**CONCEPT NOTE**

Date: 27/2/23

Submitted by: *Hemali patel*

Group Number:27

**TOPIC: Housing Price Prediction**

**Objective**

A home market is any market for properties that are negotiated directly between its owners and buyers, or via the services of real estate agents. Individuals and businesses are lured to this industry because it offers several profit potential as a result of global housing demand. Many variables influence these needs, including population, the economics, and politics. As a result, analysing such markets has proven difficult for data scientists and ML engineers throughout the world, since they must consider a wide variety of scientific fields, each addressing distinct types of data, in order to provide reliable findings to consumers and stakeholders. Many nowadays choose to buy houses via real estate agents. The price lists of various agencies varies. Consumers and agencies alike find it difficult to agree on an appropriate price for a home. Forecasting house prices is an essential aspect of real estate. The literature seeks to glean meaningful knowledge from historical property market data. In India, machine learning techniques are used to evaluate previous property transactions in order to identify beneficial models for home buyers and sellers.

**Rationale**

The Internet's growing popularity makes it acceptable for hosting adverts that were previously published in newspapers and periodicals. As of today, there are a large number of property advertisements on the Internet, and extracting knowledge from them is a topic that has been observed in recent ML literature Due to the large amounts of data from these advertisements, deep learning approaches appear to perform feature extraction for housing price prediction with good performance. For a long time, statistical models have been used to assess and predict property values. undertook a research to explain the variance in housing prices by studying the effect of geographical factors on property values. anticipated both purchasing and selling costs of real estate properties based entirely on factors such as geographical location, living area, and number of rooms, etc. Other geographical functions, such as the nearest police station and hearthplace station, have also been suggested.

**Topic Brief**

Determining the sale price of a home may be a worthwhile but difficult endeavour for all parties involved. There are several essential aspects in determining real estate prices, such as house size, location, and production year. Forecasting housing prices is important not just for real estate companies, investors, and potential home purchasers, but it may also provide information about the present economy, such as whether it is headed for a recession or a recovery. For example, given a successful machine learning model for forecasting housing prices, it may be easy to identify a recession if actual result prices are regularly lower than those predicted by the algorithm, indicating lesser interest in acquiring properties than expected.

The demand for real estate is predicted to rise by 17 million square feet by 2025. Rising urbanisation and rising house-rent income have increased demand for family assets.

The Indian real estate industry has already established itself as one of the top ten worldwide marketplaces. Real estate encompasses both unimproved land and improvements such as structures, fixtures, roads, buildings, and utility systems. Real estate comes in many different forms, each with its own purpose and value. The most common categories are land, residential, commercial, and industrial. Apartments, villas, and other types of real estate are examples. Real estate business refers to the profession of buying, selling, or renting out real estate.

**Purpose of the Study**

A house is a basic requirement for everyone on the planet, and humans want it to be an ideal location for their children to develop, to spend their lives in peace, and to have all of the lovely amenities. The need for housing is continuously growing as the population grows. Yet, when it comes to buying a house, not everyone wants to buy/own a luxury property. Yet, they will undoubtedly require a home with the required features in the ideal location. This research study looks into how machine learning models may be applied on housing price data sets to predict property prices. anticipated both purchasing and selling costs of real estate properties based entirely on factors such as geographical location, living area, and number of rooms, etc. Other geographical functions, such as the nearest police station and hearthplace station, have also been suggested.

**Hypothesis**

Null Hypothesis: The prediction that customers will buy a residence for a lower price.

Alternative Hypothesis: The forecast may or may not result in the purchase of a home for a lower price.

**Probable Outcome**

Analysts believe that rising home prices are being driven by rising housing demand and rising building material costs. Experts cautioned, however, that increasing interest rates might reduce affordability, particularly for first-time buyers.

Real estate markets provide an intriguing opportunity for data analysts to examine and forecast where property prices are rising. Property price forecasting is becoming increasingly necessary and profitable. Property prices are a reliable measure of a country's overall market state as well as its economic health. Buyers are not just concerned with the size (square feet) of the house, but there are several other elements that influence the price of a house/property. We are wrangling a big amount of property sales records with unknown data quality concerns based on the data given. This algorithm's business application is that classified websites can directly use it to forecast the prices of new properties that are going to be posted by taking some input factors and projecting the correct and justified price, i.e. avoiding taking a guess. price entries from clients, preventing any errors from entering the system. To the best of our understanding, this research on proactive pricing of houses in the Indian setting has never been published in the literature.

**Data Sources**

1. [**https://www.kaggle.com/datasets/anmolkumar/house-price-prediction-challenge**](https://www.kaggle.com/datasets/anmolkumar/house-price-prediction-challenge)
2. **https://www.kaggle.com/datasets/anmolkumar/house-price-prediction-challenge**
3. [GitHub - abhisheknagarajan/House-Price-Prediction-using-Machine-Learning-Algorithm: In this study, we are predicting the House Price using simple Linear Regression Techniques.](https://github.com/abhisheknagarajan/House-Price-Prediction-using-Machine-Learning-Algorithm)
4. [(PDF) House Price Prediction (researchgate.net)](https://www.researchgate.net/publication/349477129_House_Price_Prediction)
5. [(PDF) Housing Prices Prediction with a Deep Learning and Random Forest Ensemble (researchgate.net)](https://www.researchgate.net/publication/335527230_Housing_Prices_Prediction_with_a_Deep_Learning_and_Random_Forest_Ensemble)