# FIT3179: Data Visualisation

# Assignment 2

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[Dashboard URL](https://nchong128.github.io/melbourne-housing-market/)

Word Count: 945 words

## Domain and target audience

The domain for this project is the state of the housing market in Melbourne between 2016-2018. It is targeted towards anyone interesting in exploring and learning various aspects of how properties are bought and sold in Melbourne, ranging across topics such as the effects of distance from CBD on price, the most popular suburbs by selling frequency, to an in-depth look at the vast variety of properties sold.

## What

The key data source here was based on Tony Pino’s housing data hosted on Kaggle[1]. This data source contained scraped property transactions in Melbourne from 2016 to 2018. Each row included various attributes such as the selling method, type of property, number of bedrooms/bathrooms/car spots, selling date and location information.

From there, various data cleaning/filtering/aggregation methods were conducted on Jupyter notebook to produce secondary data sources for all the visualisations. The secondary data sources are as follows:

* Total counts of property transactions, by suburb, by year
  + Used in the bump chart
* Average attribute values by suburb
  + Used in the choropleth map
* Individual property transactions information, with N/A values removed
  + Used in the dot map
* Selling method distribution
  + Used in the donut charts
* House type distribution
  + Used in the donut charts
* Region name distribution
  + Used in the donut charts

## Overall Design

## 3.1. Layout

The dashboard is created in a portrait view, with 4 clear sections covering different purposes. The choropleth map is placed at the visual centre of the visualisation, allowing me to emphasise its importance immediately. The sightlines are minimised as much as possible to give a clear viewing experience. The typography is laid in a simple top-to-bottom path to reinforce readability.

## 3.2. Colour

The red and white theming was inspired from RealEstate.com.au[2], a popular real estate listing website, giving the user a sense of familiarity with real-estate. The main text colour was of a lower brightness than pure black to blend in more with the background and allow the visualisation to be emphasised. The map visualisations were based off the Inferno scheme, keeping to the red theming and the other visualisations used a consistent “category20” scheme, which is colour-blind friendly.

## 3.3. Figure-Ground

The visualisations and the header were given a strong colour hue to draw the reader’s attention, serving as the **figure**, while the text uses a grey colour and the white/low grey background use dull colours to serve as the **ground**. To provide necessary information, bright red colours and bolding was used in buttons and text to draw the reader’s attention to any key facts or call-to-action.

## 3.4. Typography

The sans-serif Museo Sans was used, once again inspired by REA, to give off a friendly and simple viewing experience for the reader. A sans-serif font was chosen to keep up with the modern theme.

## 3.5. Storytelling

This visualisation was an attempt at using the Martini-glass narrative structure which combines author-driven narratives (in the first 3 sections) before encouraging the user to explore more closely in the final section. This was shown by providing more details in the first 3 sections through explaining the observations followed by encouraging the user to use the extensive filtering in “Playing the Agent” to answer the given questions.

Moreover, the theming of the visualisation was centred around those “looking for a home” and wanting to learn more about various aspects of the Melbourne market. This guided the choice of the heading texts and the choice of visualisations.

## Why and How

Figure 1’s aim was to show the correlation of average house price for a suburb with the distance from the CBD. This was shown visually by using the colour channel for price and seeing a decrease in brightness when moving further from the CBD. A choropleth map was used to display the suburb’s positioning and its average house price. Filtering for the suburb was added to encourage the user to explore suburbs they personally know.

Figure : Choropleth map displaying average property prices by suburb

Map

Description automatically generated

Figure 2’s aim was to display the rankings of suburbs by property sales over across time, making it suitable to use a bump chart. Annotations were added to provide insights such as Reservoir’s #1 ranking and the volatility between 2017 and 2018. The legend is interactive, allowing the user to find a specific suburb in the visualisation, this is then highlighted while the other line marks will be greyed out.

Figure : Bump chart displaying the top 10 suburbs by number of sales

Chart, line chart

Description automatically generated

Figure 3’s aim was to display the distribution in selling by method, house type and region. A donut chart is used over pie charts to reduce the reader’s reliance on viewing the area as the main channel of comparison. Moreover, 3 donut charts are used instead of 3 bar charts in effort to conserve horizontal spacing. To allow for easier comparison, the tooltips provide the % of the total, for each element.

Figure : Multiple donut charts showing selling by method/house type and region

Chart

Description automatically generated with medium confidence

Figure 4’s purpose is to encourage reader interactivity with various properties across Melbourne, showing the vastness in price/rooms/bathrooms and other factors. This was achieved with a dot map displaying each property, with extensive filtering encouraging interactivity.

Figure : Dot map showing properties in Victoria, with multiple filters

Map

Description automatically generated

## Final DashboardGraphical user interface, application Description automatically generatedChart, radar chart Description automatically generatedGraphical user interface, application Description automatically generated

# Bibliography

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Data Visualisation & Human Rights. (n.d.). *Storytelling through narrative visualizations is most efficient when combining author- and reader-driven approaches.* Retrieved from Data Visualisation & Human Rights: http://visualizingrights.org/tldr/narrative-storytelling.html

Pino, T. (2016). *Melbourne Housing Market*. Retrieved from Kaggle: https://www.kaggle.com/anthonypino/melbourne-housing-market

## Appendix









