20 September 2025

Sheet : 3

Task : Design a scrollable story-like poster

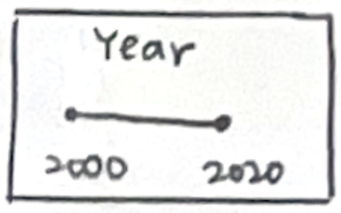
OPERATIONS

1. Scroll-to-reveal

→ charts and texts will appears progressively, so that can guide audience through the story

2. Filter by year

→ allows audience to focus on specific time periods (2000-2020)



3. Hover tooltips

→ Highlights state, male/female and shows exact unemployment rate

DISCUSSION

Advantages

→ line chart shows clear visual separation of male vs female patterns

→ strong storytelling flow, like reading an article, keeps audience engaged

→ audience can see which states are most affected through chloropleth map

Disadvantages

→ Choropleth map causes small states may be visually minimized

→ linear scrolling means less overview at once, hard to compare the chart side by side

Title : Slideshow
Author : Yeo Yu Xuan
Date : 20 September 2025
Sheet : 4
Task : Narrative Slideshow

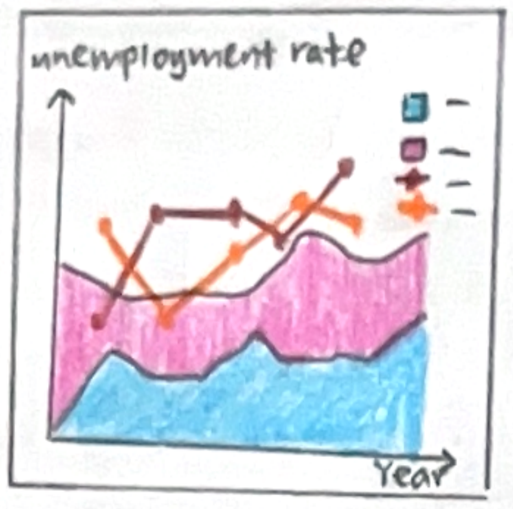
LAYOUT

1. Title & Content

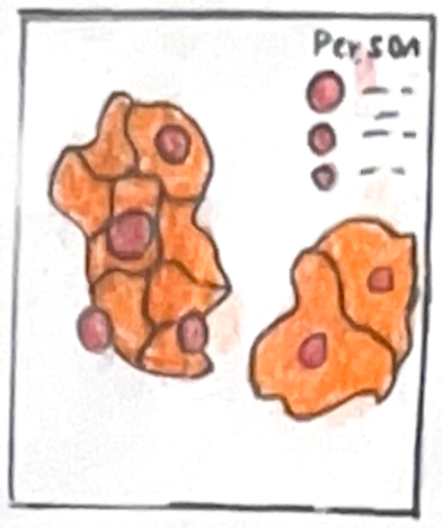
Unemployment in Malaysia: Time, People and Place

How has unemployment changed across states, genders and years ?

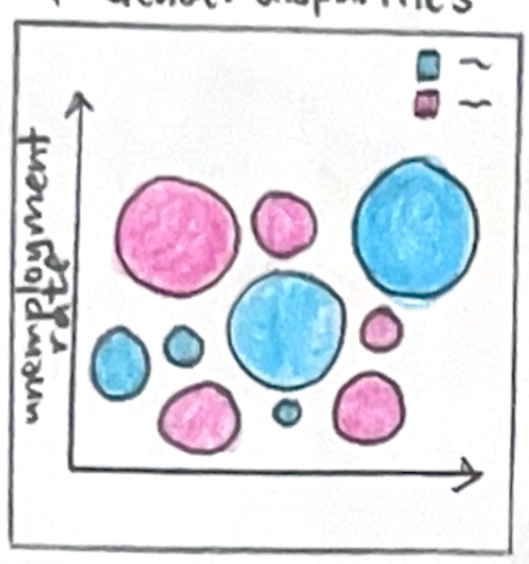
2. Overall Trend



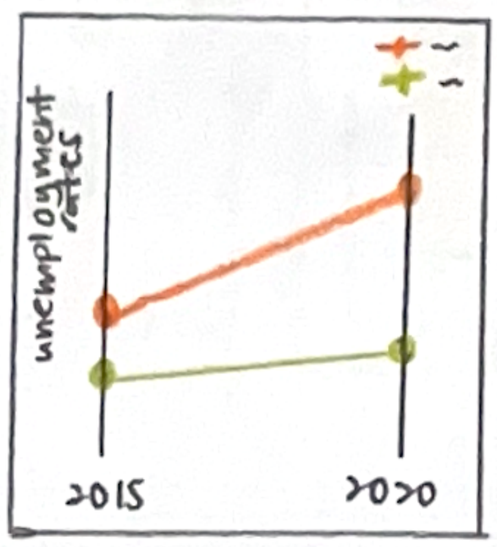
3. Geographic Distri.



4. Gender disparities



5. Urban vs Rural



6. Key Insight & Conclusion

3 Takeaways

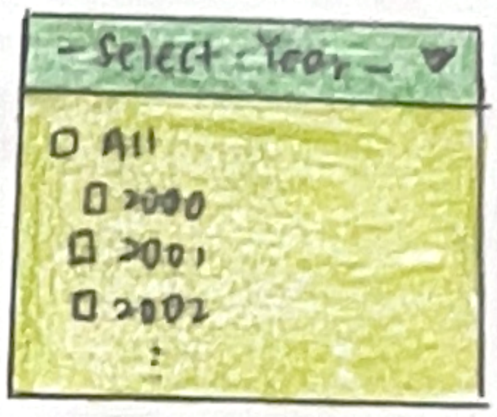
1. Unemployment closely tracks economic crises
2. Stong regional disparities persist
3. Gender gap in unemployment .....

OPERATIONS

1. Filtering & Selection

→ users can choose the year by filtering it

- Year (2000 - 2020)



2. Hover

→ highlight one category /state
→ tooltips show state name, unemployment rate

FOCUS

1. Stacked area chart + line chart combination

→ overlays line chart on top of stacked area chart
→ audience can see at a glance whether unemployment rises because of all groups collectively or due to specific groups dominating the composition

2. Bubble chart

→ each bubble encodes both size (magnitude of unemployed individual) and color (sex)
→ Shows relative contribution of sex to national unemployment, not just raw values

3. Choropleth map

→ color the states according to unemployment rate
→ create spatial anchor for the rest of the analysis

4. Slope chart for before - after comparison

→ shows unemployment at two points in time with a line connecting the values
→ highlights which stratum improved and which worsened, which a story that is harder to tell with area charts or trendlines

DISCUSSIONS

Advantages

→ have clear logical flow, covering time (area/line), space (map), scale (bubble) and change (slope), thus provide a multi-faceted story.
→ slope chart makes it easy to see which stratum improved or worsened over time
→ variety of chart keeps audience engaged

Disadvantages

→ bubble chart hard to compare the bubble sizes precisely
→ audience may feels switching between many chart types harder to follow

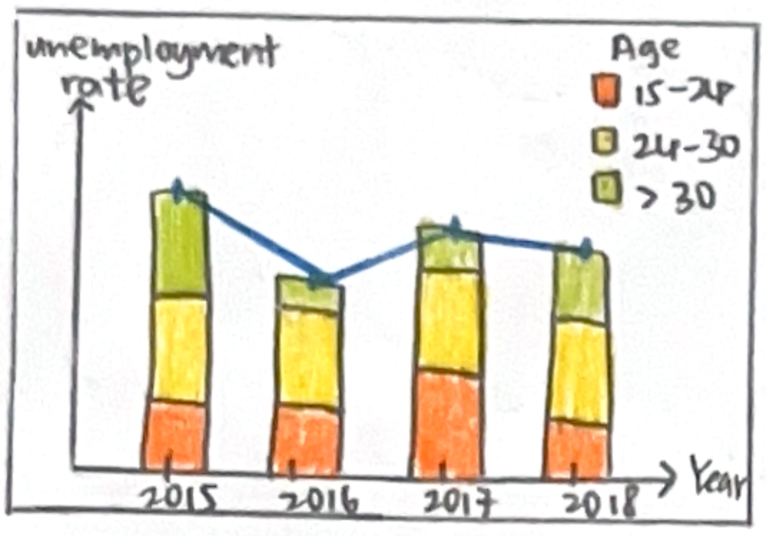
Title: Final Design Sheet
Author: Teo Yu Xuan
Date : 20 September 2025
Sheet : 5
Task : Final Design derived from Sheet 2

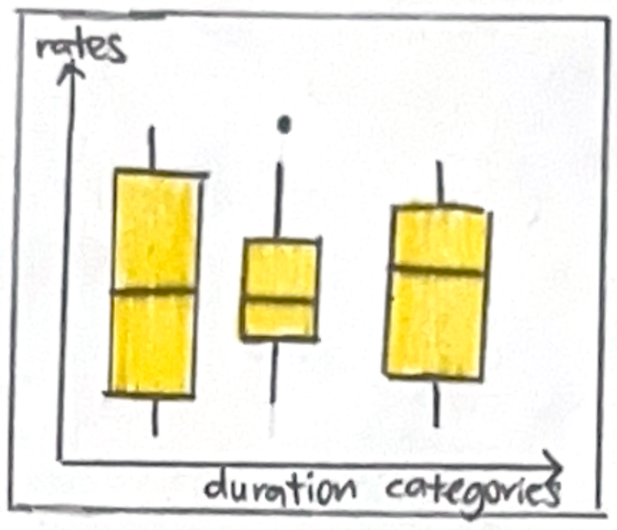
LAYOUT

UnEmployment Patterns in Malaysia
Trends, Demographic & State

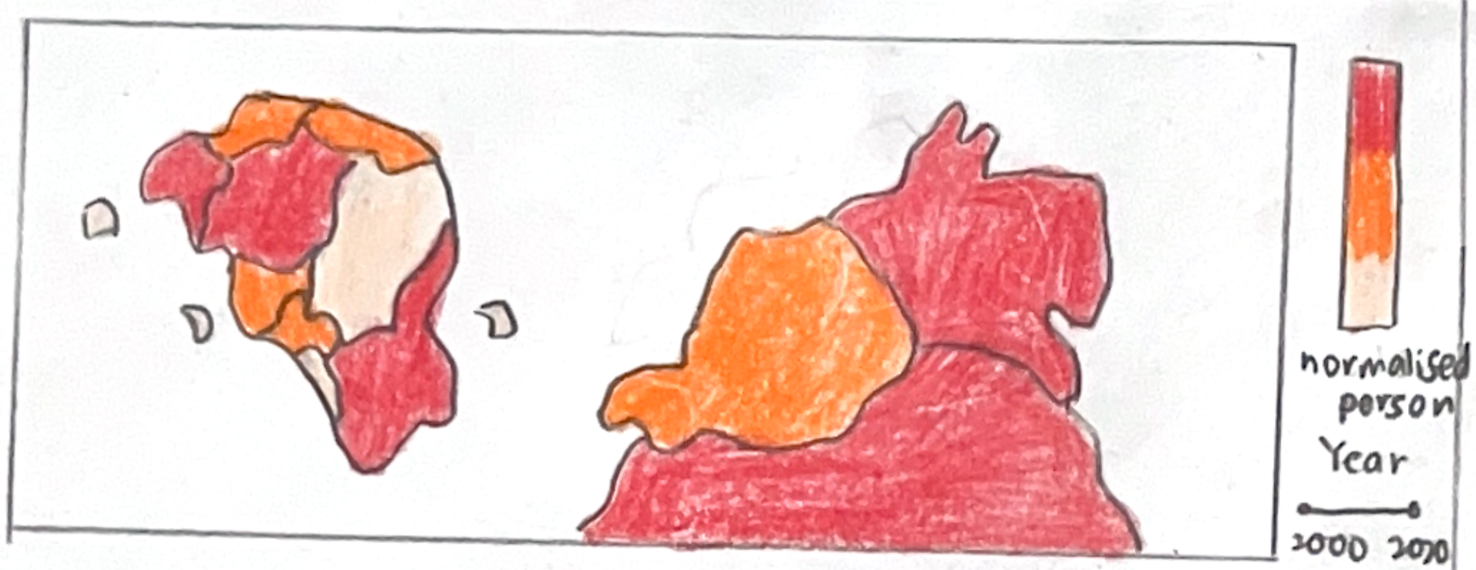
The latest labour report released by Department of Statistics Malaysia shows that unemployment rate remained steadily at 3.0% in June 2025.

TRENDS

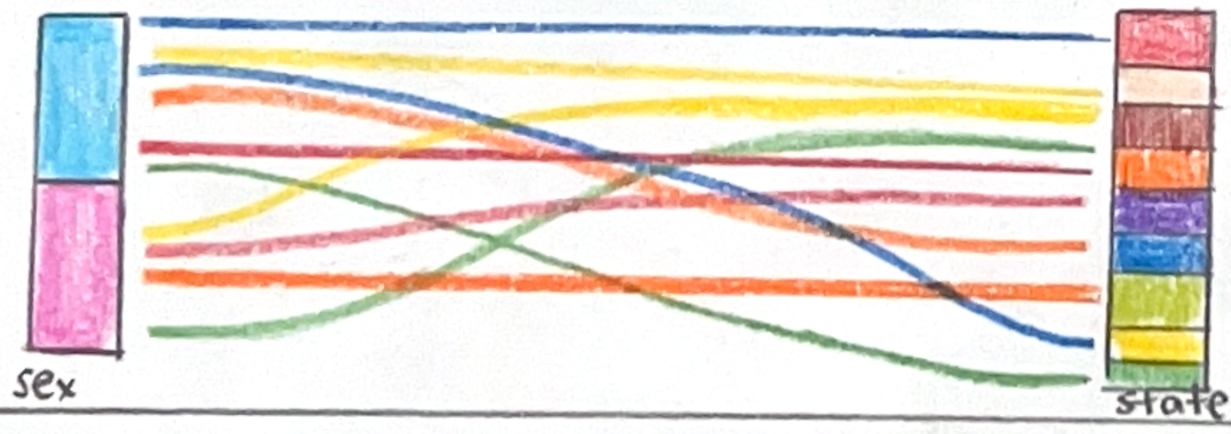




DEMOGRAPHIC

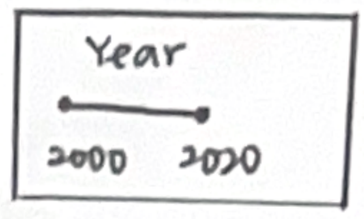


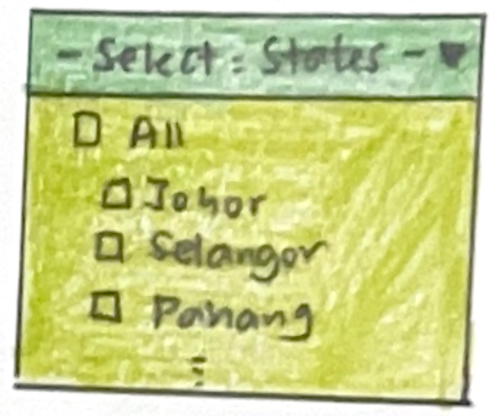
STATE



OPERATIONS

1. Filtering
→ user can filter by year (2000 - 2020) or by states





2. Tooltips
→ hovering to show unemployment rates / distribution statistics, sex categories / states

DETAILS

① Description of algorithms
→ Stacked bar + line chart
bar = age categories
line = unemployment rate
→ boxplot
summarises distributions of unemployment across duration categories using quartiles, outliers, whiskers
→ choropleth map
encodes unemployment rate with colour states
→ sankey diagram
visualises flow between sex & states

② Dependencies
→ Vegalite for chart rendering
→ Pandas / Numpy for data cleaning
→ TopoJSON for Malaysia Map boundaries

③ Estimated time
→ Data cleaning & preprocessing : 2 hours
→ Data visualisation : 2 days
→ Typography, annotations, refinement : 5 hours

④ Specific requirements
→ laptop to build visualisation
→ Stable internet to access Vegalite online editor

FOCUS

→ all charts are equally important, no main focus chart

① Stacked bar + line chart
→ dual encoding of categorical and temporaral patterns in one view

② Boxplot
→ summarise spread and outliers of unemployment rates across duration categories

③ Choropleth map
→ colours encode unemployment intensity across Malaysia's state using geo-coordinates

④ Sankey diagram
→ show flow between categories (sex & states)
→ make relationship between structural factor and outcomes tangible