



# IBM Data Science Professional Certificate (Coursera) - Applied Data Science Capstone

Project Title: 2 Bedrooms Units' Weekly Rents Index  
and Surroundings near The University of Melbourne  
Parkville Campus

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# Introduction

- ▶ Problem: New student moving to Melbourne looking for rental apartment, which suburb to look for rental apartment
- ▶ Objective: To provide weekly rents index for 2 bedrooms apartments near the campus with the surrounding venues

# Data acquisition and cleaning

- ▶ Coordinates data: Campus, Suburbs
- ▶ Weekly rent index data
- ▶ Geojson for Melbourne
- ▶ Foursquare data on neighborhoods venues within 1km radius for each suburb

# Data acquisition and cleaning

- ▶ Suburb coordinates update using geopy library
- ▶ Suburbs name update to match Melbourne geojson file

# Methodology

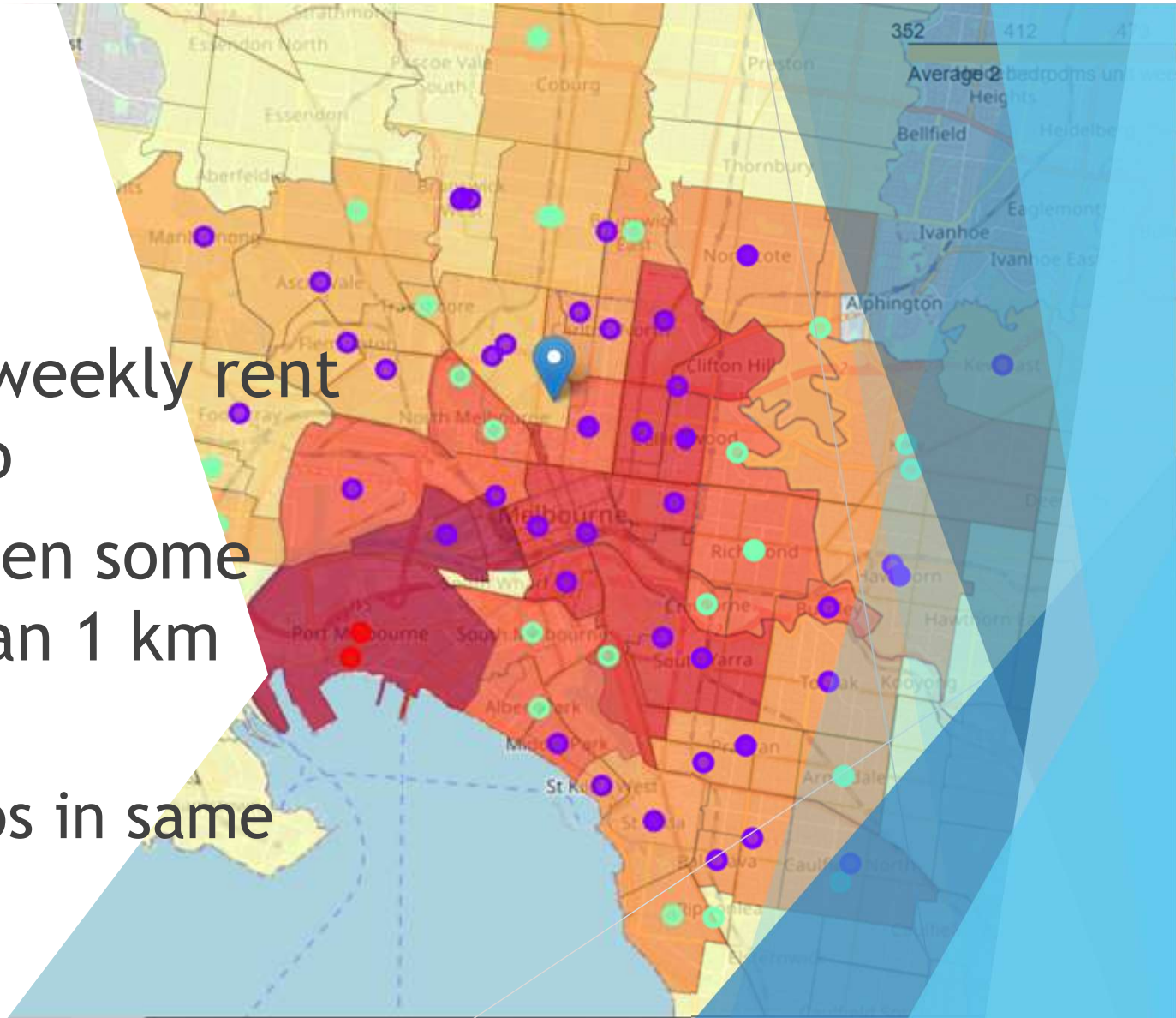
- ▶ Suburb is commonly when look for housing
- ▶ Use postcode for weekly rents index
- ▶ Mapping weekly rents index (by postcode) to suburb
- ▶ Remove suburbs not covered in Melbourne geojson

# Methodology

- ▶ Foursquare data: Venues in each suburb
- ▶ Frequency of each venue category in suburb
- ▶ Use k-mean clustering algorithms to cluster suburb into 3 cluster

# Discussion

- ▶ Improvement: weekly rent index by suburb
- ▶ Distance between some suburbs less than 1 km radius
  - ▶ Nearby suburbs in same cluster



# Conclusion

- ▶ Weekly rents index not precise to suburb
  - ▶ Improvement: Obtain weekly rents index by suburb
- ▶ Lesson learned: Data acquisition for real project, data exploration analysis, useful Python libraries