Short Term Rental Real Estate Investments Model

Project Proposal

Introduction

Financial success can be a difficult, seemingly unattainable vision for many families in the US. Debt is a prominent reality, salary increases are not commensurate to inflation, and layoffs are becoming relatively common. There are many strategies to overcome these inevitable fiscal hurdles, but one of the most successful approaches to achieving financial success lies in generating passive income. Unlike the direct "*time* = *money"* formula of traditional employment income, passive income is earned indirectly through investments and revenue-generating assets – therefore, it can multiply over time and maximize returns. The most common examples of passive income are stocks and real estate; each has its pros and cons, but the aim of this project is to address and inform real estate investment decisions to help first-time investors forecast the financial impact their investments may have over time.

Real estate comes in many forms in both commercial and residential settings, but commercial investments can be difficult for young buyers to entertain – residential investments are generally much more manageable, particularly in the context of small rental portfolios. Within the realm of rental properties, investors have several options ranging from long-term to short-term rental units. Whereas all rental units require regular upkeep and "sweat equity" from the investor, short-term rentals tend to allow greater flexibility and generate higher cash flow depending on the circumstances.

However, there are several factors to consider when making a short-term real estate investment, such as the general value of homes, market heat, sales values, and the general response and popularity of short-term rentals through platforms like airBNB. Taking all of these factors (and several others) under consideration to forecast the value of an investment requires intensive computation and is most fittingly done via predictive modeling in a machine learning environment. For context, investment value can be generalized in several ways, but a quick and thorough measure is the airDNA market index, which is based almost entirely on the cost/price analysis and business history of airBNB listings worldwide.

Objective

Develop a model that can predict the airDNA market score and revenue potential of an investment with >90% accuracy based on Zillow research data and airBNB reviews. Deploy the model in a production environment that allows users to forecast potential returns for short-term rental investments based on the city or market share of that investment. This project should be completed within two weeks, i.e. by 6/24/24.

Criteria for Success & Deliverables

Completion is determined by a deployed model that functions reasonably well – >90% accuracy is the goal, but accuracy does not determine completion in this case.

Other deliverables include a detailed project report and stakeholder presentation.

Scope of Solution Space

This project does not involve housing research data beyond the publicly available Zillow research, and airBNB reviews are only captured for 894 cities. Thus, certain metrics and market share characteristics will need to generalize to cover unseen cases.

Moreover, airDNA market scores are an estimated evaluation of investment returns - this project is by no means to serve as a tool for professionals, but it is merely a starting point for first time investors.

Constraints

The approximate budget for this project is $0. Thus, data will not be obtained from airBNB or airDNA via paid APIs; thus, data and data quality are limited to the efficacy of custom web scraping programs.

Moreover, web-scraping takes time, so certain data will be limited to what can be captured in a reasonable timeframe.

Stakeholders

There is no particular client for this project, though the ideal client would be a young buyer of decent financial standing and bandwidth to invest in short-term rental property.

Other potential stakeholders include local realtors, investors, and financial advisors.

Data Sources

Zillow housing research data: https://www.zillow.com/research/data/
airBNB reviews: https://www.airbnb.com
airDNA US market scores: https://app.airdna.co/data/us?tab=markets