

Airbnb Data Analysis & Visualization Project

Project Overview

Objective:

Analyze Airbnb listings data to understand pricing trends, identify high-demand neighborhoods, and provide actionable insights for hosts and investors.

Dataset:

The project uses an Airbnb dataset that includes information such as listing prices, neighborhood locations, review scores, room types, and other relevant features. The data was sourced from Inside Airbnb and refined for analysis.

Key Goals:

- 1.Clean and preprocess the data for consistency.
- 2.Explore pricing trends and distribution across neighborhoods.
- 3.Identify top neighborhoods by listing volume.
- 4.Visualize outliers and understand the spread of prices.
- 5.Prepare the cleaned data for a Tableau dashboard to present interactive insights.

Data Collection & Preprocessing

Step 1: Data Loading & Cleaning

Imported the dataset using Pandas.

Handled missing values by removing rows with incomplete data.

Converted date columns to appropriate datetime formats.

Exploratory Data Analysis (EDA)

Step 2: Visualizing Price Distribution

Created histograms and box plots to study the distribution of listing prices.

Used box plots to identify outliers.

Insights from EDA:

The price distribution is skewed, with a concentration of listings in the lower price range.

Several high-priced outliers exist, which may indicate luxury or error in data.

A detailed neighborhood analysis is required to understand local trends.

Neighborhood Analysis

Step 3: Analyzing Top Neighborhoods by Listing Volume

Identified the top 10 neighborhoods based on the number of listings.

Created a bar chart to visualize the popularity of these neighborhoods.

Dashboard Preparation with Tableau

Step 4: Preparing Data for Tableau Dashboard

Saved the cleaned dataset as a CSV file.

This dataset can then be imported into Tableau for building interactive visualizations.

Dashboard Elements in Tableau: [Link to Tableau Dashboard](#)

Interactive Map: Visualize Airbnb listings by location.

Price Trends: Line chart showing how prices vary across different neighborhoods.

Key Metrics: KPIs such as average price, total listings, and average review scores.

Filters: Enable dynamic filtering by room type, neighborhood, and price range.

Project Outcomes & Insights

Pricing Insights: Detailed analysis of price distribution revealed a significant skew, with most listings priced affordably and some high-end outliers.

Neighborhood Popularity: The bar chart analysis helped identify top neighborhoods for Airbnb listings, guiding hosts on high-demand areas.