HPI Data Analysis and Forecasting with ARIMA

This project focuses on analyzing housing price index (HPI) data and forecasting future trends using the AutoRegressive Integrated Moving Average (ARIMA) model.

Overview

The project contains various data files, Jupyter notebooks, and documents that detail the analysis, methodology, and results of the project.

Files

- `HPI_master.csv`: A CSV file containing the HPI dataset provided by the Federal Housing Financy Agency.
- `Housing.csv`: A CSV file containing housing-related data.
- `Sale_Prices_State.csv`: A CSV file containing state-level sale price data sourced from Zillow.
- `state_statistics_for_download.xls`: An Excel file containing state-level pricing information by quarter.

Jupyter Notebooks

- `PR 1 Milestone 2 Code GreenertJ.ipynb`: A Jupyter notebook containing the code for the project.
- `PR 1 Milestone 2 GreenertJ.ipynb`: A Jupyter notebook containing the analysis and results for Milestone 2 of the project.

Documents

- `PR 1 Milestone 1 GreenertJ.docx`: A Word document detailing the first milestone of the project.
- `PR 1 Milestone 1 GreenertJ.pdf`: A PDF version of the first milestone document.
- `PR 1 Milestone 2 GreenertJ.pdf`: A PDF document containing the analysis and results for Milestone 2 of the project.
- `PR 1 Milestone 3 GreenertJ.pdf`: A PDF document detailing the third milestone of the project.
- `PR 1 Milestone 3 GreenertJ.pptx`: A PowerPoint presentation summarizing the third milestone of the project.

Getting Started

To explore the project, open the Jupyter notebooks in a compatible environment, such as JupyterLab or Google Colab, and run the code cells in sequence.

Make sure to have the necessary Python packages installed, including `pandas`, `numpy`, `matplotlib`, and `statsmodels`. You can install them using `pip`:

```
pip install pandas numpy matplotlib statsmodels
```

Author

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