Ideas

Sheet 1

Name: Lee Xin Ai
Date: 8 Oct 2025
Title: Malaysia's 15th General Election (GE15) in 2022.

stacked bar

Tree Map

Proportional Area

Multilevel Pie

Parliament chart/unit chart

line chart

heatmap.

Porportional symbol map

choropleth map.

lollipop

bar chart histogram.

pie chart

Bubble plot

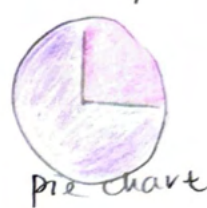area Chart/ density plot.
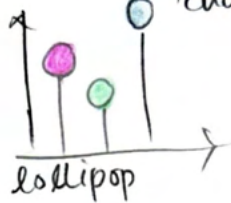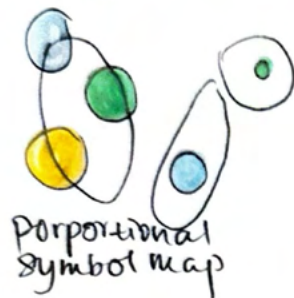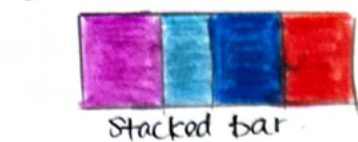
donut chart

group bar

population pyramid.

Filter

- Treemap & Proportional Area → visualize using area

- Grouped bar & stacked bar. → categorize in group.

- lollipop & bar chart.

- pie chart & donut chart.

- line chart & area chart.

Categorise

- show 1 categorical & 1 numeric → unit/bar.
- show categorical in map → choropleth map
- show quantitative in map → proportional symbol + choropleth
- show frequency → histogram + densityplot.
- show 2 categorical & 1 numeric → heatmap/ bubble plot/ grouped bar.
- show composition → pie/ donut/ stacked bar proportional area /unit.

Combine & Refine

- unit chart + treemap → show seat distribution and party in a coalition.

- line + bar chart → trends & average

- bubble plot → size + color encoding y-axis with categorical

- area chart → facet, become different line chart multiple small chart

Summarise & Question

1. What story to tell? What section?

2. what content is suitable to use map?

3. Data density → bubble plot, area, line chart, pie?

4. How many party should be represented?

→ To show results of GE15 → map
→ To understand voter patterns → turnout?
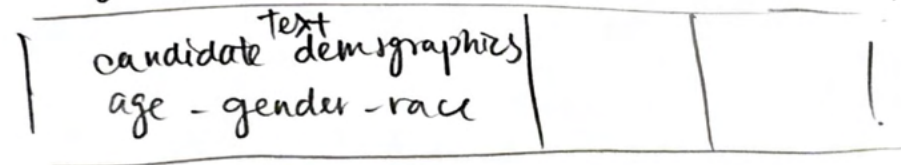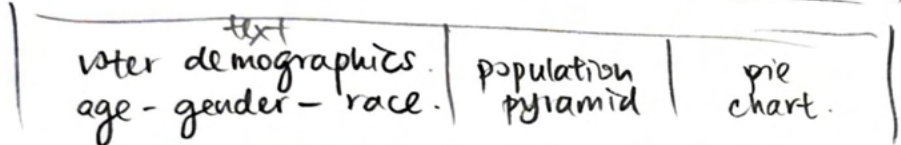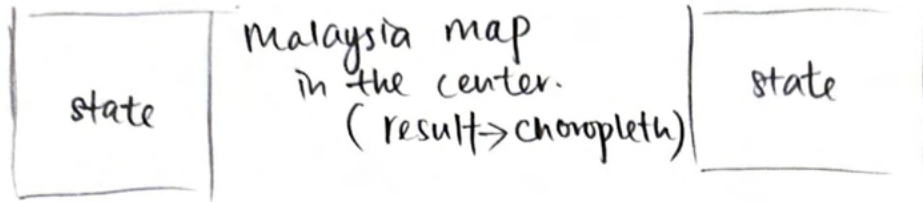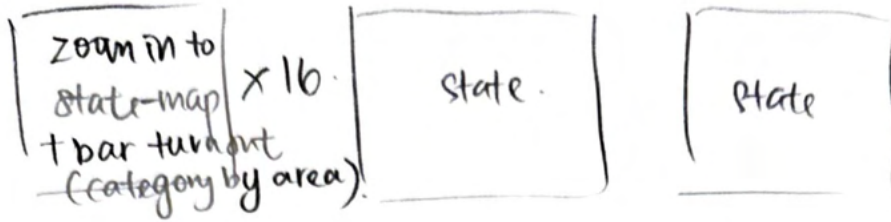→ To understand candidate → composition

Big Picture / Layout

style → partitioned poster

zoom in to state-map ×16 + bar turnout (category by area)	state	state
state	Malaysia map in the center. (result → choropleth)	state
state	state	state

voter demographics ^{text} age - gender - race	population pyramid	pie chart
candidate ^{text} demographics age - gender - race		

Operations

1. click legend to filter winning party across all map → global filter. include state map

2. hover to get detail.

Focus

1. choropleth map — nation level
   - use categorical color schema
   - annotate state name winning party

2. choropleth map - state level. + bar chart — constituency level. } up & down

average turnout of the state.
rural   urban

contain 16 states in Malaysia.

3. population pyramid — age & gender for both voter & candidate.

4. pie chart → race for both voter & candidate.

Pros & Cons

Pros:
1. global filter winning party to dive more deeper into the distribution.
2. nation map (big) + state (small) help reader understand Malaysia geography.

Cons:
1. many small state map → 16 states
2. Implementation of global filter. to do research.
3. No data sources for population pyramid. (age × gender as key).

Big Picture / Layout
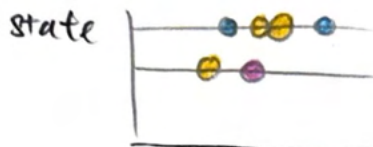
Title

result — unit chart / parliament chart
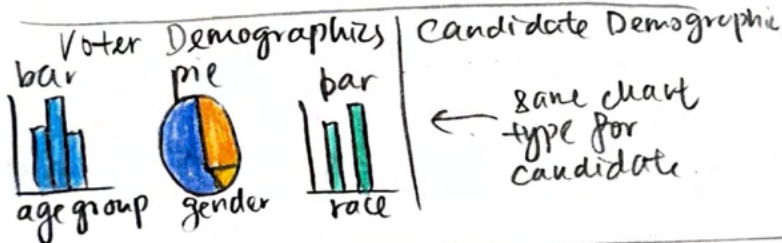

result — choropleth map (malaysia).

Voter Turnout section

bubble plot — color by area classification

state

line chart — trends from ge11-ge15.
turnout

state
as a
line

Voter Demographics | Candidate Demographic

bar   pie   bar

age group gender race

← same chart type for candidate.

Focus

1. choropleth map — color by winning party.
   & unit chart — detail map to constituency.

2. bubble plot — color by area class.
   size by population.

3. line chart — grey line for all state
   after select state, highlight
   state line.

4. bar / pie chart for voter & candidate.
   — use highlight color for max/min.

Sheet 3
Name: Lee Xin Ai
Date = 11 Oct 2025
Title: Malaysia's
15th General
Election (GE15)
in 2022.

Operations

1. zoom scale for map
   → explore the constituency

2. dropdown menu for map
   filter state to focus.

3. click legend (color)
   for filtering area class
   in bubble plot.
   → explore each area class
   voter turnout patterns.

4. line chart, drop down
   menu to filter state
   to focus state voter
   turnout trends from
   GE11 (2004) to GE15.

Pros & Cons

Pros:
1. Interavity of the map
   help reader understand
   malaysia geography &
   GE 15 result.

2. Voter turnout focus on
   state-level, more clean
   chart, 16 states instead
   of 222 constituency.

Cons:
1. parliament chart is
   not supported by vega-lite.

2. Unable zoom & pan a
   map in vegalite.
   When zoom scale the map
   get zoom into the gap
   between west & east malaysia.
   (ocean part).

3. Rely on interavity to
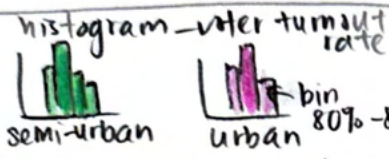   get clear data view.

Big Picture / Layout

Sheet 4
Name: Lee Xin Ai
Date: 11 Oct 2025
Title: Malaysia's 15th
General Election
(GE15) in 2022.

Title

 lollipop   text

 malaysia map.

state map   text

histogram — voter turnout rate

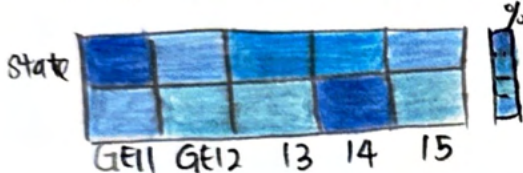rural   semi-urban   urban   bin 80%-85%   Text

State

GE11 GE12 13 14 15   text

donut chart for all   voter/candidate demographics.

                gender
                male/female
text   text   text

Operations

1. malaysia choropleth map - click legend to filter winning party.

2. State map - default view is KL. Use drop down menu to filter state.

3. heatmap - dropdown menu filter peninsular or east malaysia.

Pros & Cons

Pros:

1. zoom into state but keep nation view, reader can reference state name from nation map.

2. histogram for each area class show trends & patterns clearly.

3. heatmap can read clear by color schema.

Cons:

1. Too many party as categorical.

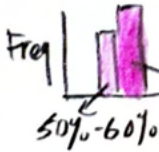2. Voter/candidate demographics age & race too many categorical values. for donut chart.

Focus

1. lollipop chart focus on compare each winning party seats in parliament. Add majority reference line.

2. malaysia choropleth map focus on result of GE15 across whole nation. Add annotations → state name.

3. State map → choropleth map → zoom in from the map above (malaysia map). focus on more detail level. To choose state.

4. histogram focus on frequency of voter turnout %.

Freq
        60%-70%.
50%-60%

5. heatmap — voter turnout rate trends

Big Picture / Layout

Title

(layout grid with line chart, choropleth maps, bar charts, heatmap, donut charts)

- legend
- click
- State: [▾]
- Region: [▾]

Name: Lee Xin Ai

Date: 12 Oct 2025

Title: Malaysia's 15th General Election (GE15) in 2022.

Description: Results, voter turnout, demographic profile of voter & candidate.

Operations

1. Nation choropleth map - click legend to filter winning party across whole malaysia.

2. State choropleth map - dropdown menu choose state, default is Kuala Lumpur.

3. Heatmap - dropdown menu to filter region. Ex. east msia, Federal Territory, west msia..

4. hover to show detail.

Details

1. Voter Turnout Rate

$$= \frac{\text{vote cast}}{\text{Total registered voters}}$$

2. Race > Indigenous includes Malay, bumiputera from Sabah/Sarawak & orang asli.

3. Winning Party name. use short form but show full name in tooltip.

4. heatmap - GE11 to GE15 state-level data is using aggregate constituency vote cast & total registered voters then calculate rate %.

5. Coalition now include many parties inside, use only the main & from wikipedia information.

Focus

1. Results of GE 15 :
   ① lollipop (sorted)
   ② choropleth map (nation) with state name annotation.
   ③ choropleth map (state)

2. Voter Turnout Patterns :
   ① histogram (facet) 3 area classification - rural, semi-urban, urban frequency → count of constituency in the range.
   ② heatmap - trends from GE11 - GE15.

3. Voter Demographics : &
4. Candidate Demographics :
   ① bar (for age & race). age group 18-21. many groups
   ② donut chart (for gender) only male/female.