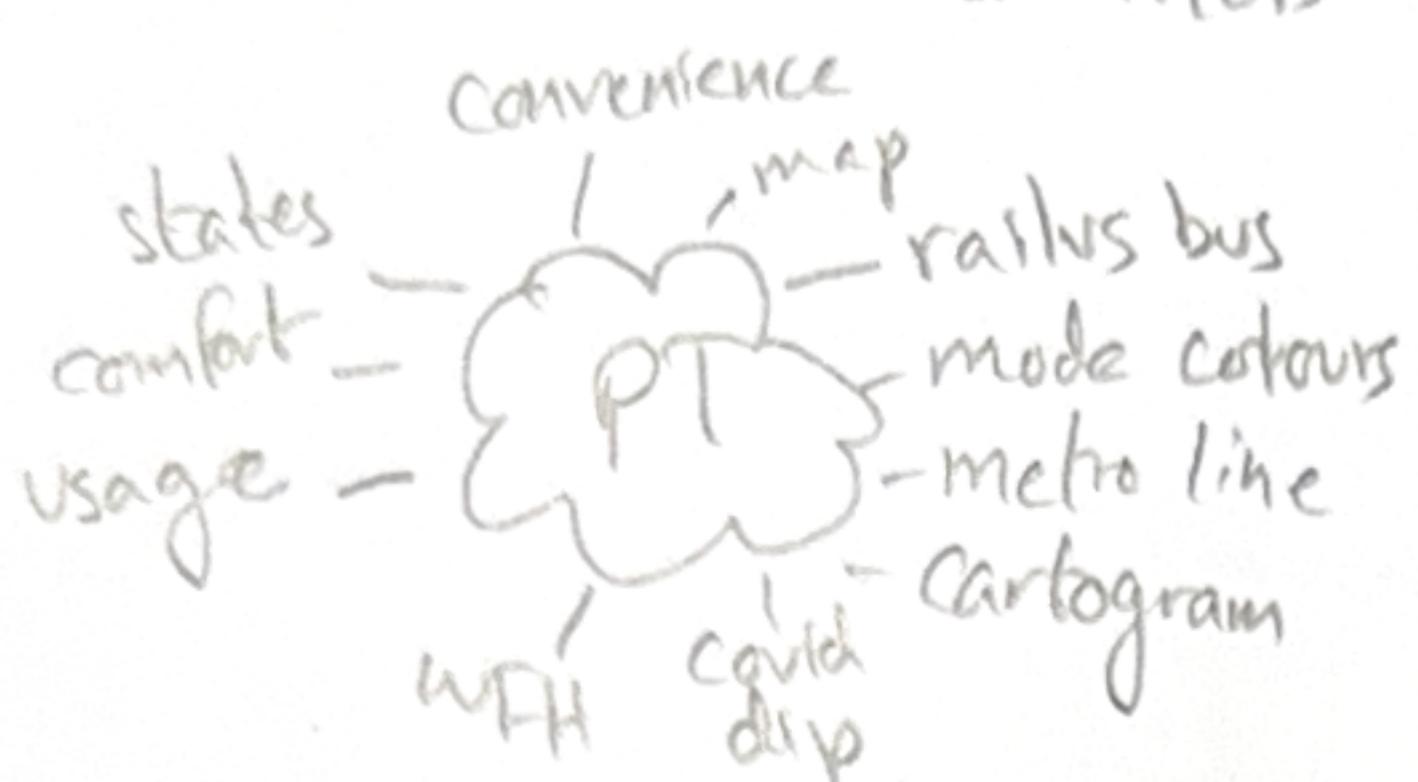
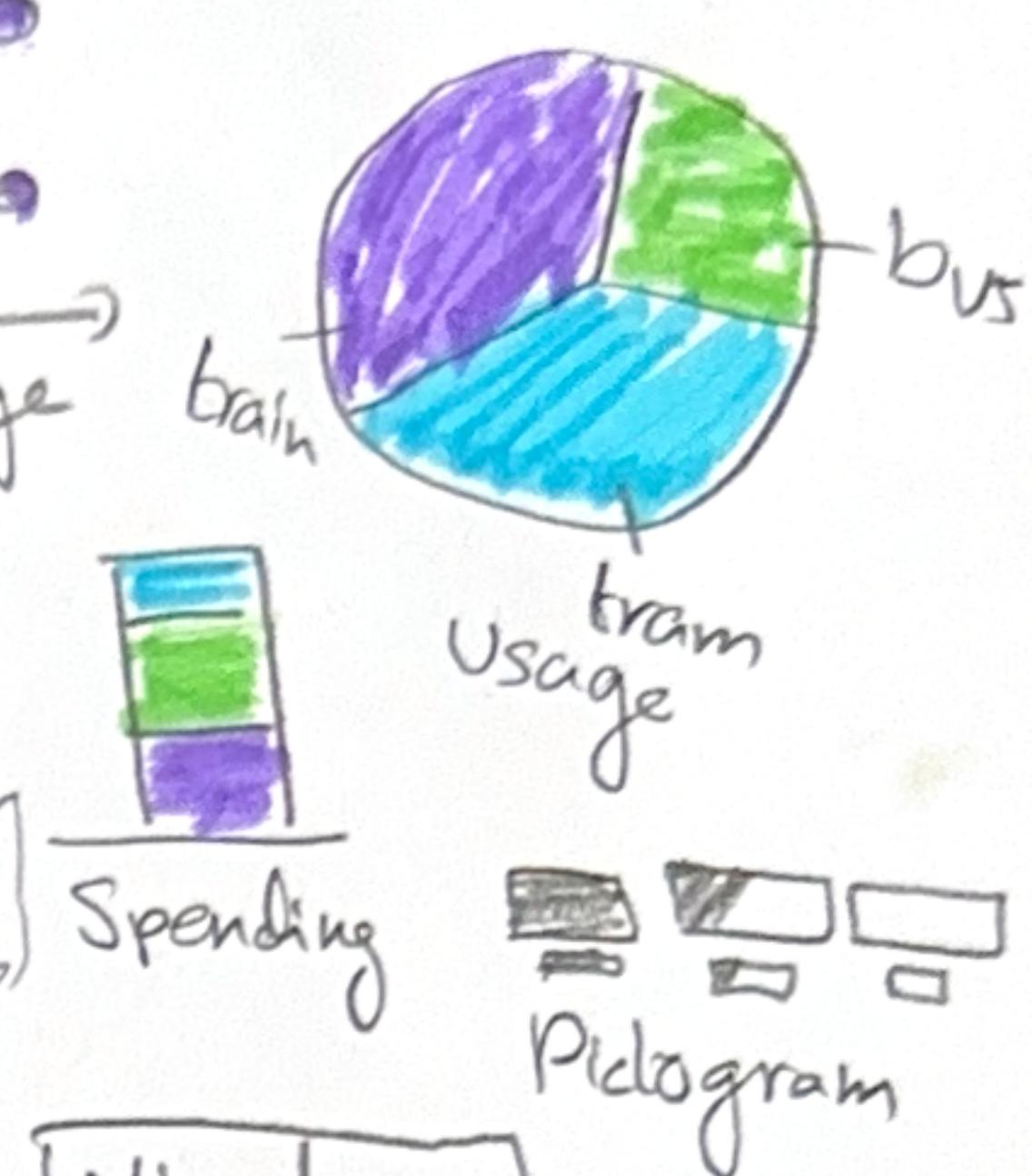
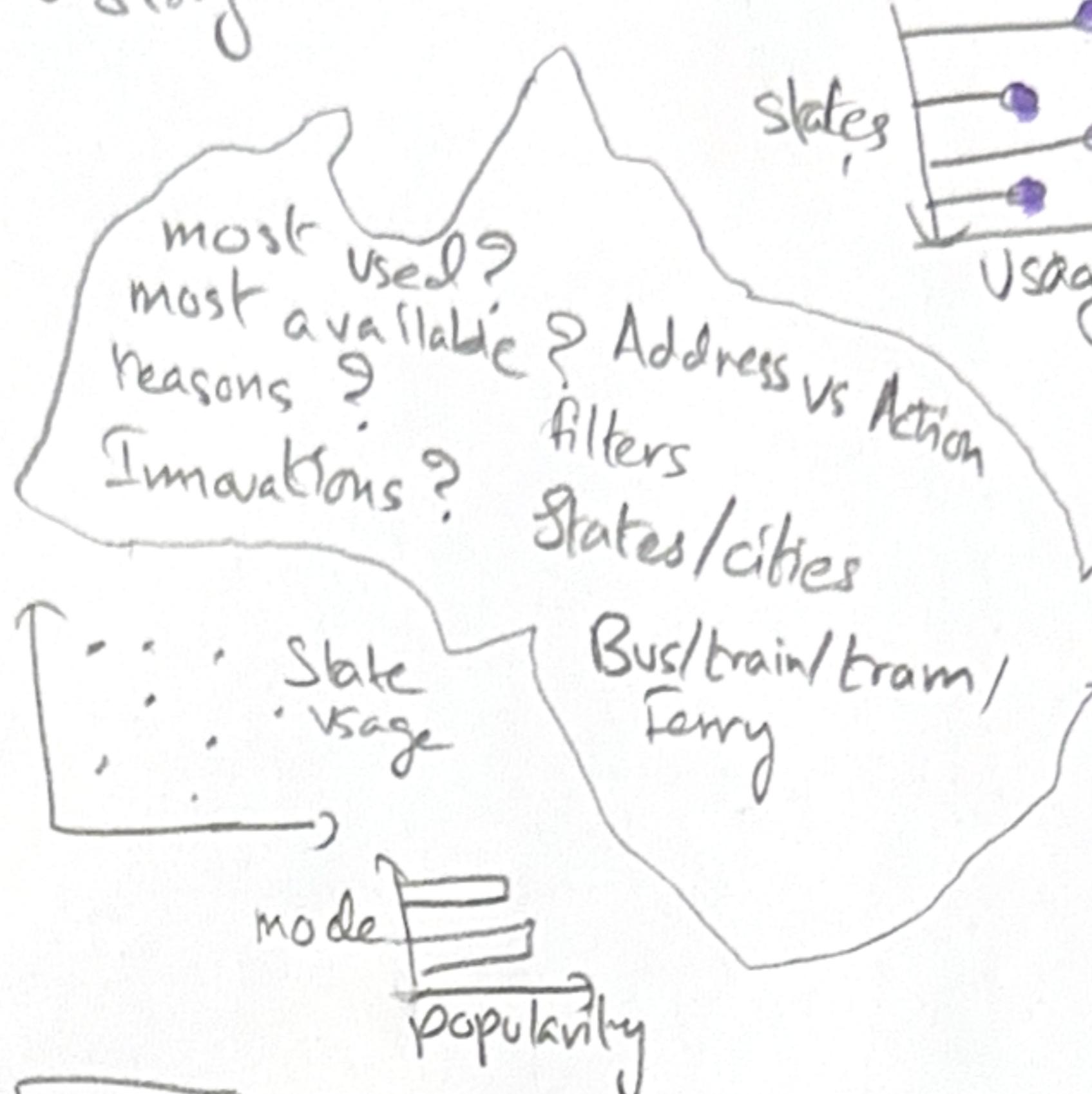


Ideas The PT Line - Exploring Australia's Public Transport Story

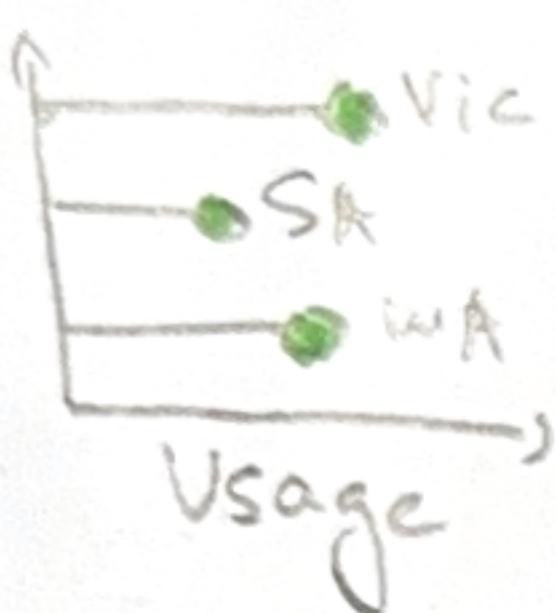
- Explain
 - Modes
 - Space
 - Time



- Audience
 - Readers
 - transport curios
 - Commuters



Filter



- Keep:

 - Lollipop
 - Bar Chart
 - Map
 - Scatter
 - Stacked

- Park (Later)

 - Cartogram
 - Transitions
 - Themes

- Drop:

 - 3d charts
 - Dual X-axis line
 - Auto playing
 - Interactions

- Constraints:

 - Data scope → restrict to available ranges
 - Accessibility → All contrast
 - Performance → container width, limited marks

Categorise State of Play

Lollipop ranking

Modal Mix

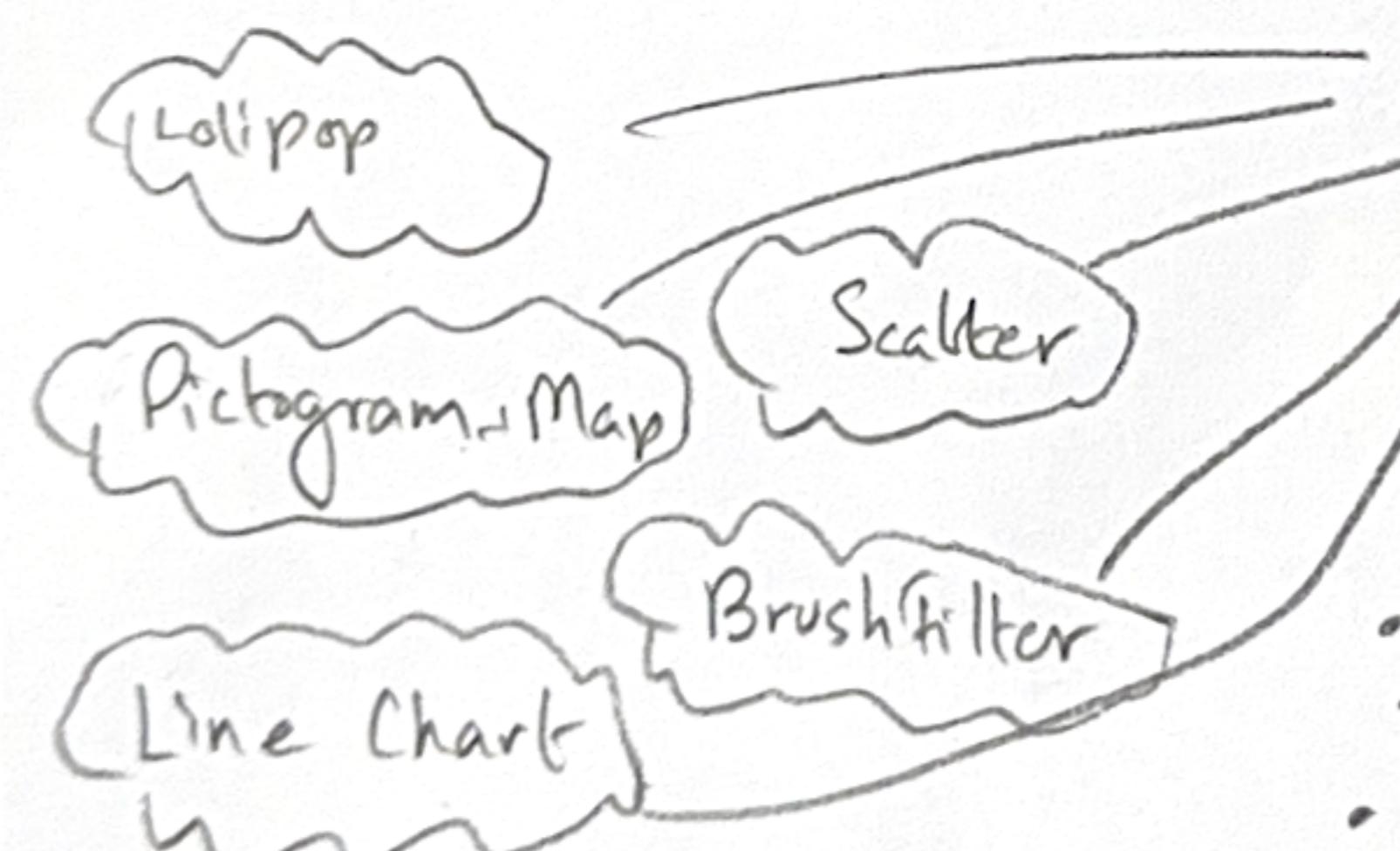
State choropleth

Access vs Action

Week - heat map States

Take aways

Combine & Refine



- Visual Forms
 - Lollipop
 - Diverging Bars
 - Pictogram
 - Choropleth
 - Scatter
 - Lines
 - Stacked Bar Chart
 - Heat Maps

Interactions/Filters

- Legend / filter
- Time Brush
- Tool tips
- Map hover
- drop down

- Data and Derivations
 - Census PT share
 - Lollipop/diverge/map
 - AU-pt-modes
 - pictogram
 - SA mode share
 - stacked bars

Derived:
join aggregate total

Assumptions
SA limited marks

- Risks / Constraints
 - Data gaps
 - Overplot
 - Map misread
 - Performance
 - Out of scope

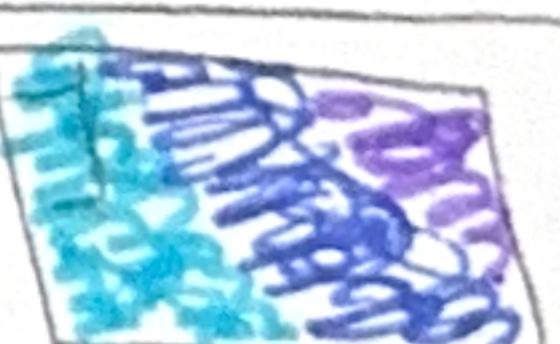
- Trial
 - Station 1 Lollipop + Diverging Bars
 - Station 2 Pictogram + Map
 - Station 3 Scatter plot
 - Station 4 Line Chart + Stacked bar chart
 - Keep One Colour theme
 - Drop: Scatter plots of small multiples

Refine / Polish

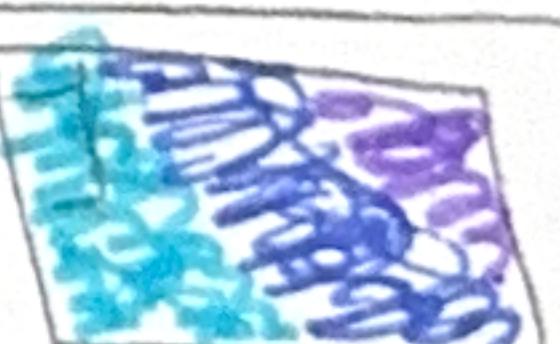
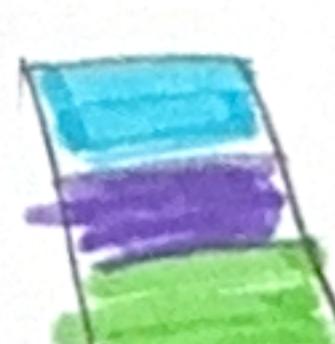
Fix alignment and simplicity of icons



Drag to select the range



- Legend
- Brush Selection
- Hide & labels

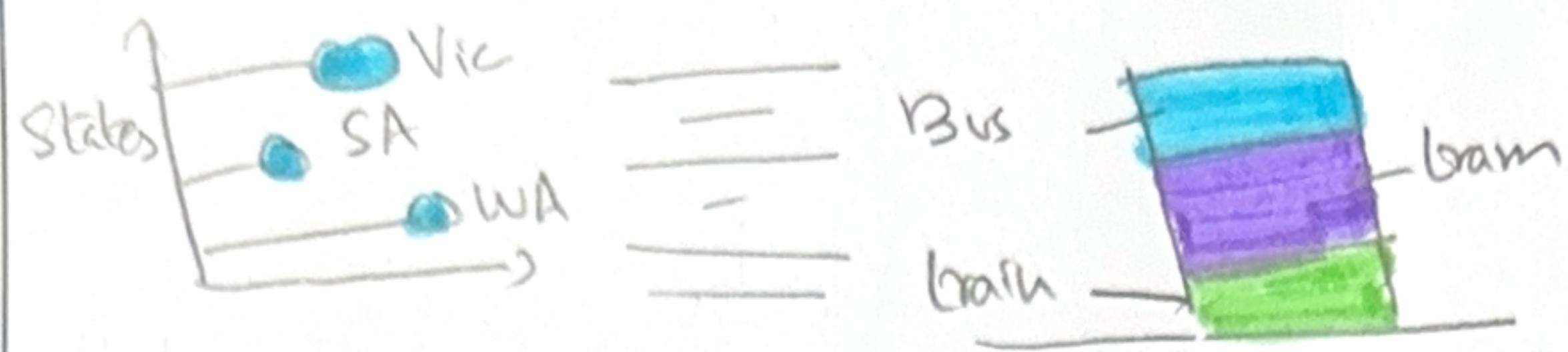


Summarise and question

- Is the brush filter obvious?
- Are all legends expressive?
- Are all tooltips informative?

Big Picture / Layout

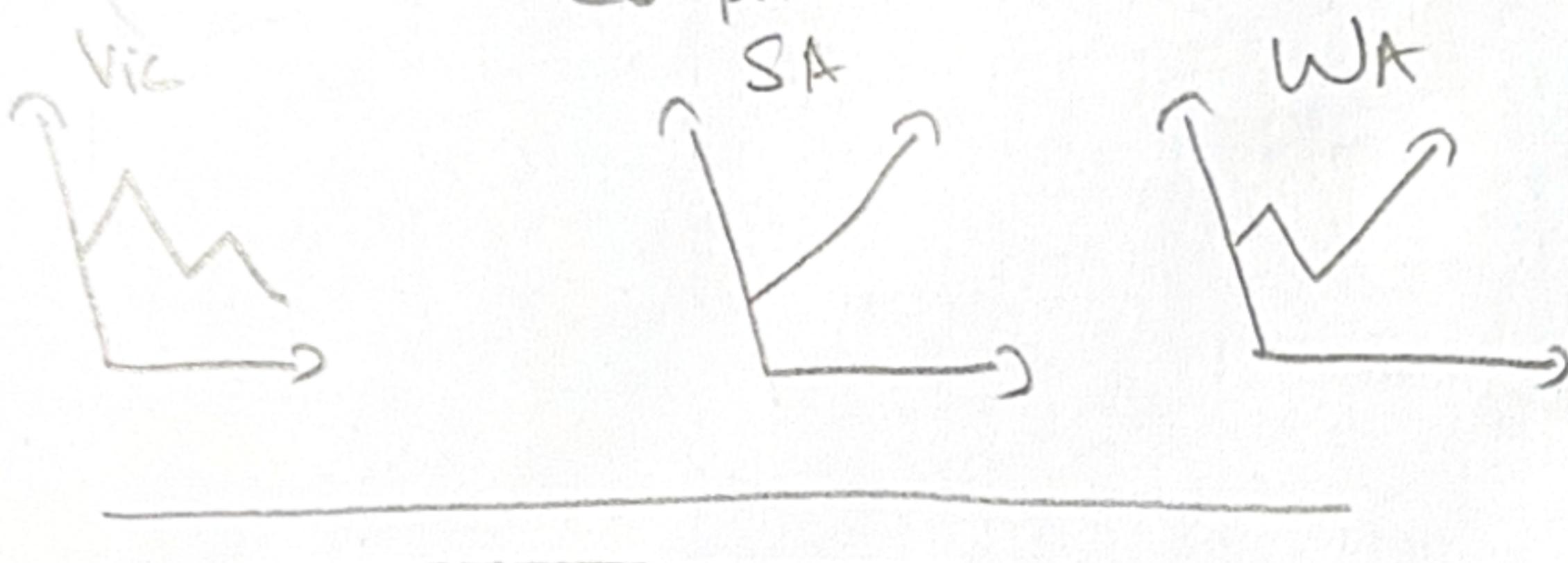
State of Play



National Picture



Comparison



Part / Focus

- focusing on sectioning the narrative to weave each section in the bigger picture to illuminate a storyline
- highlights a comparison of states to reflect on geographical factors and their effect
- Incorporating both categorical and spatial perspectives
- Multiple charts show isolation of regions

Sheet 23,4

Name Muhammad Md. Khanzada

Date 25-Sept-2025

Title Early Concepts (Made and Australian Communiting Story)

Description This is a concept for a public website. It explores how sections might be geographically connected into a single scrollable webpage and connect each other by story.

Components / Operations

- User can exclude/include states from the stacked bar chart
- Timeline filters for bubble graph and line chart multiples

Navigation idea

Data → Visual → Insight → Next Section
↑
Using links / Buttons

Pro & Cons

Pros

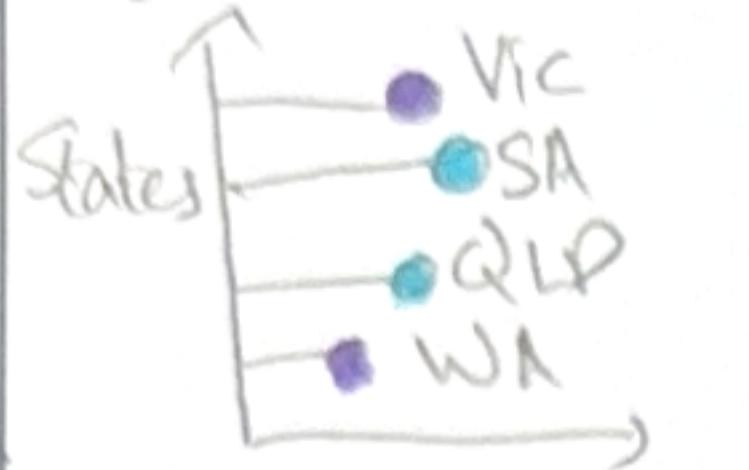
- Simple 3 part structure
- Sectioned well
- Linear storyline
- Comparative

Critiques / Regional Factors

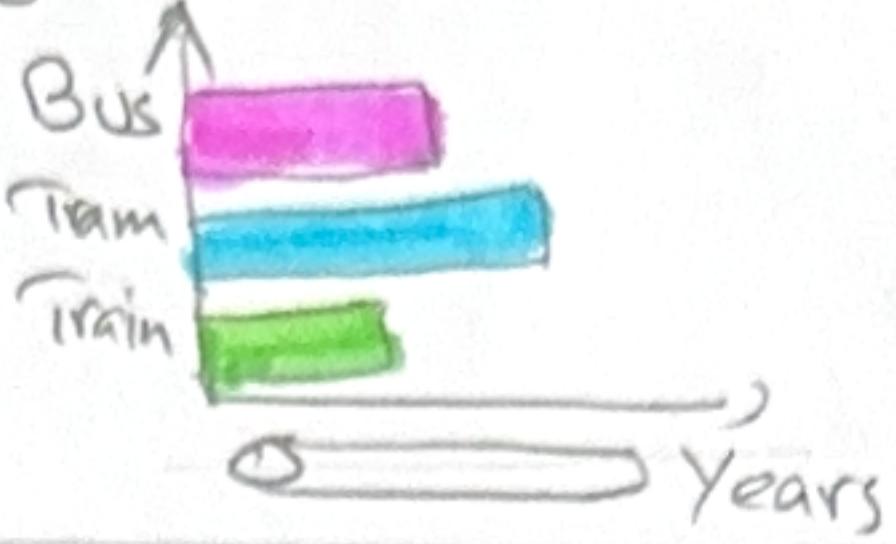
Cons No linking between visual

- No linking between Visuals yet
- limited interactivity
- Not all states present
- No summary section

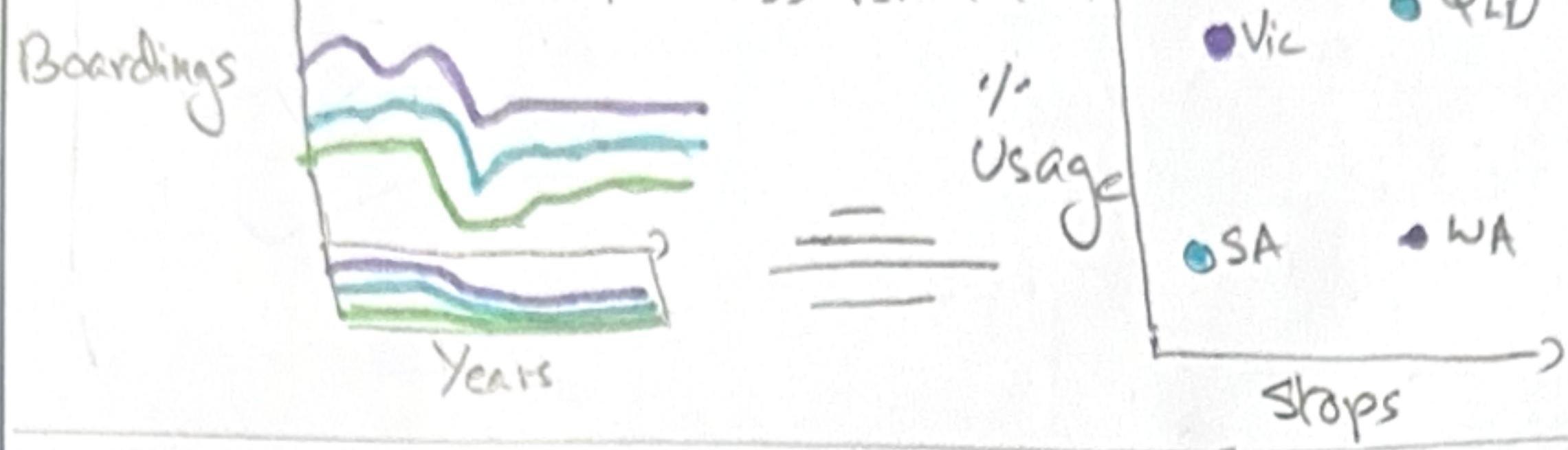
Big Picture / Layout



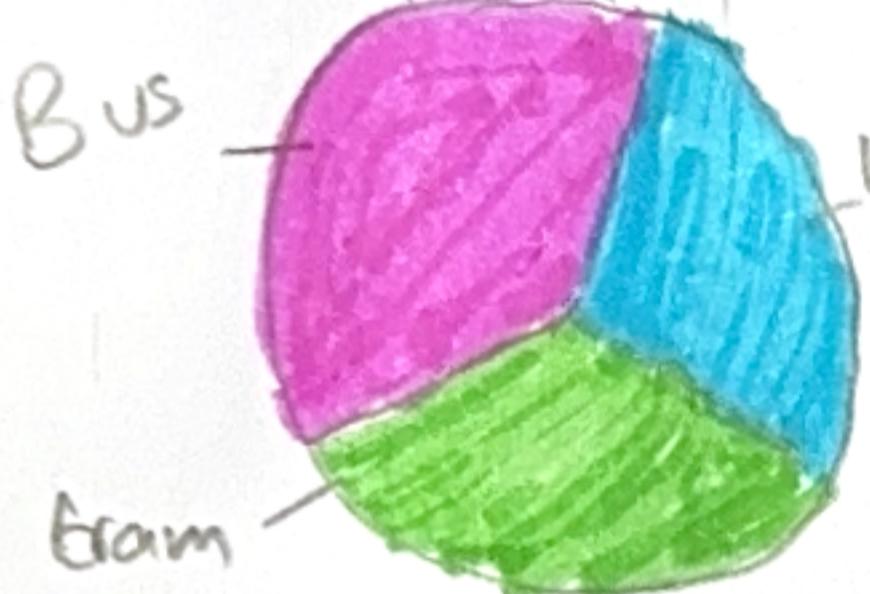
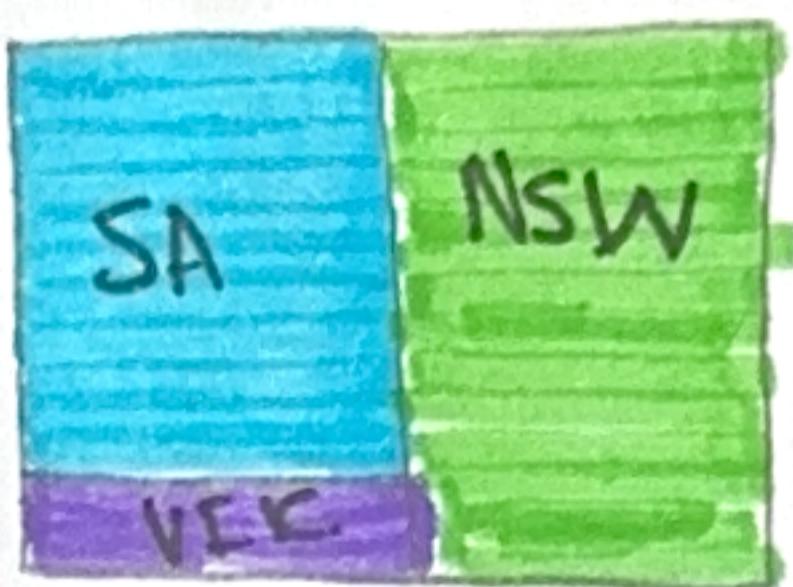
State of Play



Access Vs. Action



The National Picture



Key Takeaways

Part / Focus

- A four step narrative
 - who
 - why
 - where
 - so what
- each section has a 'job' (rank, relate, locate and conclude) to reduce cognitive overload
- Colours and encodings stay consistent
- An architectural focus on a linear storyline that explains different factors relating to the topic
- To make it more engaging by minimising the 'jobs' of each section making comparison and retention effortless

Sheet 2 (3) 4

Name Muhammad Mdrid Khanzada
Date 27 - Sept - 2025

Title The PT Line

Description A furthered structure with chapters to strengthen the narrative

Components / Operations

- The lollipop chart and bar chart use a shared legend
- The bar chart has a range bar beneath it to move through timeframes to see how the usage ratios have changed
- Hovering over states in the map gives information about the states
- Blue used in the map to show disparity between states
- The Line chart has a brush filter where you can click and drag to adjust the timeframe

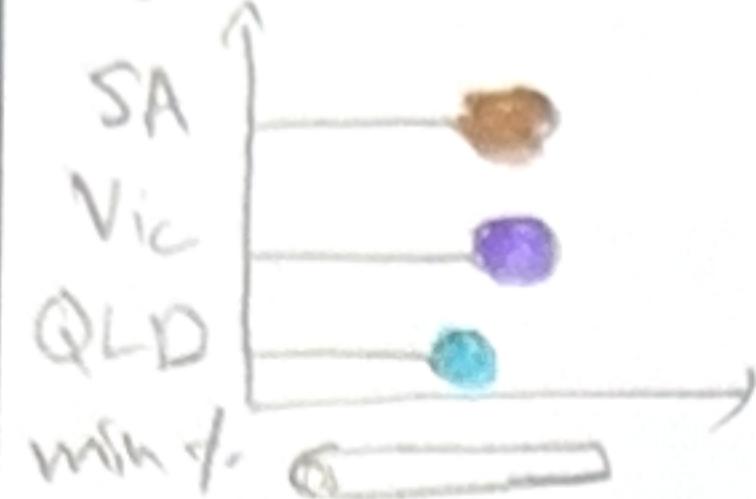
Hover → Tooltip (across all charts)

Legend Toggle → click a legend item to isolate that entity on the chart

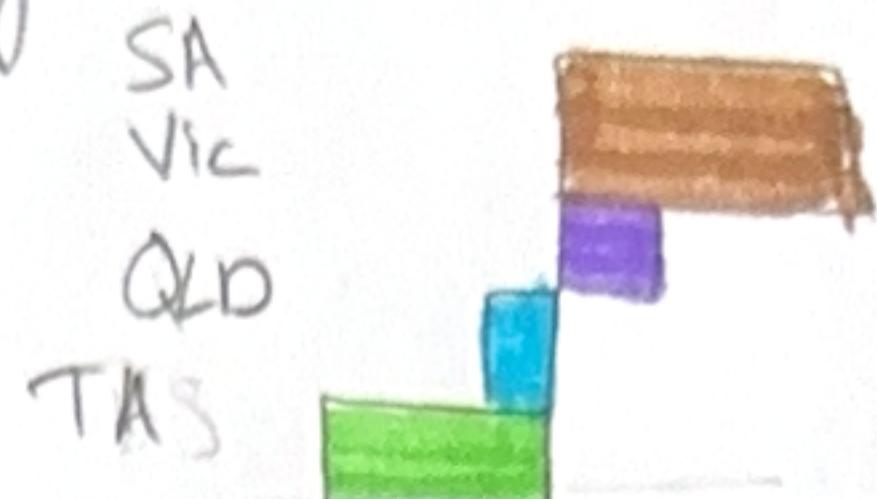
Pro & Cons Pros

- Clear section structure
- Consistent Colors
- Interactive filters
- Dual panel layouts
- Combine quantitative and qualitative insights
- Cons
- Scatter + Line chart can make the section feel too content dense
- Too many interactions
- Requires careful axis formatting
- Data relies on 2021 snapshots

Big Picture / Layout



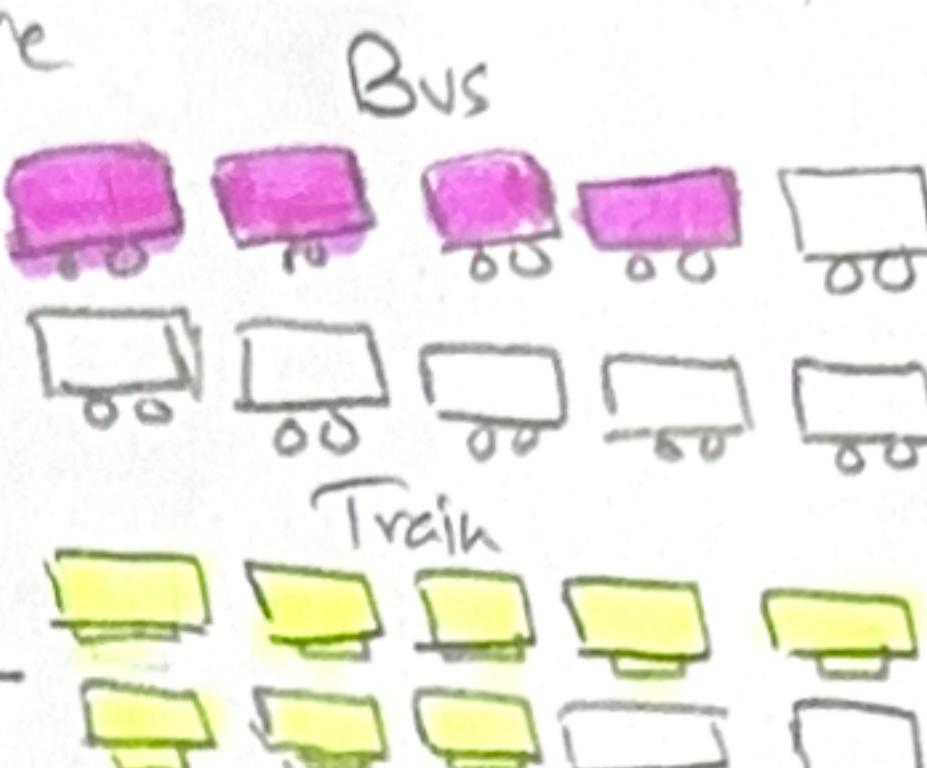
State of Play



Next →



National Picture



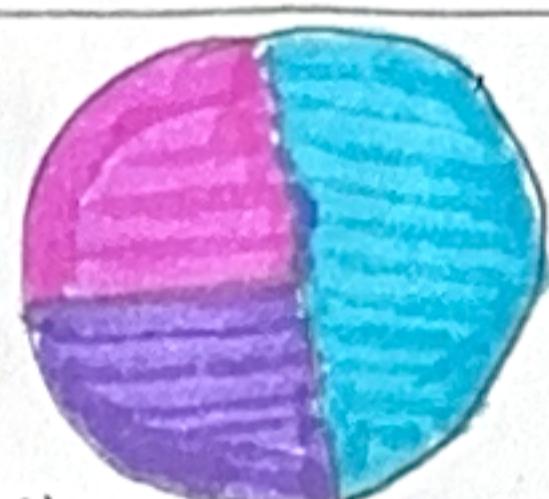
Next →



Access vs Action



Operational Pulse



Next →

Key Takeaways

Back to top

Part / Focus Rail-anchor states lead Australia's PT-commuting. Buses extend reach, trams add urban capacity and access aligns with uptake.

- focus shown on comparison of modes and states to highlight uptake and those who lead in the race.
- National Picture → presents where and how people ride
- Access vs Use → to relay if availability extrapolates use
- Showing what modes pioneer the uptake

Focal Questions

- Which states outperform/underperform vs. national average?
- Where is PT uptake geographically centered?
- Is higher stop density associated with higher usage?

Interaction Points

- Mode legend Filter
- Time brush on line chart to adjust time frame

In last section (plus takeaways), show that infrastructure + service explain Australia's PT uptake and where they don't

Sheet 2,3(4)

Name Muhammal Mohid Khanzada

Date 27-Sept-2025

Title 5 stop Narrative

Description The layout illustrates a 5-stop journey focusing on balance and readability.

Components / Operations

- Hover → tooltips with relevant information displayed for all charts
- Filter scroll on the lollipop charts lets you filter the minimum t. of usage displayed in the chart
- Buttons on the bottom of each section to help scroll to the next section and one also the bottom to take you to the top.
- Brush Filter for the line chart lets you click and drag to adjust the time frame
- Shared color scheme
- Annotations on line chart to show crash from covid

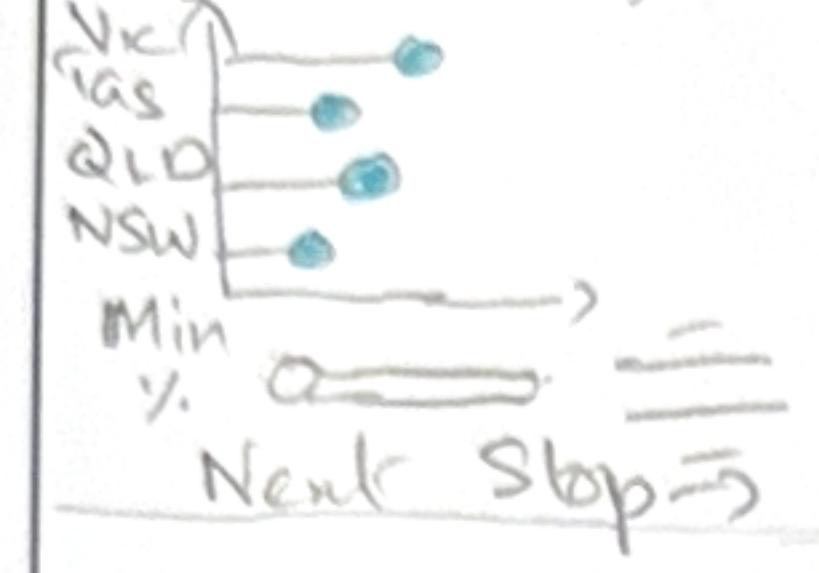
Pro & Cons Pros

- Clear linear storyline
- Consistent colors, formats and interactions reduce cognitive overload
- Annotations help grasp intended purpose of the line chart
- Balanced chart ecology
- Scannable narrative blocks
- Accessibility minded

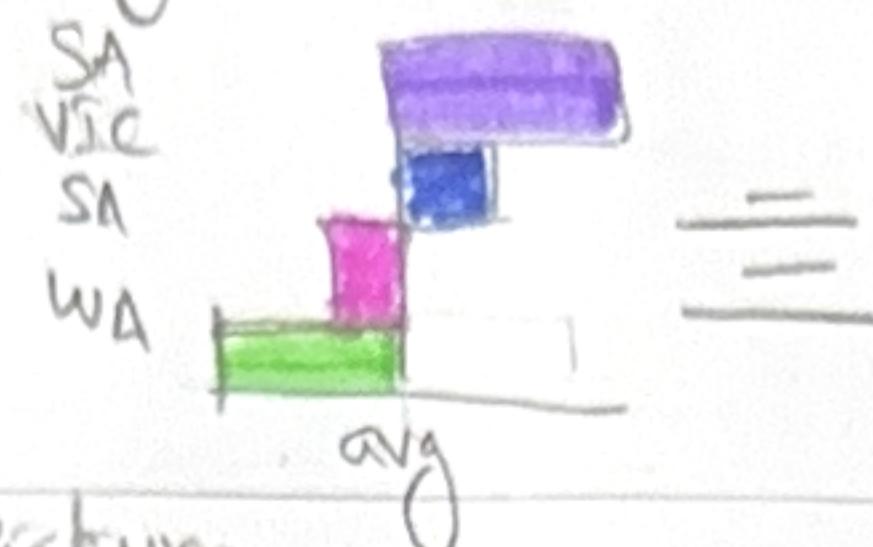
Cons

- Cumulative cognitive load (sections, interactions)
- Complexity
- Screen-size sensitive
- Data sparsity risk
- Comparability friction

Big Picture / Layout



State of Play



The National Picture



Part / Focus

- It's a human centered narrative that flows down hierachically (national → local → operational)
- Expressive and comparative of geographical factors in usage and the relationships that lead to differing modal uptake
- Construction of a linear and well segregated structure
- Imbedded with interactivity to ensure user engagement
- Minimal Interface

Sheet 5

Name Muhammad Mohid Khanzada

Date 29-Sept-2025

Title The PT Line - An Australian Commuting story

Description An interactive, narrative driven web visualisation exploring how Australians commute by public transport. It combines national and state level data to reveal differences in uptake, infrastructure and operations, the design mimics a metro line with stations, each visualising a new part of the story.

Components / Operations

- Hover → tooltups to be applied on all charts except the pictograms
- Filter scroll with the lidpop chart that adjusts the minimum t to be displayed
- Filter by mode option in the stacked bar charts to isolate the selected mode.
- Filter with the heatmap to adjust how many years of 2021 are to be displayed
- Brush filter with the line chart that lets you click and drag to select the timeframe to be shown.

Details

- Libraries: Vega Lite
- Languages: HTML + CSS + JS
- Data Sources: ABS 2021 Census, Vic DOT patronage series; Adelaide Metro 2021 Q1
- Colour scheme: Transport brand palette + accessible blue/green/orange
- Est build time: 40 hours
- Dependencies: Browser support for ES6 modules; hosted static data (< 1 MB)
- Ouput: Public GitHub page index.html with all JSON in /spec/