UCSD Data Science Bootcamp Project 2 Report, 2/24/20

AirBnB Rental Rates vs Local Income

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Project Objective

* Groom a dataset that a data analyst can use to evaluate AirBnB rental rates vs. local income and other census characteristics.

**Extraction -**

We pulled data from two data sets:

* [AirBnB rental rates for New York City, includes Lat/Long](https://www.kaggle.com/dgomonov/new-york-city-airbnb-open-data%20kaggle.com) (Kaggle)
* [Census Income Data by census tract](https://www.kaggle.com/muonneutrino/new-york-city-census-data) (converted to census tract)

The AirBnb dataset describes the listing activity and metrics in NYC, NY. It includes county and township of each listing, the listing price, and latitude and longitude data for the listing.

The Census Data for New York includes information down to the Census Tract level, which includes approximately 8,000 people. It has information on income, income per capita, race, and employment statistics.

Both datasets are formatted in CSV. We used Pandas to extract and explore the data.

**Transformation -**

We had to convert the latitude/longitudes of the AirBnb listings to the appropriate Census Tract codes. To do so, we used the geo.fcc.gov API to convert Lat/Long to Census Tract. The API returns Census Block data, which is more granular than Census Tracts (~8,000 people compared to ~1,500 people). To fix this, we simply dropped the last four digits of the Census Block to get the Census Tract.

**Load –**

We created a SQL database called airbnb\_db with two tables: airbnb\_data and census\_data. The schema for the database and tables is included. To run an analysis, we simply perform a join on the Census Tract column. This allows us to run queries to find, for example, if correlations exists between the average cost of an Airbnb and the average income level for the same area.