Project Report: Airbnb Dynamic Pricing Recommendation Engine

Objective

Analyze historical Airbnb data to suggest optimal pricing based on location, season, and listing quality.

Tools Used

Python, Tableau, Excel.

Project Overview

This project aims to help Airbnb hosts set dynamic and competitive pricing for their listings by analyzing historical data. Key factors such as city, property type, number of reviews, and seasonal trends are used to predict optimal pricing.

Data Analysis

- Analyzed pricing trends across different cities and property types.
- Examined the impact of review scores and seasonality on pricing.
- Used Excel for initial data cleaning and exploratory analysis.

Modeling Approach

- Implemented a regression model in Python to identify key pricing predictors.
- Factors like location, seasonality, property type, and review count were used as inputs.
- Model evaluation was based on R-squared and RMSE metrics.

Dashboard

- Created an interactive Tableau dashboard.

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- Included filters for city, property type, and review score.

- Integrated a price suggestion slider to dynamically recommend prices.

Deliverables

- Tableau dashboard with dynamic filters and pricing slider.

- Python script for pricing prediction engine.

Conclusion

The Airbnb Dynamic Pricing Recommendation Engine offers hosts a data-driven approach to optimize their pricing. With the integration of predictive analytics and interactive dashboards, hosts can stay competitive and maximize occupancy and revenue.