Project Summary Report

Project 1: Airbnb Dynamic Pricing Recommendation Engine

Introduction
This project aims to build a dynamic pricing recommendation engine for Airbnb listings. The goal is to help
hosts optimize their nightly rates based on various factors such as seasonality, location, and listing features.

Abstract
A large dataset with over 100,000 listings was analyzed to find optimal pricing strategies. Machine learning
models were developed to predict suitable nightly prices using key variables like property type, number of
bedrooms, location (city/zip), season, and demand trends.

Tools Used
- Python (Pandas, Sklearn, Pycaret)
- Power BI for visualization

Steps Involved in Building the Project
1. Data cleaning and preprocessing
2. Feature engineering (e.g., date-time, location encoding)
3. Exploratory data analysis
4. Model test training and validation
5. Building a dashboard in Power BI
6. Recommending optimal nightly prices for listings

Conclusion
The dynamic pricing engine demonstrated significant potential in improving pricing accuracy. Hosts can now
make informed decisions to adjust rates, leading to increased bookings and revenue.

Project Summary Report

Project 2: E-commerce Return Rate Reduction Analysis

Introduction
This project focuses on identifying patterns in product returns to help reduce return rates in an e-commerce
environment. The dataset includes order details, return status, customer and regional data.

Abstract
Through analysis of return rates across product categories, regions, and return reasons, insights were
generated to understand and reduce product returns. Factors such as shipping delays, product mismatches,
and size issues were evaluated.

Tools Used
- Python (Pandas, Seaborn, Matplotlib)
- Power BI for dashboarding

Steps Involved in Building the Project
1. Data preprocessing and handling nulls
2. Identifying key metrics (e.g., return rate, days to return)
3. Visual analysis using Power BI
4. Filtering by category, region, and reason
5. Recommendations for reducing returns

Conclusion
The analysis helped pinpoint high-return product categories and regions. Strategies like clearer product
descriptions, enhanced size guides, and improved shipping practices were recommended to reduce return
rates.