

FIT 3179 - Five Design Sheet - Data Visualization 2

Saturday, 11 October 2025 20.25

Sheet -1

Ideas

① **Choropleth Map**

② **Bar chart**

③ **Line chart**

④ **Bubble chart**

⑤ **Scatter plot**

⑥ **Pie chart**

⑦ **Map Series**

Filter

① **Scatter plot** => similar purpose to bubble chart but less in parameter

⑥ **Pie chart** => not as strong for complex datasets

⑦ **Map Series** => can become repetitive when combined with main choropleth

Category

Category A

① => Most direct way to visualize data across Australia's geography

⑦ => Poor for comparing categories accurately

Category B

② => Simple, accurate, compares the change by tracking numerical precision

⑥ => doesn't scale well when we have more than few categories

Category C

③ => clean way to demonstrate decline over years

④ => more narrative and context that the line chart alone

Category D

⑤ => applies multi-variable and add 2nd variable

⑥ => bubble chart already perform this function but with extra dimension

Combine & Refine

① & ⑦ can be refined because they both visualize smoking prevalence across Australia states

② & ① can be combined because it reinforces spatial data with precise numerical comparisons

③ can be refined because it can include annotations or shaded areas to highlight key changes

③ & ⑥ can be combined because it adds narrative context, linking changes in smoking trends

④ can be refined because the scaling and colour scheme can be improved to show clearer relationships between smoking rates, income, education level

⑤, ⑥, ⑦ are excluded because they duplicate or oversimplify insights already presented more effectively through the chosen visual

Summarise and question

-> How can choropleth map and bar chart be visually linked to provide both geographical and numerical insights without overcrowding the layout?

-> what is the most effective way to combine line chart and timeline so the policy events clearly align with changes in smoking trends?

-> How can colour schemes and scales be standardised across all graphs to maintain visual consistency and improve user interpretation?

-> could an interactive dashboard format better communicate these visuals together compared to static charts?

Sheet 1 Name: Jansen Tjai Date: 9 October 2025

Components / operation

Components:

- Base Map (Top): Administrative boundaries for Australian states and territories
- Colour encoding: light to dark
- Legend
- Tooltip -> display name of state and percentage for daily smokers
- Title & Subtitle
- Annotation

Operations

- Hover over a region -> tooltip appears
- click -> could filter or highlighted related data
- Responsive resizing for better layout on different screens

Pro & Cons

Pros:

- provides an immediate spatial overview of smoking behaviour across Australia
- easy to understand for general audiences

Cons:

- Limited detail - only shows averages per state, not by city or demographic
- colour differences can be misinterpreted if scale isn't consistent

Sheet -2

Big Picture / Layout

Daily Smoking

- WA -> 10%
- NT -> 10%
- QLD -> 10%
- SA -> 10%
- NSW -> 10%
- VIC -> 10%
- TAS -> 10%

Parti / Focus

The main focus of this visualisation is spatial comparison - showing where smoking is more common across Australia

The design emphasis:

- clear regional contrast through a consistent colour gradient (light to dark)
- interactivity to engage users and reveal deeper data upon hover
- A balanced projection that includes Tasmania and smaller territories clearly

=> The goal is to help viewer visually connect geography with public health patterns

Sheet 2/3/4 Name: Jansen Tjai Date: 9 October 2025

Title: FIT 3179 - 5 Design Sheet (DU2)

Description: Sheet Number 2

Components / operation

Components:

- Base Map (Top): Administrative boundaries for Australian states and territories
- Colour encoding: light to dark
- Legend
- Tooltip -> display name of state and percentage for daily smokers
- Title & Subtitle
- Annotation

Operations

- Hover over a region -> tooltip appears
- click -> could filter or highlighted related data
- Responsive resizing for better layout on different screens

Pro & Cons

Pros:

- provides an immediate spatial overview of smoking behaviour across Australia
- easy to understand for general audiences

Cons:

- Limited detail - only shows averages per state, not by city or demographic
- colour differences can be misinterpreted if scale isn't consistent

Sheet -3

Big Picture / Layout

Parti / Focus

The focus of this visualisation is quantitative comparison - showing how much each state differs in smoking prevalence

The bar chart complements the choropleth map by:

- Reinforcing regional differences with precise numerical values
- Emphasising ranking (highest vs lowest smoking states)
- Maintaining colour consistency to visually connect with map

=> The key message is to clearly show magnitude of difference between regions in a straightforward

Sheet 3/3/4 Name: Jansen Tjai Date: 10 October 2025

Title: FIT 3179 - 5 Design Sheet (DU2)

Description: Sheet Number 3

Components / operation

Components:

- Base Map (Top): Administrative boundaries for Australian states and territories
- Colour encoding: light to dark
- Legend
- Tooltip -> display name of state and percentage for daily smokers
- Title & Subtitle
- Annotation

Operations

- Hover over a region -> tooltip appears
- click -> could filter or highlighted related data
- Responsive resizing for better layout on different screens

Pro & Cons

Pros:

- easy to interpret and compare exact values between states
- works well alongside the map for combined storytelling

Cons:

- not spatially informative (loses geographic context)
- can appear repetitive when paired with a map if not styled distinctly

Sheet -4

Big Picture / Layout

Parti / Focus

The focus of this visualisation is temporal and causal understanding - helping viewers see how specific events might have influenced smoking trends

It draws attention to:

- overall decline in smoking overtime
- correlation between public health interventions and changes in rates
- encouraging viewers to connect data trends with real-world actions

By combining a line chart with timeline events, this design goes beyond showing "what happened" to help explain "why it happened"

Sheet 4/3/4 Name: Jansen Tjai Date: 11 October 2025

Title: FIT 3179 - 5 Design Sheet (DU2)

Description: Sheet Number 4

Components / operation

Components:

- Base Map (Top): Administrative boundaries for Australian states and territories
- Colour encoding: light to dark
- Legend
- Tooltip -> display name of state and percentage for daily smokers
- Title & Subtitle
- Annotation

Operations

- Hover over a region -> tooltip appears
- click -> could filter or highlighted related data
- Responsive resizing for better layout on different screens

Pro & Cons

Pros:

- excellent for showing changes over time and long term trends
- The addition of events adds context and narrative depth

Cons:

- can look cluttered if too many event markers are added
- May require careful spacing and scaling for readability

Sheet -5

Big Picture / Layout

Parti / Focus

The focus is on correlation and magnitude - showing how smoking prevalence interacts with socioeconomic indicators

It allows viewers to:

- Compare how smoking prevalence relates to income or education level
- Identify which states deviate from general trend
- See the relative impact of population through bubble size

=> this type of chart encourages exploratory data insight rather than simple comparison - viewers discover relationships between multiple dimensions at once

Sheet 5 Name: Jansen Tjai Date: 11 October 2025

Title: FIT 3179 - 5 Design Sheet (DU2)

Description: Sheet Number 5

Components / operation

Components:

- Base Map (Top): Administrative boundaries for Australian states and territories
- Colour encoding: light to dark
- Legend
- Tooltip -> display name of state and percentage for daily smokers
- Title & Subtitle
- Annotation

Operations

- Hover over a region -> tooltip appears
- click -> could filter or highlighted related data
- Responsive resizing for better layout on different screens

Pro & Cons

Pros:

- use semi-transparent circles to handle overlapping bubbles
- colour palette should match the overall theme
- Maintain consistent scaling across the dashboard
- the bubble chart supports multivariate exploration (users can explore relation not just value)
- help identify outliers (e.g. states with high income but also high smoking rates)
- great for communicating that smoking prevalence is not uniform across population groups