ANALYZING HOUSING MARKET IN MELBOURNE, AUSTRALIA

BACKGROUND

- Melbourne housing price is relatively expensive. Yet the real estate market makes people confused with various properties and price range

- In such a scenario, this situation imposes a big concern for homebuyers: *Among hundred thousand available real estate on sale, which one is both most suitable and affordable for my preferences and financial status?*

BUSINESS INSIGHTS

- This analysis is for anyone who is interested in or planning to purchase a property in Melbourne and real estate agents whose responsibility is to find the most suitable one for their clients, yet still profitable for the company.
- Imagining a potential client has come to your door. Here are something about them:
  - They have 2 kids, so the house needs at least 3 rooms
  - They prefer an unit or duplex house, and as they are Vietnamese migrants, they want some local restaurants nearby.
  - Other essential and recreational amenities, especially for sports, are also welcomed.
  - Capability: $650,000 – $800,000

DATA ACQUISITION AND PREPARATION

- Data on Melbourne properties and price was scraped from publicly available results posted every week from **Domain Group < https://www.domain.com.au/ >**

- Data on nearby venues and amenities scraped from **Foursquare API**

- **In total**, the raw dataset consists of **34857 rows** and **21 features**

- Duplicate, NaN values are dropped and Select only **7** relevant features

- After cleaning, the data set has **576 rows** and **7** columns

CLUSTERING HOUSES INTO 3 PRICE GROUPS

Using the k-Means algorithm, we have divided 576 units that fit the client's requirements into 3 groups of price, the details are as follow:
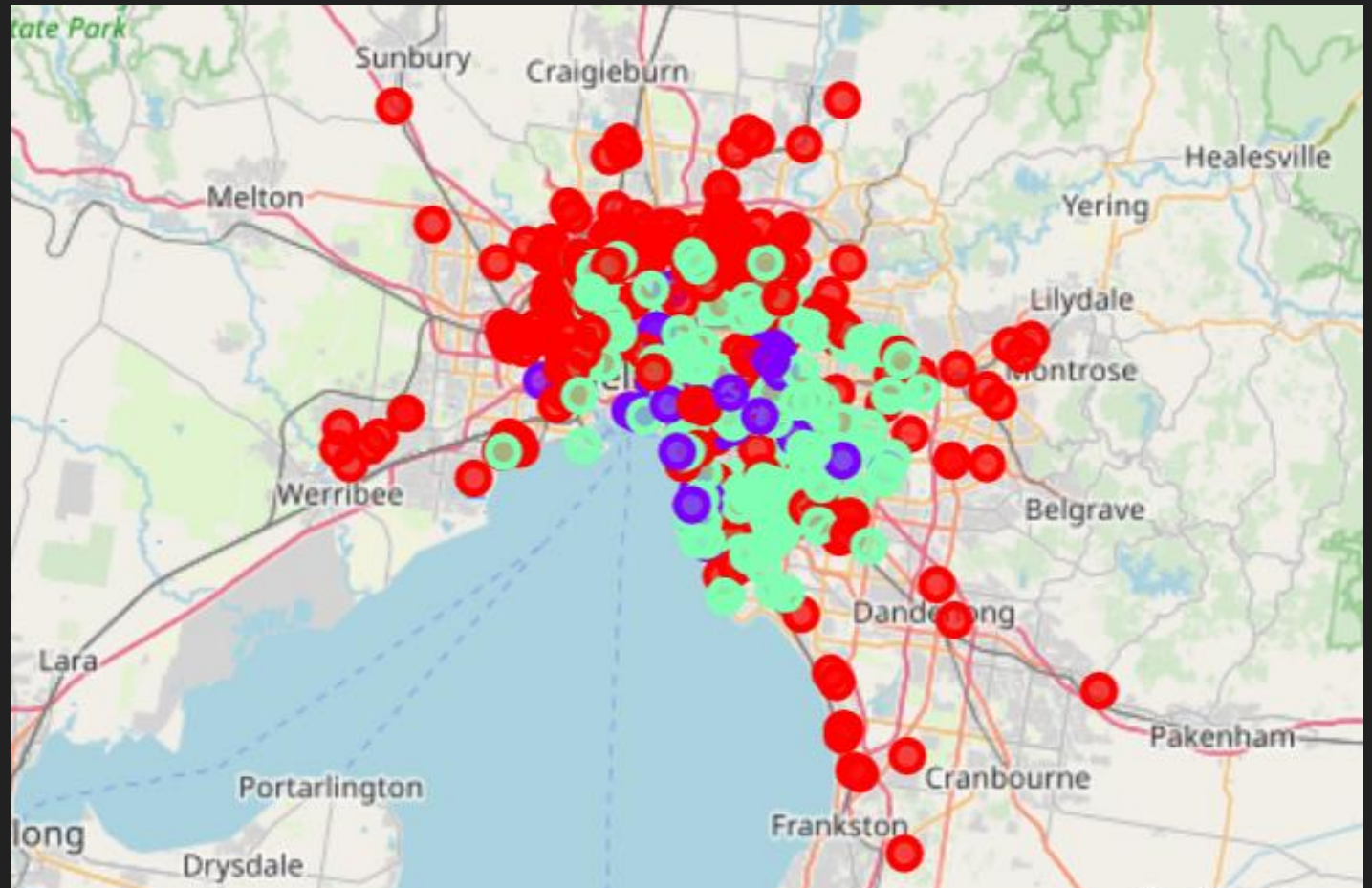
Cluster	Range (AUD)	Category	Count
0	780,000 - 1,296,000	Medium Price	238
1	1,320,000 - 3,610,000	High Price	60
2	301,000 - 777,000	Low Price	278

VISUALIZING THE DISTRIBUTION OF PROPERTIES BASED ON PRICE RANGE

Red: Low price

Green: Medium price

Purple: High price
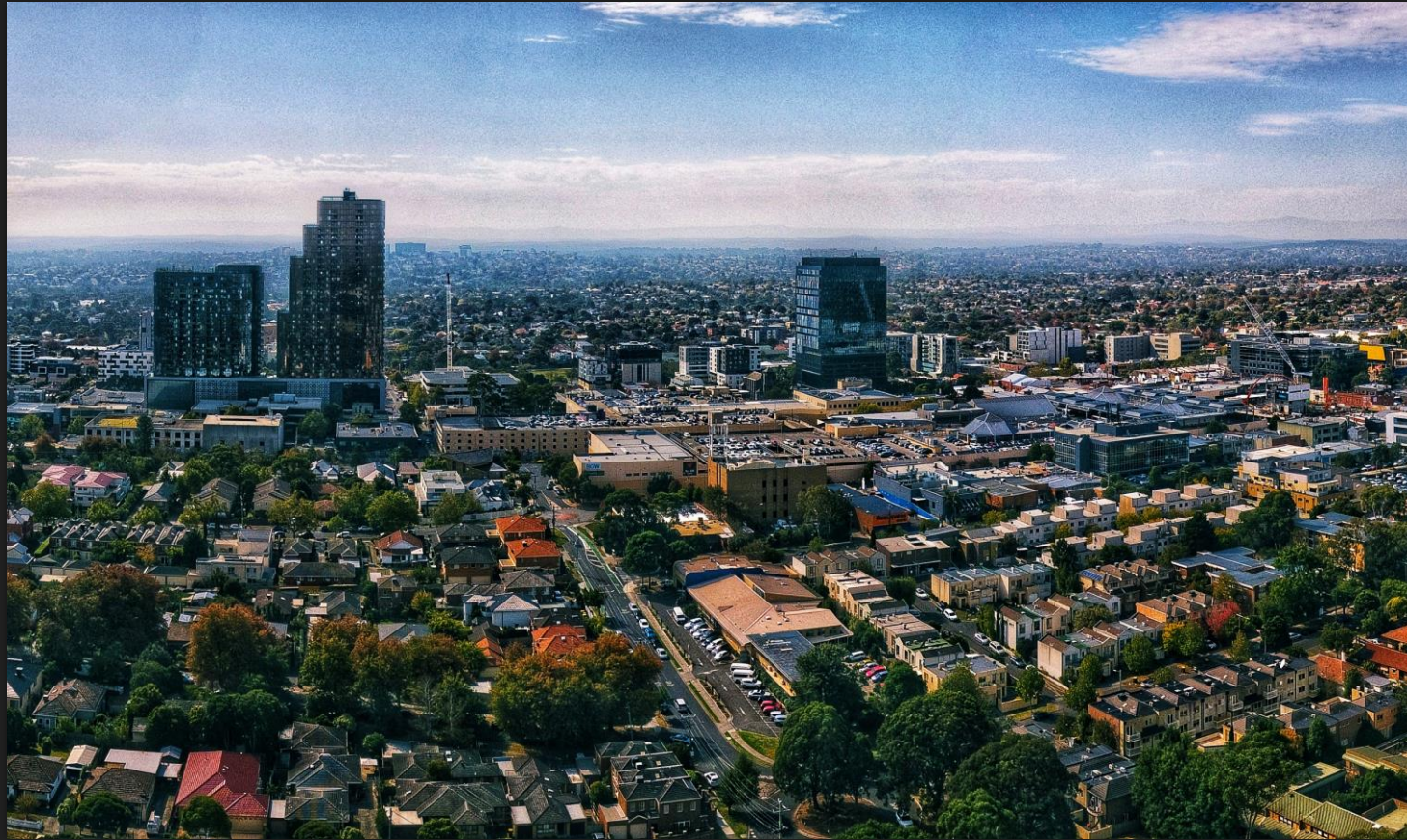
FINDING NEARBY VENUES

- Using Foursquare API, we get the nearby venues within the radius of 800 meters in each suburb

- We create the top 5 most common venues list based on the frequency of each location

- After sorting the results based on the client's preferences, we get this answer:

	Suburb	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	Abbotsford	Vietnamese Restaurant	Café	Thai Restaurant	Pub	Korean Restaurant
20	Box Hill	Vietnamese Restaurant	Athletics & Sports	Baseball Field	Gourmet Shop	Supermarket
63	Footscray	Vietnamese Restaurant	Café	Asian Restaurant	Bakery	Bar

DISCUSSION AND CONCLUSION

- Houses are clustered reasonably: Low-priced ones are still the majority, followed by the middle-priced. High price range is quite out of their capability, so we don't discuss about it.

- As we can see from the map, the more expensive the property is, the closer it is to CBD (Central Business District) of Melbourne.

- There are 3 suburb areas that have Vietnamese restaurants within their proximity: Abbotsford, Box Hill, and Footscray. Of these three potential suburbs, Box Hill also has sports venues and one supermarket nearby, which is suitable for households. Moreover, Box Hill is in Low Price cluster where housing price ranges from $301,000 to $777,000, which fits their financial capability.

So the final recommendation for our Vietnamese client is:
BOX HILL

THANK YOU FOR READING ☺