Real Estate Investment Analysis

This project aims to provide real estate investment recommendations to a stakeholder by conducting a time series analysis of house sale prices in the United States. The goal is to identify the top ten locations that offer the highest Return on Investment (ROI) potential while exhibiting low price volatility, aligning with the stakeholder's risk preferences.

Business Understanding

The United States real estate industry presents a lucrative opportunity for investors, with significant valuation and projected growth rates. Making well-informed investment decisions and managing risks effectively are crucial for success in this industry. The project utilizes time series analysis techniques and a Zillow dataset spanning from 1996 to 2018 to identify the most promising locations for real estate investment.

Installation

To use this project, you need to follow these steps:

1. Clone the repository: `https://github.com/HMWIAM/P13.git`
2. Install the required dependencies: `pip install -r requirements.txt`
3. Download the Zillow dataset from source link and place it in the `data` directory.

Usage

1. Open the Jupyter Notebook `index.ipynb` .
2. Run each cell in the notebook sequentially to execute the analysis steps.
3. Follow the instructions and explore the results obtained.
4. Modify the notebook as needed for further analysis or customization.

Data

The project utilizes the Zillow dataset, which includes house sale prices from 1996 to 2018 in various locations across the United States. The dataset provides the necessary information for conducting time series analysis and identifying locations with high ROI potential.

Methods

The project follows an experimental design that includes the following steps:

1. Importing the required libraries for analysis.
2. Loading and exploring the Zillow dataset.
3. Cleaning and preparing the data for analysis.
4. Conducting Exploratory Data Analysis (EDA) to gain insights.
5. Pre-processing the data for time series modeling.
6. Developing predictive models and evaluating their performance.
7. Challenging the model with validation and testing.
8. Drawing conclusions based on the analysis.
9. Providing real estate investment recommendations to the stakeholder.

Results

The project aims to provide recommendations for the top ten locations with high ROI potential and low price volatility. The analysis will enable the stakeholder to make informed investment decisions and capitalize on the opportunities offered by the US real estate market.

Conclusion

Through this real estate investment analysis, we have leveraged time series analysis techniques and the Zillow dataset to identify locations that offer promising ROI potential. By considering both ROI and price volatility, we have provided valuable recommendations to the stakeholder for making informed investment decisions.

Contributing

Contributions to this project are welcome. If you find any issues or have suggestions for improvement, please submit a pull request or open an issue in the GitHub repository..