

The background features abstract geometric shapes in two shades of blue. A large, light blue circle is partially visible in the top right corner. Below it, a darker blue shape, possibly a triangle or a large sector, extends towards the bottom right. The overall composition is modern and minimalist.

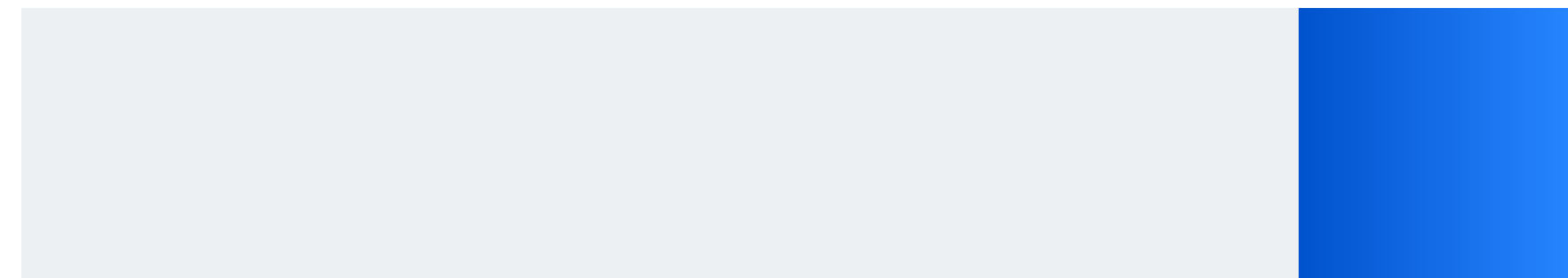
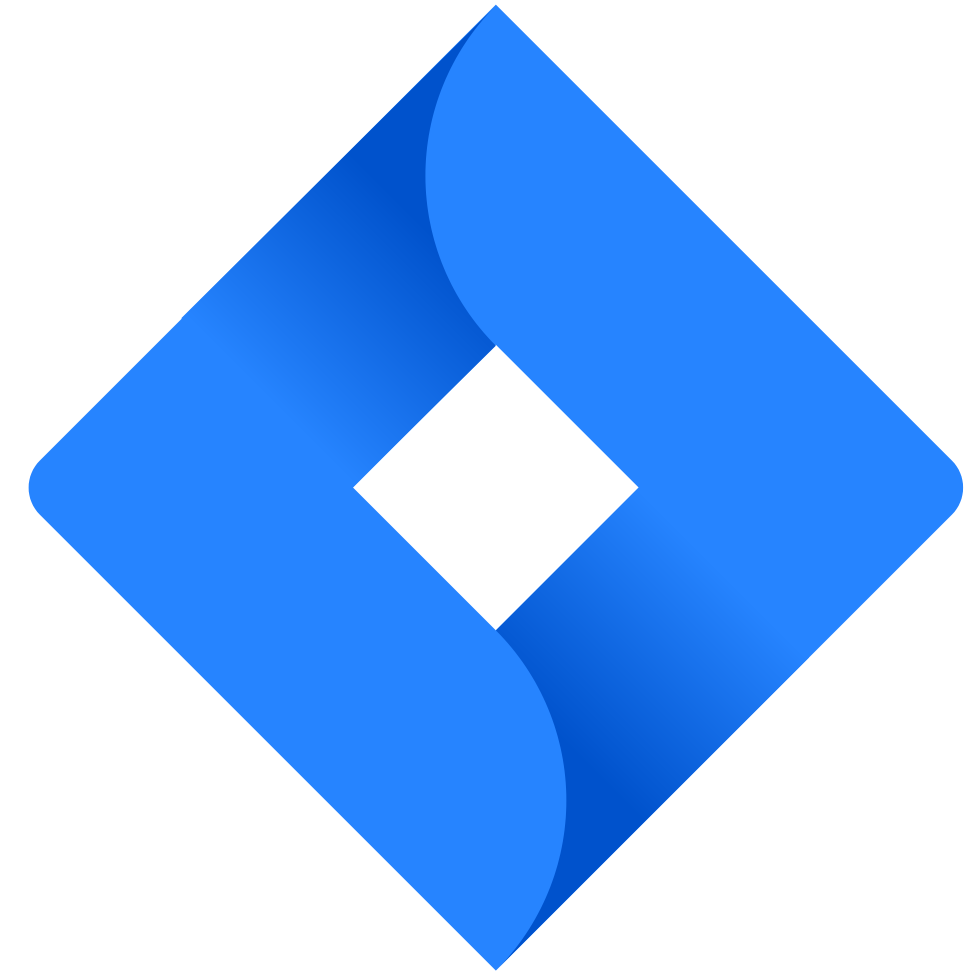
Cracking the Code: Predicting House Prices with Linear Regression

Table of Content

- Introduction
- What is Linear Regression?
- Data Collection
- Building the Model
- Evaluating the Model
- Conclusion

Introduction

House price prediction is the task of estimating the selling or buying price of a house based on various factors. It involves analyzing historical data, such as property attributes and market trends, using statistical and machine learning techniques. Accurate predictions can assist buyers, sellers, and real estate professionals in making informed decisions. Continuous model refinement and staying updated with the latest data are essential for accurate predictions in the dynamic real estate market.

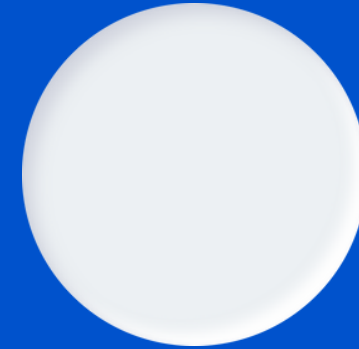


What is Linear Regression?

Linear regression is a statistical method used to analyze the relationship between two variables. In the context of house price prediction, these two variables are usually the size of the house and its corresponding price. By using linear regression, we can create a model that predicts the price of a house based on its size.



Dataset



Train.csv

1460 X 81



Test.csv

1459 X80



**Data
Description.txt**

Data Collection


Data collection is a crucial step in predicting house prices using linear regression. Without the right data, the model will not be accurate and reliable. There are different types of data that are needed such as location, size, age, number of bedrooms, and bathrooms. Other factors such as proximity to schools, hospitals, and transportation also play a role in determining house prices.

To collect the necessary data, various sources can be used such as online real estate listings, public records, and surveys. Data cleaning and preprocessing are also important to ensure that the data is accurate and consistent. Once the data is collected and cleaned, it can be used to build a linear regression model for house price prediction.





Data Cleaning

- Remove duplicate records
 - Handle missing values
 - Handling categorical data
 - Data type conversion
- 

Building the Model



The linear regression model needs to be trained using the data. This involves selecting the appropriate algorithm and setting the parameters to optimize the model's performance.




Evaluating the Model

There are several metrics that can be used to evaluate the performance of the model, including mean squared error, R-squared value, and root mean squared error. Mean squared error measures the average squared difference between the predicted values and the actual values of the target variable. R-squared value measures the proportion of the variance in the target variable that is explained by the independent variables. Root mean squared error is similar to mean squared error, but it takes the square root of the average squared difference.



Conclusion

Despite its limitations, linear regression remains a valuable tool for anyone interested in real estate. Whether you're a buyer, seller, or investor, understanding how to use linear regression can help you make smarter decisions and achieve your goals. We encourage you to continue learning about this topic and exploring new ways to apply it in your own work.



*Thank
you!*

Presented By: Uzma Mansoori