

Coursera Capstone project

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Report Content

1. **Introduction Section:** - The “business problem” to be solved by this project and who may be interested
2. **Data Section:** - Describe Data requirements and Sources needed to solve the problem
3. **Methodology section:** - Main component of the report - Execute data processing, describe/discuss any exploratory data analysis and/or inferential statistical testing performed, and/or machine learnings used.
4. **Analysis & Results section:** - Discussion of the results and finding of answer
5. **Discussion section:** - Discussion of observations noted and any recommendations
6. **Conclusion section:** - Answer chosen and conclusions.

1.0 Introduction

1.1 Scenario and Background : I am currently living in Singapore, within walking distance to Downtown "Telok Ayer MRT metro station" . I also enjoy great venues and attractions, such as international cuisine, entertainment and shopping. I have an offer to move to work to Manhattan NY and I would like to move if I can find a place to live similar with similar venues.

1.2 Problem to be resolved: How to find an apartment in Manhattan with the following conditions: • Apartment with min 2 bedrooms • Monthly rent not to exceed US\$7000/month • Located within walking distance (≤ 1.0 mile, 1.6 km) from a subway metro station in Manhattan • Venues and amenities as in my current residence.

1.3 Interested Audience: I believe the methodology, tools and strategy used in this project is relevant for a person or entity considering moving to a major city in US, Europe or Asia. Europe, US or Asia, Likewise, it can be helpful approach to explore the opening of a new business. The use of FourSquare data and mapping techniques combined with data analysis will help resolve the key questions arisen. Lastly, this project is a good practical case for a person developing Data Science skills.

2.0 Data Section

2.1 Data Requirements - Geodata for current residence in Singapore with venues established using Foursquare. - List of Manhattan (MH) neighborhoods with clustered venues established via Foursquare (as in Course Lab).
https://en.wikipedia.org/wiki/List_of_Manhattan_neighborhoods#Midtown_neighborhoods - List of subway metro stations in Manhattan with addresses and geo data (lat,long): https://en.wikipedia.org/wiki/List_of_New_York_City_Subway_stations_in_Manhattan , (<https://www.google.com/maps/search/manhattan+subway+metro+stations/@40.7837297,-74.1033043,11z/data=!3m1!4b1>) - List of apartments for rent in Manhattan area with information on neighborhood location, address, number of beds, area size, monthly rent price and complemented with geo data via Nominatim. <http://www.rentmanhattan.com/index.cfm?page=search&state=results>
<https://www.nestpick.com/search?city=new-> - Place to work in Manhattan (Park Avenue and 53rd St) for reference

2.2 Data Sources, Data Processing and Tools used - Singapore data and map is to be created with use of Nominatim , Foursquare and Folium mapping - Manhattan neighborhoods were obtained from Wikipedia and organized by Neighborhoods with geodata via Nominatim for mapping with Folium. - List of Subway stations was obtained via Wikipedia, NY Transit web site and Google map, - List of apartments for rent was consolidated from web-scraping real estate sites for MH. The geolocation (lat,long) data was found with algorithm coding and using Nominatim. - Folium map was the basis of mapping with various features to consolidate all data in ONE map where one can visualize all details needed to make a selection of apartment