

### IDEAS

- ① Choropleth
  - population in states
  - house price

colour or bars for each state or bubbles
- ② Matrix plot
  - map map map
  - map map map
  - map map map

state years or a plot

slider to switch between years
- ③ Ridgeline plot
  - years

affordability ratio for housing
- ④ Slope chart
  - two census years

display each economic factor
- ⑤ Radial bar chart
  - can use a slider to change years
  - compare b/w all economic factors
- ⑥ Bubble scatter plot
  - house price
  - size = population
  - diversity

calculate an index to represent diversity for a state
- ⑦ Stacked bar chart
  - \$ wage
  - state continent

indicates weekly wage
- ⑧ Tree map
  - states showing current population/diversity
- ⑨ Line graph
  - each line represents a state
- ⑩ Heatmap
  - quarter
  - years
  - house price or inflation
- ⑪ Radar chart
  - wage
  - inflation
  - house price
- ⑫ Sankey diagram
  - country state

show flow b/w country of origin to states

### FILTER

- ⑤, ⑫ showcase the same idea  
 ↳ ⑫ doesn't look good w/ only 3 variables
- ↳ both may be misleading (higher = better/worse?)
- ⑧ → ① & ⑥ are better in showcasing proportion
- ② → use ⑥ or ① or use a dot/scatter plot
- ③ better than ①? How would states be compared in ①

### CATEGORISE

- Migration & Diversity
  - ①
- Economic factors
  - ②
  - ⑤
  - ④
- comparison
  - ⑦
  - ⑥
  - ③

### COMBINE & REFINER

- ① - incorporate economic factors?
- ⑤ - use stacked bars like in ⑦
- ② - use a line graph comparing house price vs. inflation vs. weekly wage
- ⑦ - use a connected line graph on bars to compare to an economic factor

### QUESTIONS

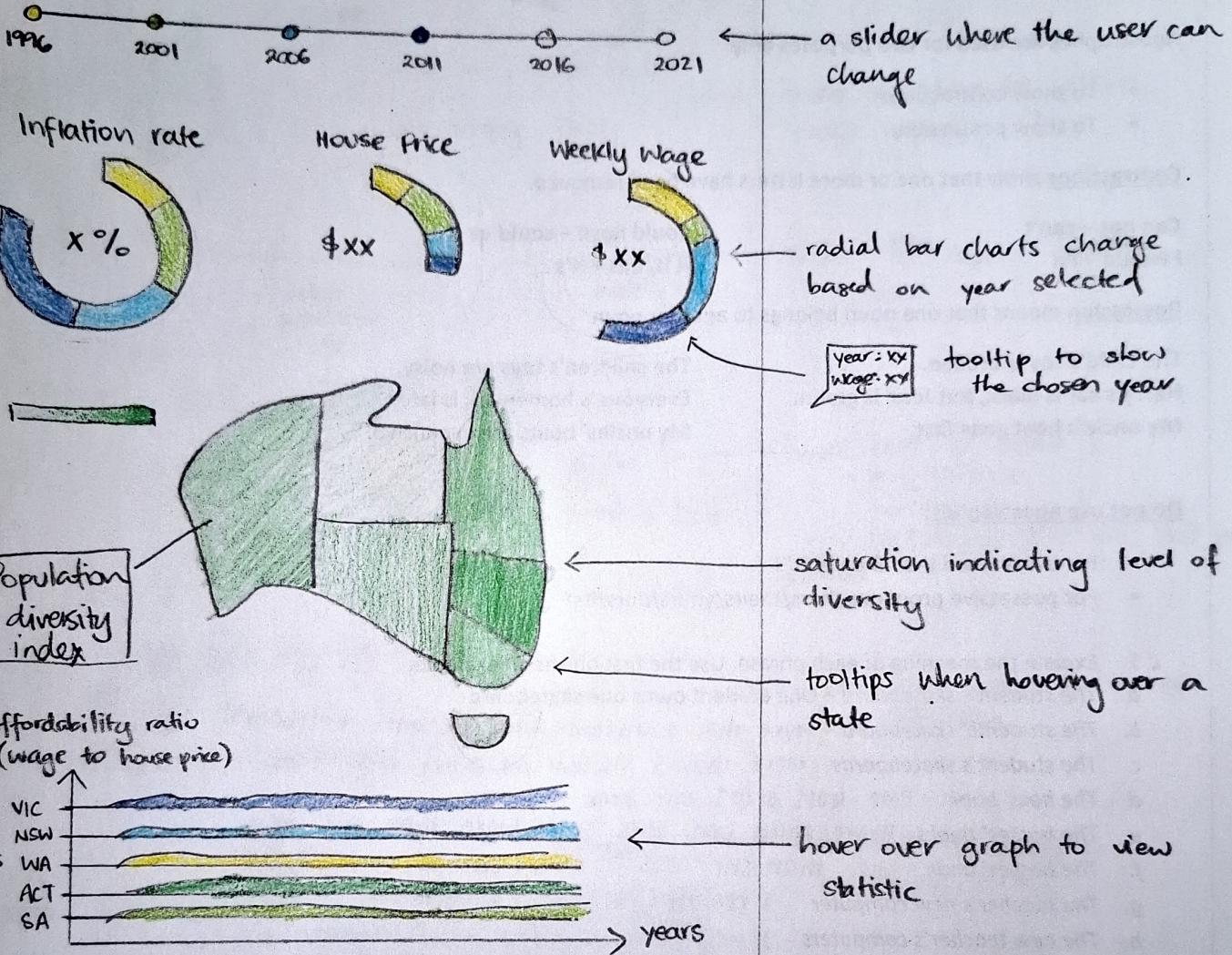
- do the plots support the main idea of the visualisation?
- how do I ensure that the plots are meaningful: compare diversity / migration to the Australian economy
- should a slider for years control the entire visualisation / interactivity w/ users
- how do I ensure the plots are interesting? (not created before, non-trivial)

## LAYOUT

## OPERATIONS

SHEET #2  
NAME: TONY LY  
DATE: 20/9/2025

## The Evolution of Affordability &amp; Diversity in Australia



## FOCUS

- timeline - focused → overview across the years
  - ↳ in the radial charts, use different colours to differentiate b/w years
  - ↳ as different years are selected, users can view the changes being made
- general overview on diversity in Australia → does not show actual countries or statistics

## DISCUSSION

- can you connect all plots using vega-lite to use the same slider?
- displaying economic factors for all of Australia vs. states?

## PROS

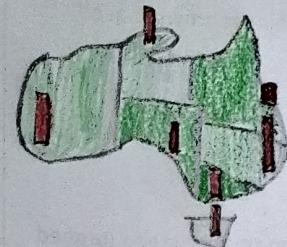
- easy to understand layout
  - ↳ captures the main idea well & in a concise manner

## CONS

- radial plots don't represent data correctly, e.g. what would be the total? And is each bar indicating relative/absolute value?

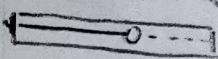
## AYOUT

# COMPARISON OF THE AFFORDABILITY AND DIVERSITY BETWEEN STATES IN AUS.



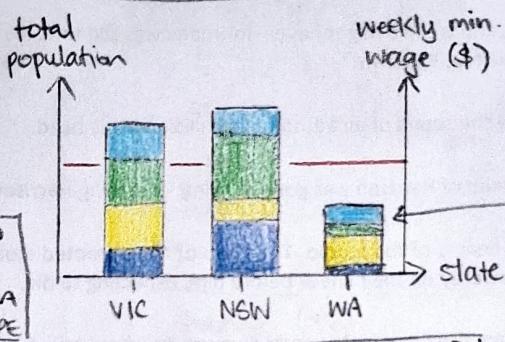
- interesting facts

← hover over bars to view exact inflation rate



slider to change the years

- interesting facts

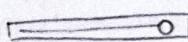


hover over to view

- population

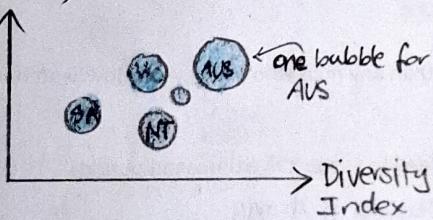
- continent

- increase/decrease since last yr



slider

Inflation (%)



- um
- um
- um

→ hover over bubbles to view population

House prices



VICTORIA

→ dropdown to select a particular state

## FOCUS

- focuses on differences b/w states and the 3 economic factors

↳ Australia map

↳ hue to represent diversity index

↳ bars on the capital cities to represent rate of inflation

↳ stacked bar chart

↳ show proportion of continents in each state

↳ show wage increase as years change

↳ bubble

↳ compare states → does diversity /population matter?

↳ heat map

↳ view differences b/w states & years in housing using brightness

## OPERATIONS

SHEET #3  
NAME: TONY C Y  
DATE: 20/9/2025

## DISCUSSION

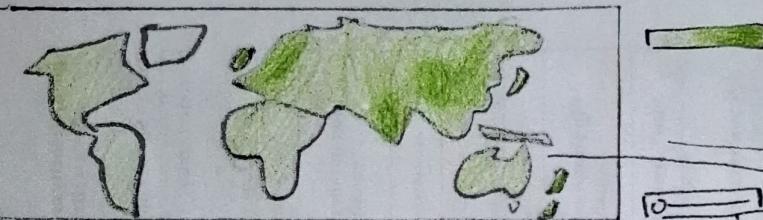
· how would the diversity index be calculated? How would we fairly represent each state?

· is the 2nd plot confusing? Should it be compared to a different factor?

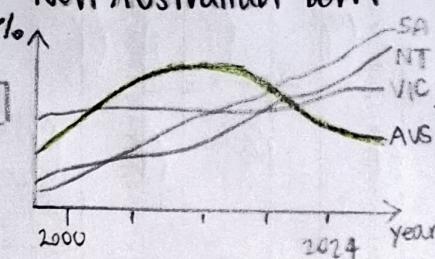
· data for house prices are split into quarterly years, would it be more effective if it was generalised into a yearly scale?

## LAYOUT

## THE COST OF BELONGING IN AUSTRALIA



Proportion of Non-Australian born



## OPERATIONS

SHEET #4  
NAME: TONY LY  
DATE: 21/09/2025

→ darker areas = more people from that region

hover over to see continent & population in Australia

→ slider to change years

→ states are greyed out but can still be selected to view on its own

→ slider to change years

Map tooltip for state:

- state
  - highest non-Australian country by population
- ↳ tooltip for bubble
- capital city
  - inflation
  - house price

→ click on a cell to view the plot closely → pop-up?

## FOCUS

- focuses on the actual countries/ continents people are from how visualise if this has correlation with the 3 economic factors
- storytelling layout: start with world map → Australia → dive into comparisons with diversity & economy

- ↳ use a matrix plot where users can view/click on a particular plot to view/identify trends b/w the two variables
- ↳ capture key details, each plot shows something meaningful to the visualisation

## DISCUSSION

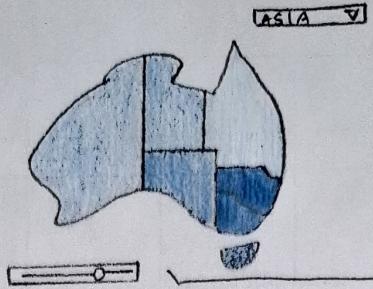
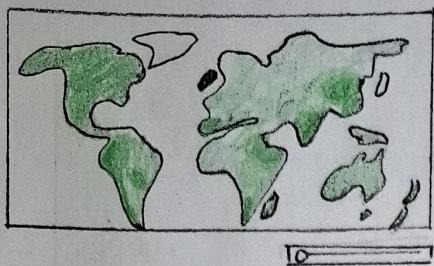
- Is the choropleth map of Aus useful? Could other idioms convey information in a better way?

## PROS

- matrix plot does well in displaying comparisons, probably would not need other line/scatter plots in the rest of the visualisation
- flow diagram is effective in controlling the viewer's attention but is chartjunk

## LAYOUT

## THE COST OF BELONGING: AFFORDABILITY + DIVERSITY IN AUSTRALIA



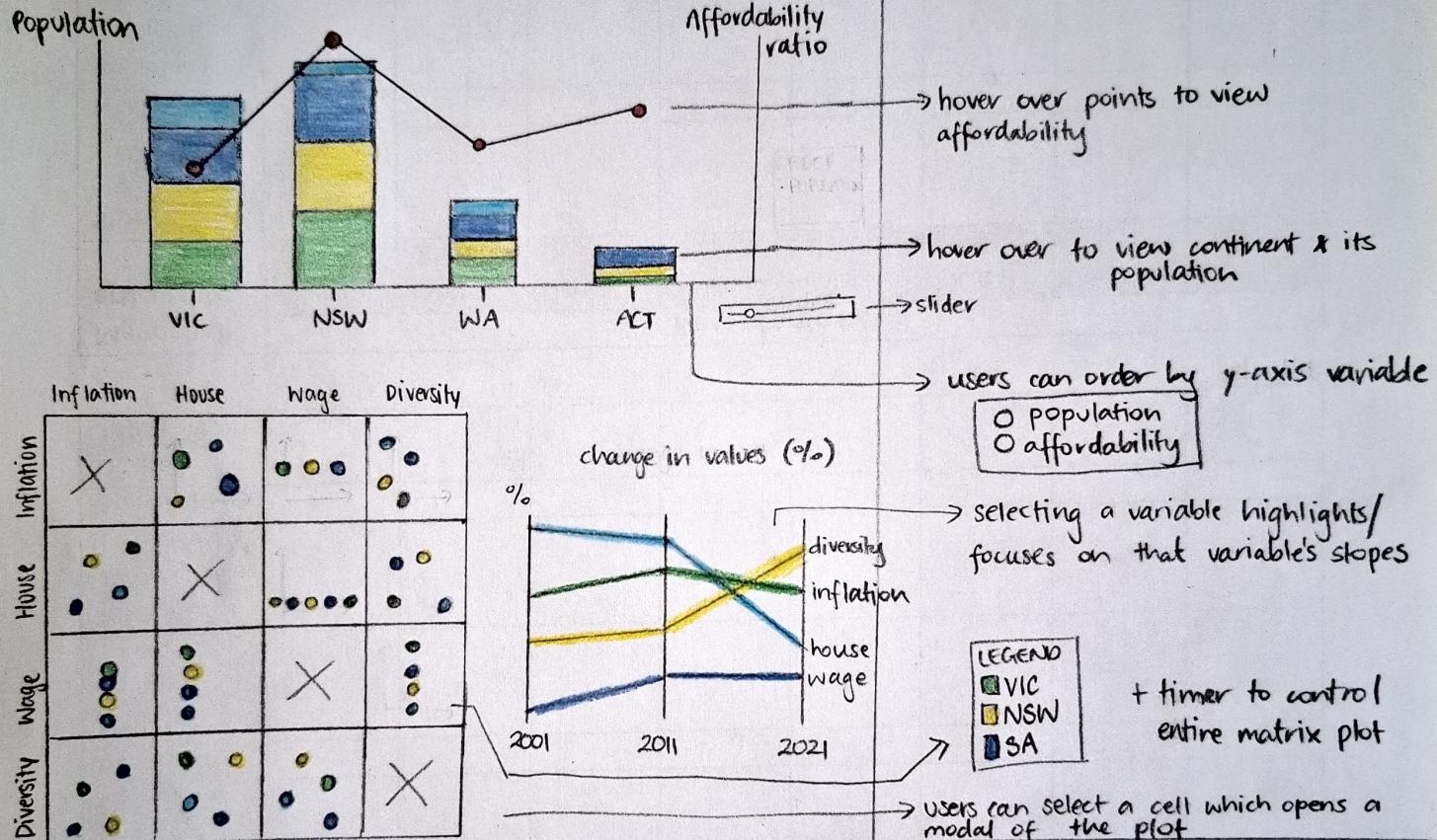
## OPERATIONS

SHEET #5  
NAME: TONY LY  
DATE: 21/09/2025

→ dropdown menu to select continent

- ASIA
- AFRICA
- EUROPE
- North America
- South America
- Oceania

→ sliders to change the years



## FOCUS

- focuses on the comparisons b/w the country of origin, and the 3 economic indicators: inflation, minimum wage, & house prices
- storyboard layout: starts off with an introduction of the countries / continents of where people are originally from, then dives into comparisons!

↳ each idiom displays a comparison b/w economy + diversity

## main comparisons:

1. affordability in each state
2. correlation b/w variables
3. trends / change in variables over time

## DETAILS

specific Requirements:

- creating pop-up modals in JS
- need calculated variables using the available data:

↳ affordability (wage to house price)

↳ change in values (%)

• use React library?

Estimated time & Effort:

- create csv files from data (1 day)
- create all plots individually (5 days)
- create layout of GitHub page using plots (1 day)
- add text & references, polish (1 day)