



Airbnb Europe Data Visulation Project

An interactive data visualization project exploring European Airbnb listings through dynamic charts, pricing insights, and market trends across major cities.

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PROJECT OVERVIEW

Building Interactive Insights

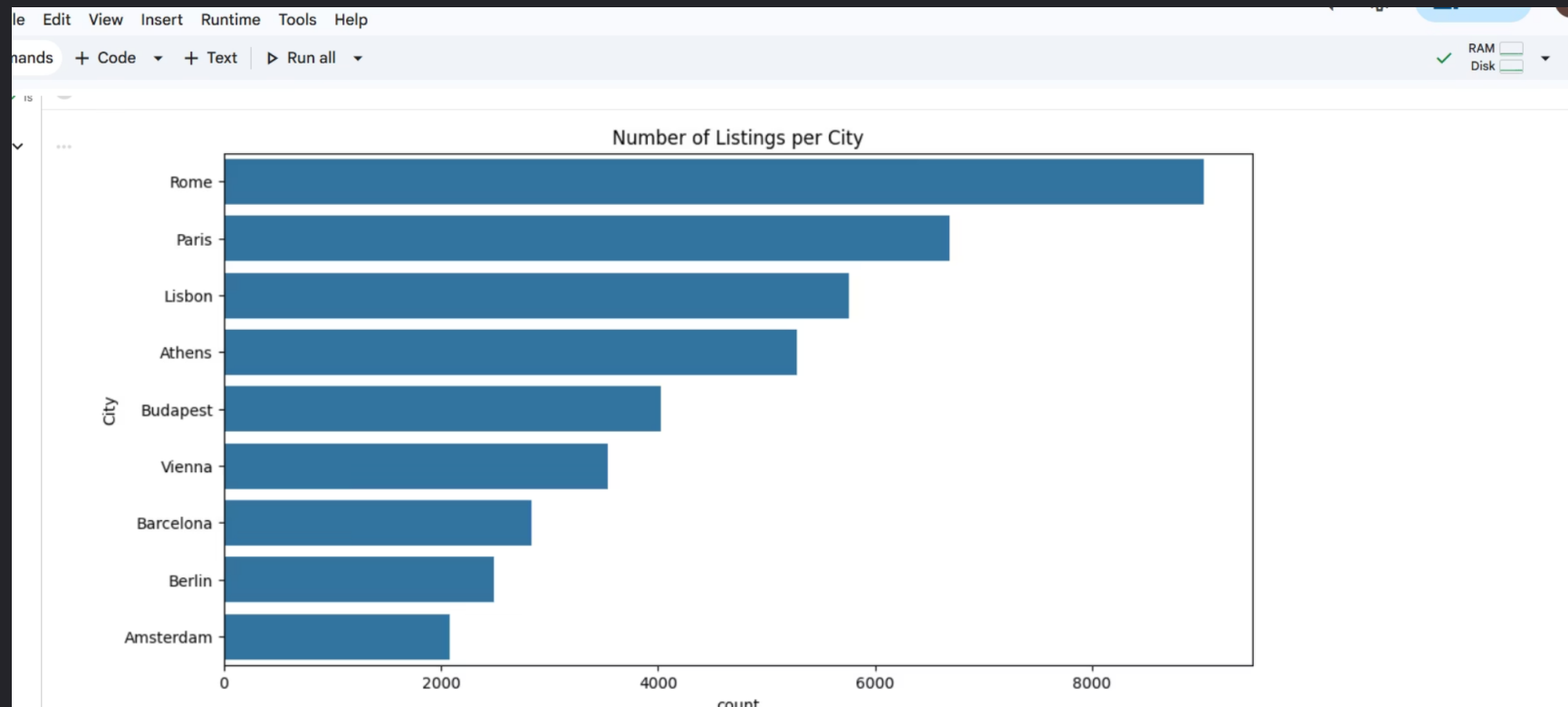
Our Mission

Transform raw Airbnb data into actionable insights through an interactive dashboard that reveals pricing patterns, market dynamics, and guest preferences across European cities.

Key Objectives

- Visualize pricing distribution and trends
- Analyze room availability and accommodation types
- Map guest satisfaction metrics
- Compare city-level market characteristics

Dataset Scope



European Market Coverage

Our dataset encompasses comprehensive Airbnb listings across major European metropolitan areas, capturing diverse accommodation types from studio apartments to luxury villas.

The data includes pricing, room configurations, guest ratings, and geographical distribution—providing a 360-degree view of the European short-term rental market.

Visualization Priorities



Pricing Analysis

Distribution patterns and outlier detection



Room Insights

Bedroom counts and accommodation types



Satisfaction Metrics

Guest ratings and review scores



City Distribution

Geographic listing concentration

Dashboard Visualizations

We developed 10 interactive visualization dashboards in Google Colab, each designed to reveal specific patterns and insights within the European Airbnb marketplace.

1 Price Distribution Histogram

Reveals typical nightly rates and pricing spread across all listings

2 Top Cities by Listing Count

Bar chart identifying markets with highest accommodation density

3 Bedrooms vs Price Correlation

Scatter plot showing relationship between size and cost

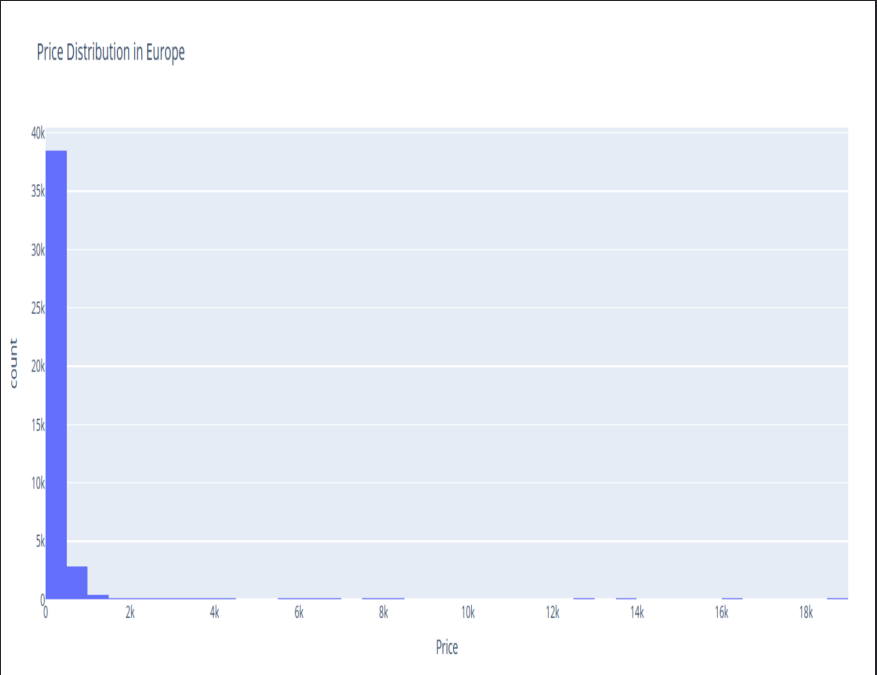
4 Room Type Pricing Analysis

Comparison of average prices across accommodation categories

5 Guest Satisfaction vs Price

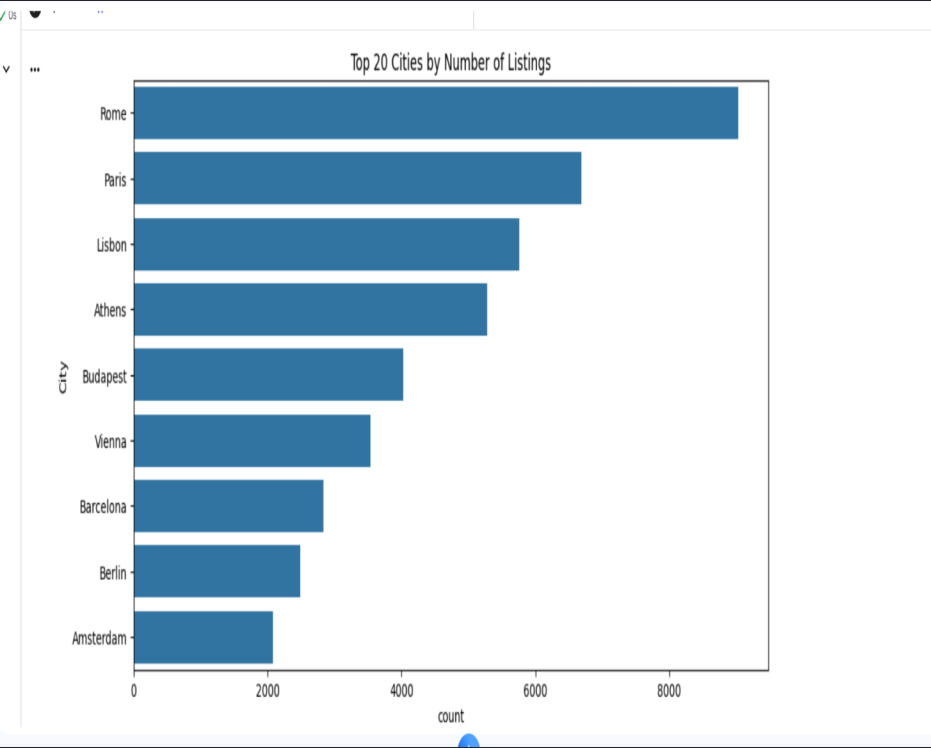
Explores whether higher prices correlate with better reviews

Key Visualizations Showcase



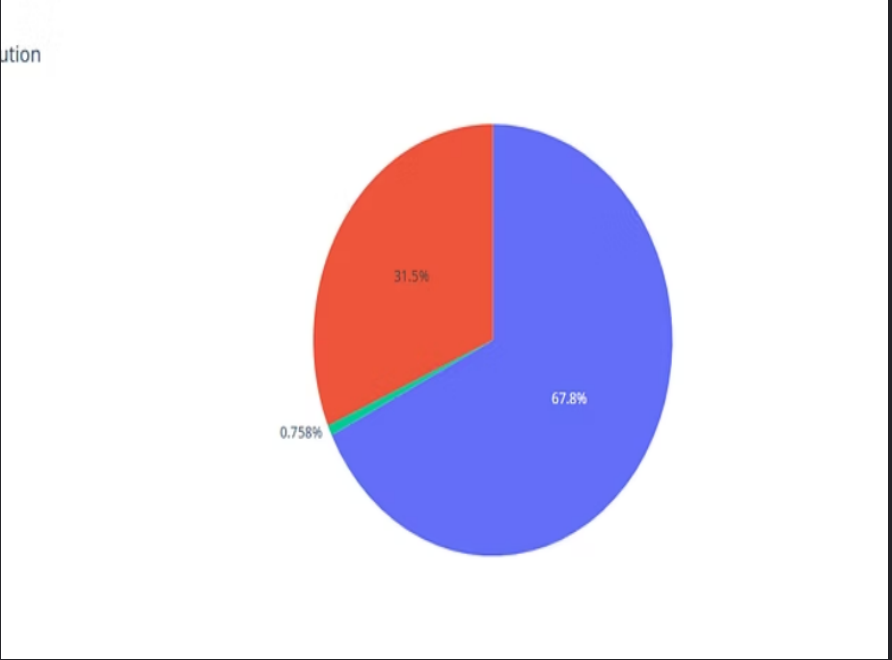
Price Distribution

Histogram revealing concentrated pricing between €50-150 per night with long tail toward luxury options



City Rankings

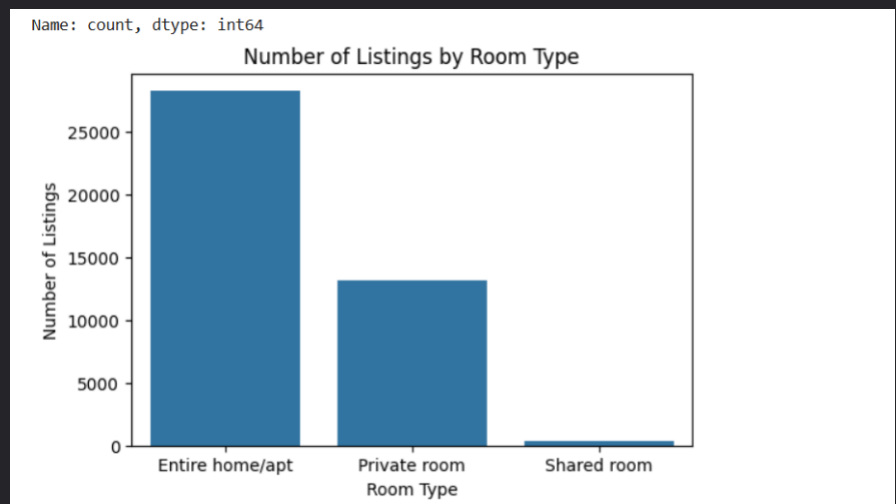
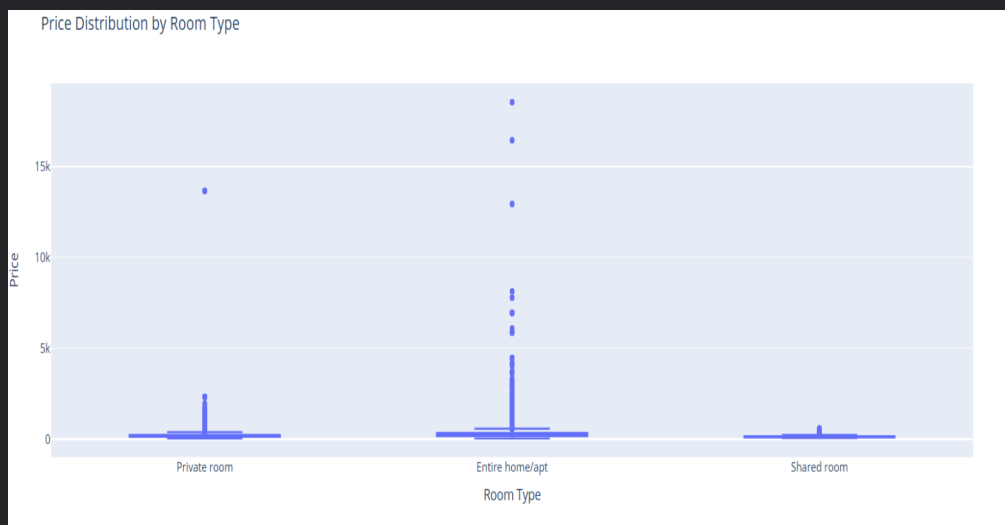
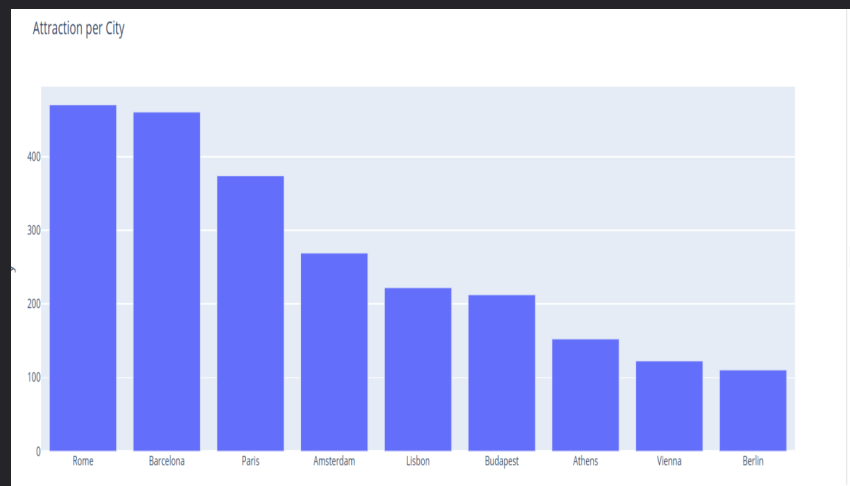
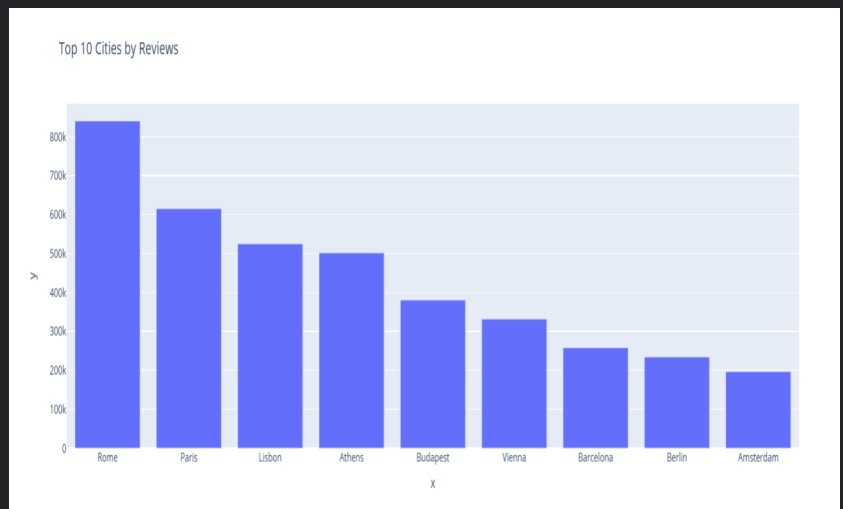
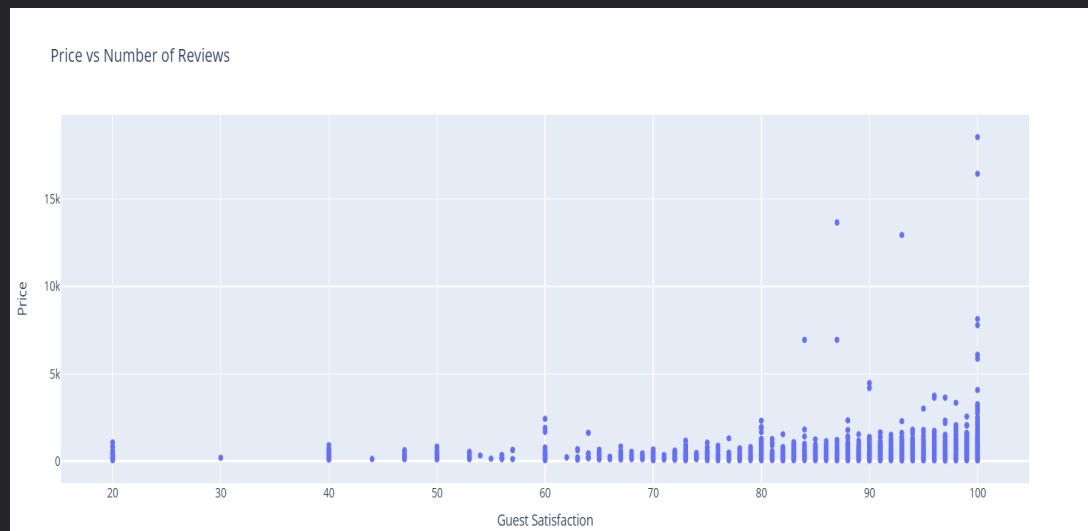
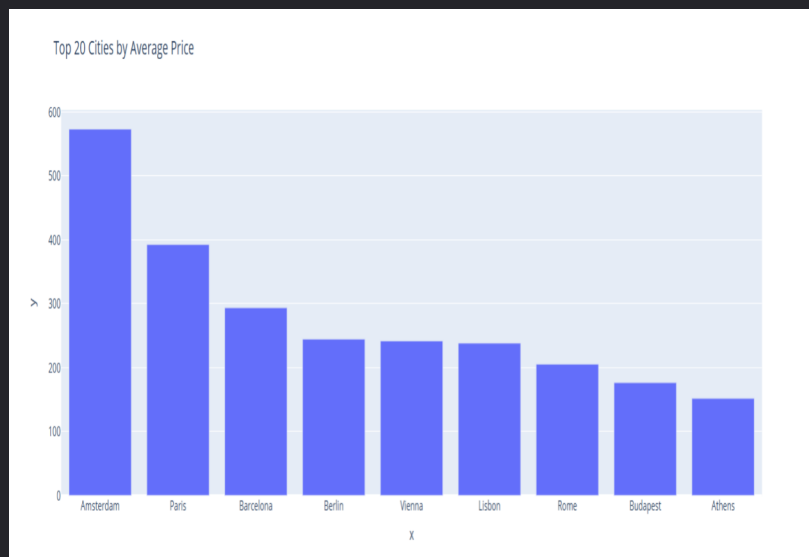
Bar chart comparing listing volumes across major European destinations



Size vs Price

Scatter visualization showing positive correlation between bedrooms and nightly rates

Additional Dashboard Views



Each visualization layer provides unique insights—from room type pricing breakdowns to satisfaction score distributions—enabling comprehensive market understanding.

Key Insights Discovered

Pricing Patterns

Most listings cluster in the mid-range bracket, with premium properties commanding significantly higher rates in tourist-heavy cities like Paris and Amsterdam.

Market Concentration

Major capital cities dominate listing counts, but emerging markets show rapid growth and competitive pricing strategies.

Size-Price Relationship

Clear positive correlation between bedroom count and nightly rates, though outliers suggest location and amenities also drive premium pricing.

Satisfaction Trends

Guest ratings remain consistently high across price points, indicating quality standards are maintained throughout the market spectrum.



Impact & Next Steps

Achievements

Successfully delivered an interactive, user-friendly dashboard that transforms complex Airbnb data into actionable insights for hosts, investors, and market analysts.

Future Enhancements

- Real-time data integration via Airbnb API
- Predictive pricing models using machine learning
- Seasonal trend analysis and forecasting
- Competitive benchmarking tools

Ready to Explore

The dashboard is live and ready for stakeholder review. All visualizations are interactive, with filtering capabilities and drill-down options for deeper analysis.

These are the Project Related links :

https://github.com/RachanaPatil897/Data_visulation_Airbnb_Europe_Project.

Streamlit - <http://localhost:8501/>