Airbnb Data Analysis Project Report

INTRODUCTION

This project focuses on analyzing Airbnb listings data in New York City to derive insights into room types, neighbourhood groups, pricing, and user reviews. The main aim was to understand patterns that can support pricing strategies and operational decisions for hosts and platforms.

ABSTRACT

An interactive dashboard was built to visualize Airbnb data covering total bookings, reviews, and average prices across room types and neighbourhood groups. The analysis highlights Manhattan as the most expensive area, while Brooklyn has the highest number of listings. The review trends and booking seasonality were also examined to inform stakeholders about market dynamics.

TOOLS USED

- Tableau: For building interactive dashboards and data visualizations.
- Python: For data cleaning, preparation, and preliminary exploration before dashboarding.

STEPS INVOLVED IN BUILDING THE PROJECT

1. Data Collection

Airbnb listings dataset was collected for New York City, including details such as room type, price, number of reviews, and neighbourhood group.

2. Data Cleaning and Preprocessing

Using Python (pandas, numpy), null values were handled, data types were corrected, and derived metrics were created for analysis.

3. Exploratory Data Analysis (EDA)

Initial graphs were plotted in Python to understand distributions, outliers, and correlations among key variables.

4. Dashboard Development in Tableau

- Imported the cleaned dataset into Tableau.
- Created visualizations including bar charts, heat maps, pie charts, and geospatial maps.
- Designed a cohesive dashboard showing:
- Total hosts, reviews, neighbourhood distribution
- Average price by neighbourhood group
- Booking trends by month and room type
- Top 10 hosts by total reviews
- Map of average prices by location

- 5. Insight Extraction

Key observations were noted for pricing strategy suggestions, such as peak booking months and price differentials across neighbourhood groups.

CONCLUSION

This project effectively utilized Python for data processing and Tableau for visualization to build a comprehensive Airbnb dashboard. The insights derived can guide strategic decisions for hosts regarding pricing, optimal listing periods, and targeted investments in popular neighbourhoods. Future work can integrate sentiment analysis of reviews to enhance understanding of customer preferences.