

Forecasting Median house price in US cities using various Timeseries Forecasting models.

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Project Summary

In this project we will predict the median house price for a given city for the next 5 years based on the data from 2008-2021. This is done by applying Various methods and forecasting models in Timeseries.

Project Description

Objective: Buying a house is an expensive investment. But analyzing and predicting the House prices in the city of interest can be helpful for potential homeowners maximize the returns on their investment.

Usefulness: While buying a house we need to consider a lot of things one of the most important factor to consider is the cost. By having a forecast, the user can visualize where the best investment would be and the possible return in a few years on the given property. There are many websites which show this data, but Zillow stands out of the lot. For a normal user Zillow would work but for someone with more technical Knowledge or who wants to see the prediction with different models our project would be helpful.

Dataset: The dataset was collected from Zillow <https://www.zillow.com/research/data/> where the data is updated monthly, the data consists of the median sale price of house in all US cities. Monthly data is available from 2008 April to 2021 December (165 records per city), For 95 US cities. For NY we have a gap of data between 2008 and 2012. We may have to remove the city from our list or predict the data with the missing data (yet to be decided).

The data doesn't require much cleaning, but it needs to be transposed as the month year is provided as a column in this dataset. Any other preprocessing required will be done as needed.

Description and Functionality: As a basic functionality the user can select the city(s) of their interest and we give the prediction for 5 years. Or the user can input their price range and we tell which cities are within their budget for investing.

For Advanced users they can view graphs with KPI's such as top 5 cities to buy a house in based on the Return on investment, editable graphs (Adding cities, selecting timeframe). Selecting their own model for prediction. Few more options can be added on later.

Task Division: As I am the only member in the team, I will be working on all the Tasks. The webapp will be developed on Shiny and Progress will be tracked on Kanban Board.