Understanding the Effects of Pricing, Location, and Customer Reviews on AIRBNBs

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Project Outline: This project aims to analyze the Airbnb dataset for Toronto in order to answer three key business questions. By conducting a comprehensive exploration of the data, we seek to identify the most popular neighborhood for short-term rentals in Toronto, understand the revenue trends for Airbnb listings, and examine the relationship between the number of reviews and actual ratings. This information will provide valuable insights to potential hosts, travelers, and the broader hospitality industry in Toronto.

Research Questions to Answer:

1. Identify the most popular neighborhood for short-term rentals in Toronto: By analyzing the data on booking frequency and occupancy rates across neighborhoods, we will determine which areas in Toronto are the most sought after by Airbnb guests.
2. Finding out the revenue for Airbnb and its correlation with other variables: We will explore the revenue generated by different types of Airbnb listings in Toronto. Additionally, we will investigate potential correlations between pricing and variables such as property type, location, and amenities, to understand the factors influencing listing prices.
3. Analyze the relationship between the number of reviews and actual ratings: By examining the data on reviews and ratings, we will assess the relationship between the number of reviews received by a listing and the actual ratings given by guests. This analysis will help us understand whether higher review volumes are associated with better-rated listings.

Datasets to be Used: The primary dataset used for this analysis is the "Airbnb Toronto Dataset" obtained from Kaggle.com. The dataset contains comprehensive information about Airbnb listings in Toronto, including property details, location, pricing, availability, and guest reviews.

Rough Breakdown of Tasks:

To address the business questions, we will follow the following steps:

1. Data Cleaning and Preprocessing: The dataset will be cleaned to handle missing values, outliers, and inconsistent data. We will ensure data quality and prepare it for analysis. (Ankit, Akansha)
2. Exploratory Data Analysis (EDA): In this step, we will perform an in-depth exploratory analysis of the dataset. We will generate visualizations and summary statistics to gain insights into the distribution of listings, prices, and reviews across different neighborhoods and property types. (Ankit, Akansha, Tapleen)
3. Most Popular Neighborhood Identification: We will determine the popularity of neighborhoods by calculating the average booking frequency and occupancy rates. Based on these metrics, we will rank the neighborhoods to identify the most popular ones. (Tapleen)
4. Revenue Analysis and Correlation: To understand revenue trends and correlations, we will analyze pricing data in conjunction with other variables such as property type, location, and amenities. This will allow us to identify factors that impact listing prices and overall revenue generation. (Ankit)
5. Relationship between Reviews and Ratings: We will examine the relationship between the number of reviews and the actual ratings to determine if a higher volume of reviews is associated with higher-rated listings. (Akansha)
6. Creation of PowerPoint Presentation and Project Proposal Document (Kathia)

Expected Deliverables

1. Project Report: A comprehensive report detailing the findings of the analysis, including visualizations and key insights related to the three business questions.
2. Code Implementation: All code used for data cleaning, preprocessing, and analysis will be provided for transparency and reproducibility.
3. Visualization: Graphs, charts, and plots illustrating the patterns and trends in the data.

Conclusion By successfully addressing the three business questions, this project will provide valuable insights into the Airbnb market in Toronto. Hosts will be able to identify popular neighborhoods, optimize pricing strategies, and understand the impact of reviews on their listings' ratings. Additionally, travelers and the hospitality industry can benefit from the knowledge of popular neighborhoods and revenue trends to make informed decisions.