

Battle of Neighbourhoods

Coursera Capstone project by Manoj babu Paramadayalan

Introduction

- ▶ I currently live in Melbourne and I have been offered a great opportunity to work for a leading Finance firm in Canberra. I am very excited and I want to use this opportunity to practice my learnings from Coursera in order to answer my key question, finding out an affordable and enjoyable place similar to mine now in Melbourne.
- ▶ In order to make a comparison and evaluation of the rental options in Canberra, I must set some basis, therefore the apartment in Canberra must meet the following demands:
 - ▶ Apartment Size : 2-3 bedroom unit
 - ▶ Location : Close to public commute stations
 - ▶ Rent: Not more than 800 per week
 - ▶ Others: amenities in the selected neighbourhood shall be similar to current residence

Data Required

- ▶ List of Boroughs and neighbourhoods of Canberra with their geodata (latitude and longitude)
- ▶ List of bus stations in Canberra with their address location
- ▶ List of apartments for rent in Canberra with their addresses, no.of beds and weekly rent
- ▶ Venues for each Canberra neighbourhood
- ▶ Venues near my location in Melbourne

Data acquisition and cleaning

- ▶ Rental prices data has been collected using webpage scraping and manual data collection from rental websites.
- ▶ The Geodata for rental prices dataset has been acquired using Nominatin
- ▶ The key dataset of Canberra (Neighbourhood, Postcode with latitude & longitude data) has been downloaded Australia Post Website.
- ▶ The bus station dataset (Stop Name, Neighbourhood, Postcode with latitude & longitude data) has been downloaded from data.gov.au

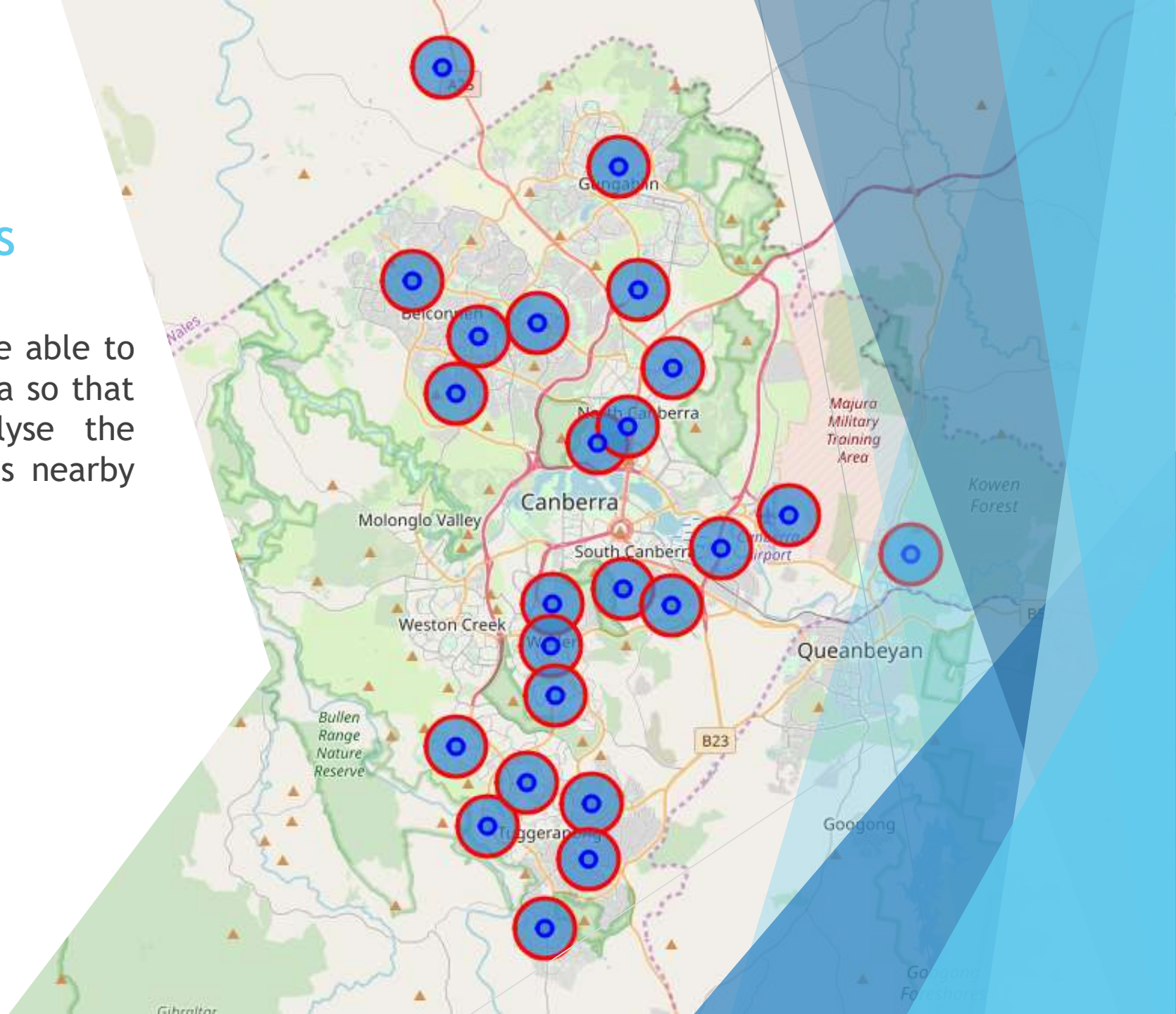
Exploratory Data Analysis

Venues around current Neighbourhood

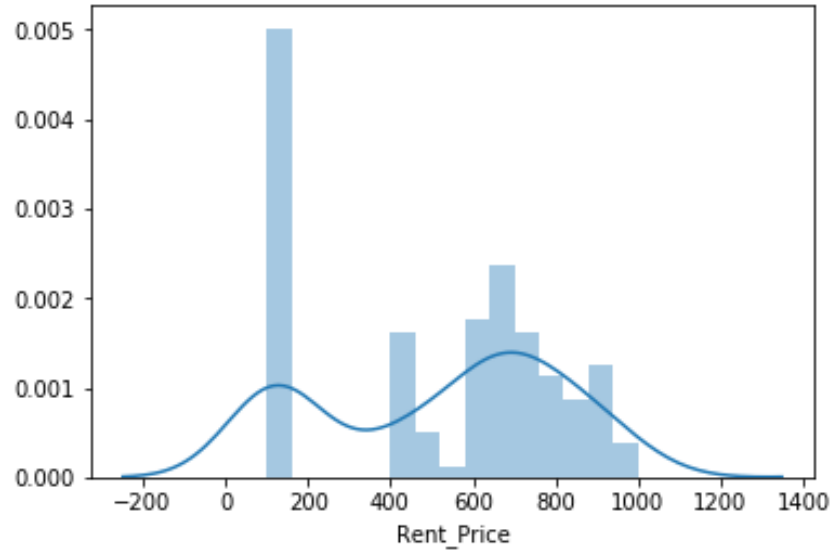


Canberra Neighbourhood Map with Cluster of Venues

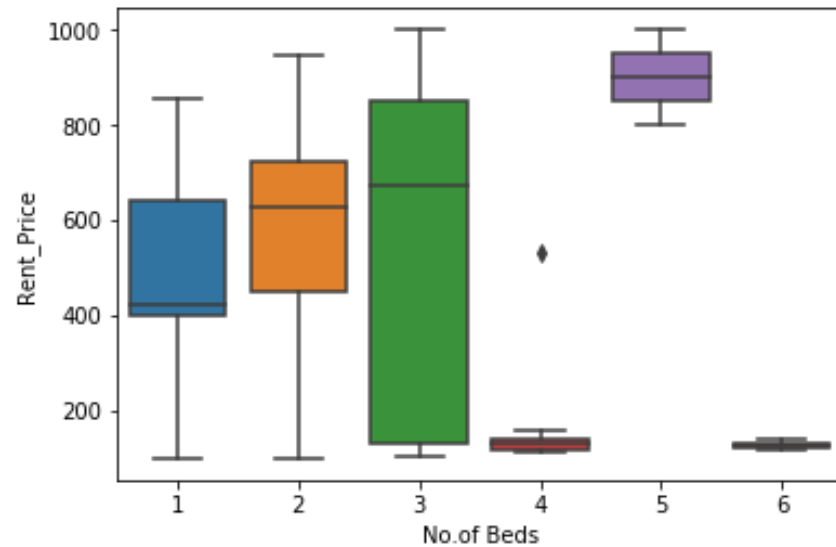
- Using KNN Algorithm, we were able to cluster the venues in Canberra so that we can compare and Analyse the rental places and bus stations nearby in the next steps.



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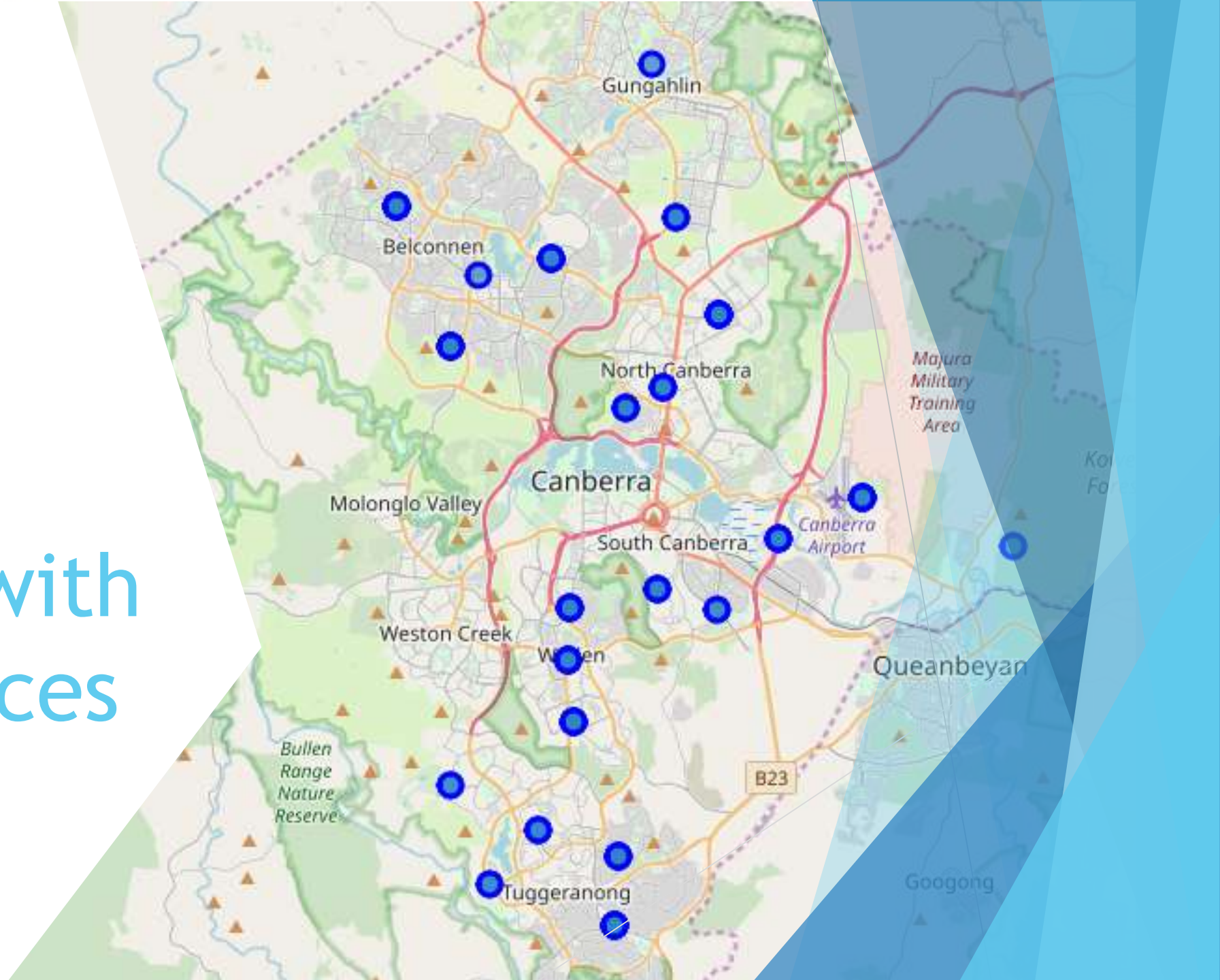


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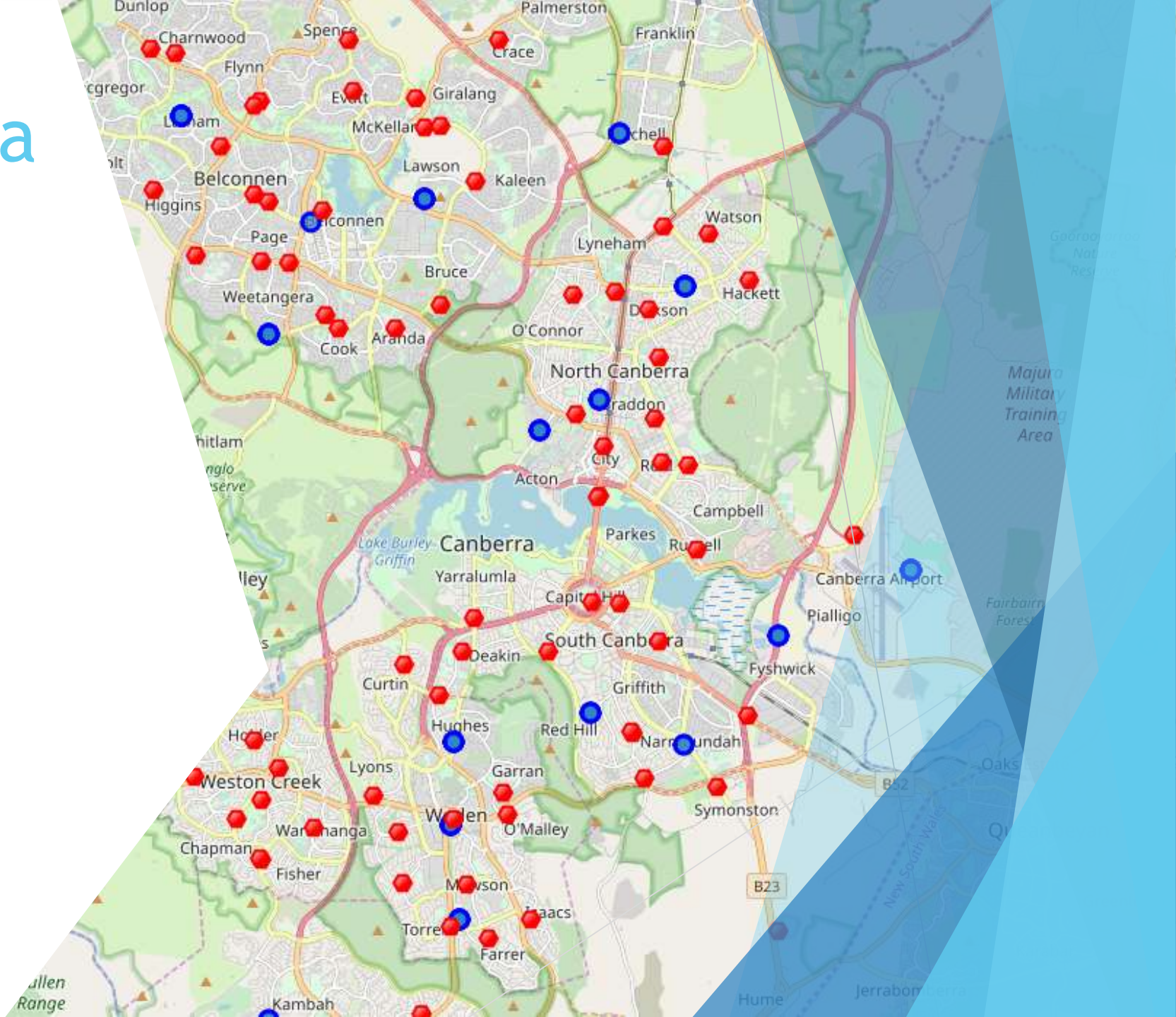
Statistical analysis of Canberra Rental Prices

Map of Canberra with rental places



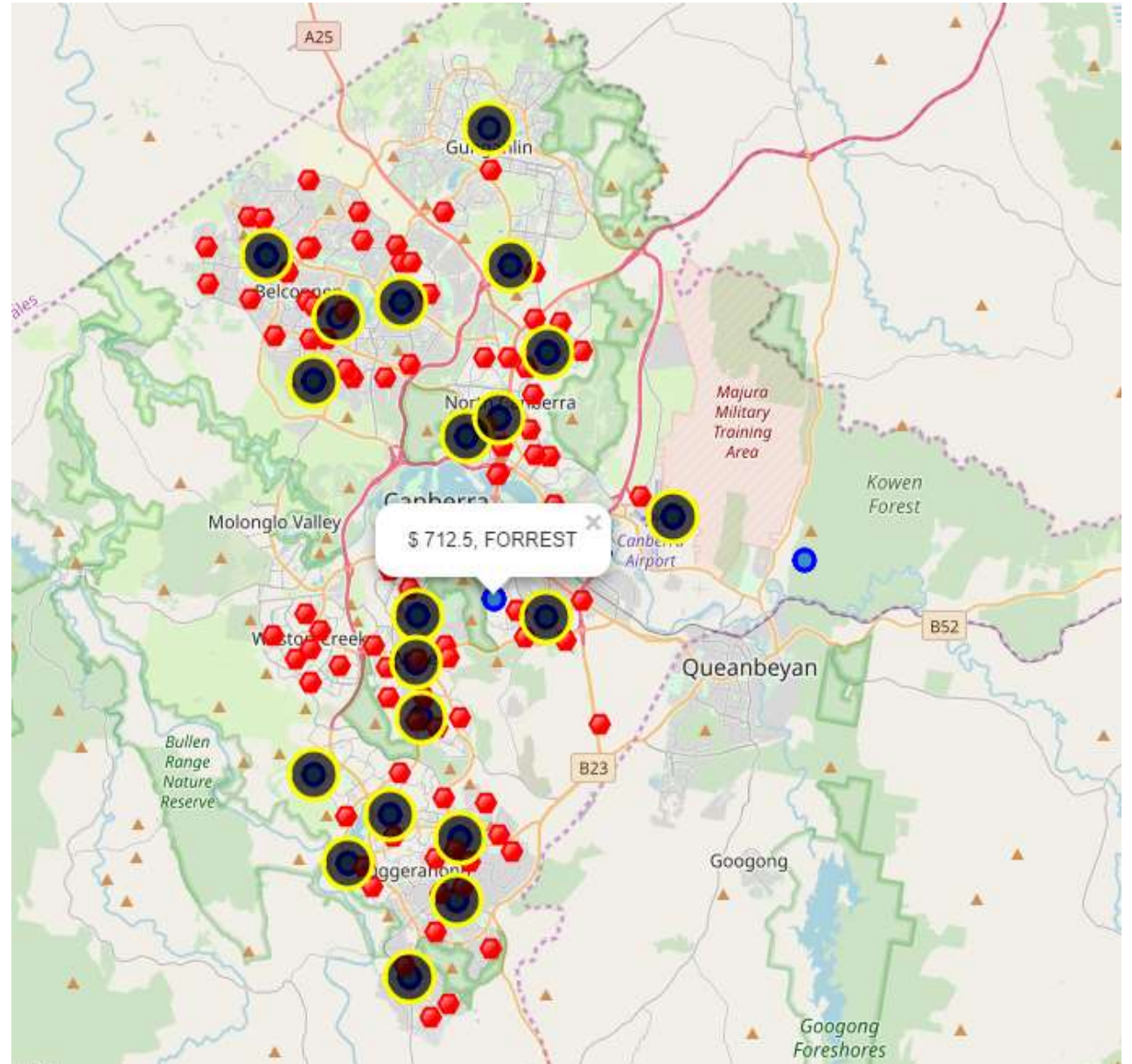
Map of Canberra

- ▶ Bus stations - red dots
- ▶ Rental places - blue dots



Result Section

- ▶ In this section all the required information to make the apartment selection is consolidated in one map. The Map of Canberra with rental places, bus station locations and cluster of venues.
- ▶ Red dots are bus stations, Blue dots are apartments available for rent, Bubbles are the clusters of venues
- ▶ After examining, I was able to choose one location that meet the desired requirements.
- ▶ Apartment 1: Forrest Neighbourhood and it is near 'LA PEROUSE ST AFTER CALEY CR' bus station, Cluster # 1 Weekly rent : 712.5 AUD



Discussion & Conclusion

- ▶ In this study, I analysed the relationship between Venues, commute stations and House rents. I identified that different type of venues and nearby commute stations play an important role for house/apartment rental prices in that Neighbourhood. I built Maps with markers each for venues, bus stations and rental places to compare and find the right place like my current place. These maps can be very useful in helping anyone to explore and decide a right place to move in into Canberra.
- ▶ This project has shown me a practical application to resolve a real-world scenario using Data Science tools and methodologies. The mapping with Folium is a very powerful technique to consolidate information and make the analysis and decision thoroughly and with confidence.