

Project 1 Outline:

Project Title:

- *AirBnB Hunters*

Github Repo:

- <https://github.com/sreyanalla/airbnb-hunters>

Team Members:

- Patricia
- Todd
- Sreya
- Dane

Project description/outline:

- Find the ideal investing locations for rental properties in NYC.
- Utilize housing/apartment building prices across the neighborhoods to find ideal investing locations based on housing prices.
- Predict rental property revenue through airbnb price calculator based on neighborhood and rental type.
- Compare rental revenue from property compared to cost per neighborhood to find optimal investment locations.

Research question to answer:

- Where is the optimal location to buy a rental property in NYC based on neighborhood?
 - Geoviews
- What is the optimal price for a rental location based on unit size from AirBnB data?
 - Scatter plot or bar chart
- What is the optimal size house to buy for rentals based on sale price versus rental price?
 - Scatter plot or bar chart
- What is the expected income for 3, 5, and 10 years based on the top 3 locations?
 - Forecast line chart

Datasets to be used

- AirBnB New York: <https://www.kaggle.com/datasets/dgomonov/new-york-city-airbnb-open-data>
- Sale Prices in NY: <https://www.kaggle.com/datasets/new-york-city/nyc-property-sales>
- Google API for zip code to lat long
<https://stackoverflow.com/questions/5585957/get-latlng-from-zip-code-google-maps-api>

Rough breakdown of tasks and who is owning tasks:

- Set up github - Sreya
- Download data and upload to github - Dane
- Initialize jupyter notebook - Team (COMPLETE)
- Ingest data using pandas - Team (COMPLETE)
- Clean and format data - Team (MONDAY) (COMPLETE)
- Analyze NY sale prices - Team (WEDNESDAY)
 - Format data for analysis
 - Calculate sale price for each apartment
 - Understand sale price by neighborhood
 - Create visualizations with geoviews
 - Table for sale price by neighborhood
- Analyze AirBnB data - Team (WEDNESDAY)
 - Format data for analysis
 - Conduct analysis for price by neighborhood
 - Create visualization for neighborhood versus price
- Combined AirBnB Data with NY Neighborhood Data - Team (THURSDAY)

- Understand sale price per neighborhood and rental rate by neighborhood
 - Calculate ratio for sale price / rental rate
 - Create visualizations
- Product result of top 3 neighborhoods for rental based on ratios - Team
- Develop ReadMe: Todd & Patirica
- Combine Code: Sreya
- Develop Powerpoint Presentation: Dane

NEED TO FIND A NEW LIBRARY TO INTEGRATE

<https://towardsdatascience.com/4-python-packages-to-create-interactive-dashboards-d50861d1117e>

Tech Requirements:

- Use pandas to clean data and format data
- Jupyter Notebook to explore and clean up the data
- Jupyter Notebook illustrating the final analysis
- Use some kind of pyVis component (GeoViews, Hvplot) for 6-8 visualizations of data
 - At least 2 per question you ask of your data
- Save visualizations as PNG images
- Include README.md
- Optional - Use an API
- Must use 1 new python library that has not been used in class (example: Pyfolio)
 - Visualization
 - New functions

Presentation Requirements:

- Formal 10-minute presentation
- Questions you are answering
- Where you found data
- How you clean up data
- Analysis
- Conclusions with numerical summary and visualizations

Additional Data Sources:

Housing investor

Sale & Rental data from Zillow for US:

<https://www.kaggle.com/datasets/paultimothymooney/zillow-house-price-data>

<https://www.kaggle.com/datasets/johnshuford/new-york-city-property-sales>

Housing investor

Prediction of housing pricing to understand investment opportunity vs Rental rates

<https://www.kaggle.com/datasets/harishkumardatalab/housing-price-prediction>

<https://www.kaggle.com/datasets/howisusmanali/house-prices-2023-dataset>

<https://www.kaggle.com/datasets/yasserh/housing-prices-dataset/discussion/400545>

Airbnb rates price calculator Airbnb

<https://www.kaggle.com/datasets/kritikseth/us-airbnb-open-data>

<https://www.kaggle.com/datasets/thedevastator/airbnb-price-determinants-in-europe>

- <https://www.kaggle.com/datasets/paultimothymooney/zillow-house-price-data>
- ** NOT THIS <https://www.kaggle.com/datasets/kritikseth/us-airbnb-open-data>
- <https://www.kaggle.com/datasets/thedevastator/airbnb-price-determinants-in-europe>

<https://www.kaggle.com/datasets/thedevastator/us-travel-check-ins-analysis?select=Location.csv>

Investment portfolio analysis

S&P 500 past 13 years

<https://www.kaggle.com/datasets/yash16jr/s-and-p-500-all-assets>

Bitcoin price

<https://www.kaggle.com/datasets/prkhrawsthi/bitcoin-usd-daily-price-with-volume-2015-2023>

Impact of remote working on ... [Need to find productivity and cost metrics]

Remote working:

<https://www.kaggle.com/datasets/mohamedelzeini/the-impacts-of-working-remotely-and-in-an-office?select=The+Impacts+of+Working+Remotely+and+in+an+Office+Survey.csv>

Diamond pricing calculator

Diamonds:

<https://www.kaggle.com/datasets/amirhosseinmirzaie/diamonds-price-dataset>

Loan approval calculator

Loan approval:

<https://www.kaggle.com/datasets/krishnaraj30/finance-loan-approval-prediction-data>

Airbnb rates price calculator

Airbnb

<https://www.kaggle.com/datasets/kritikseth/us-airbnb-open-data>

<https://www.kaggle.com/datasets/thedevastator/airbnb-price-determinants-in-europe>

Twitter?

<https://www.kaggle.com/datasets/kaushiksuresh147/bitcoin-tweets>

Price to revenue analysis

Netflix Price scenarios for companies to identify pricing

<https://www.kaggle.com/datasets/arnavsmayan/netflix-userbase-dataset>