Analysis of Airbnb Listings in Boston

TEAM MEMBERS: Aditya Agarwal,
Arvind Garg,
Ashwin John Chempolil,
Malavika Krishnan

Overview:

According to Wikipedia, Airbnb is an online marketplace that provides lodging, primarily homestays for vacation rentals and tourism activities. Here we will be analyzing Airbnb listings in and around the Boston neighborhood. The questions we would be answering are highly dependent on the dataset we can access, and this is bond to Airbnb listings in Boston alone. We are expecting to create esthetic, easy to understand visualizations to tell the story behind the data and help the audience get a clear picture of past, present, and future trends of Airbnb listings in one of the most populated cities in the US (United States).

The data we will be using for our analysis is Boston Airbnb Open dataset and it is available on Airbnb Inside that can be found here. The dataset contains the following Airbnb activity:
- **listings.csv**, consists of details of all the listings in Boston including their price, accommodations, ratings, number of reviews, summary, name, owner name, Description, host Id and many other columns describing details of listings
- **reviews.csv**, including unique id for each reviewer and detailed comments
- **calendar.csv**, including listing id and the price and availability for that day

Methods:

We will be organizing and cleaning the data, eliminating any listings with missing values for price, beds, bedrooms etc. After cleaning and tidying the data, we can do some analysis to answer some questions we hope to answer. They are:

- Describe the vibe of each Boston neighborhood using listing descriptions.
- How do prices of listings vary by location?
- Is there a general upward trend of both new Airbnb listings and total Airbnb visitors to Boston?
- Which hosts are the busiest and why?
- Is there any noticeable difference in traffic between different areas and what could be the reason for it?
- Which neighborhoods in Boston have the greatest number of listings and the least?
- How does the demand for Airbnb rentals fluctuate across the year and over years?
- What are the several types of properties in Boston? Do they vary by neighborhood?

Apart from this, we will also do a spatial analysis that might show which all neighborhoods in Boston have the greatest number of listings and to check whether there is a relation with the price and neighborhood. We will also plan to build an interactive word cloud generator based on a Review of various listings.