**Bangalore House Price Prediction**

This project uses machine learning techniques to predict house prices in Bangalore, India, based on various property features. It is developed as a Jupyter Notebook, providing an end-to-end solution from data preprocessing to model evaluation and visualization. The dataset used in this project includes information on property characteristics such as location, size, and square footage.

**Project Structure**

* **Data Preprocessing**: The notebook begins with importing necessary libraries and loading the dataset. It includes steps to clean the data, handle missing values, and convert categorical variables. Notable preprocessing steps:
  + **Feature Engineering**: Combines similar features and creates new ones, such as calculating the price per square foot to normalize property values.
  + **Outlier Detection and Removal**: Identifies and removes outliers in the data to improve model accuracy.
* **Exploratory Data Analysis (EDA)**: Visualizes data distributions and relationships between features and the target variable (price). Key insights from EDA include:
  + Distributions of various features such as location, area size, and number of bedrooms.
  + Correlations and trends that influence house prices in Bangalore.
* **Model Building**: This section applies multiple machine learning algorithms to build predictive models for house prices, including:
  + **Linear Regression**
* **Evaluation and Comparison**: The models are evaluated based on common regression metrics, such as Mean Absolute Error (MAE) and Root Mean Squared Error (RMSE), to determine the best-performing model for predicting house prices. The notebook also provides insights into the most important features impacting the predictions.

**Installation and Setup**

To run this notebook, you'll need the following dependencies:

* Python 3.x
* Jupyter Notebook
* Pandas
* Numpy
* Scikit-learn
* Matplotlib
* Seaborn

**Usage**

1. Clone this repository to your local machine.
2. Open the Bangalore\_House\_Price\_Prediction.ipynb file in Jupyter Notebook or JupyterLab.
3. Run each cell sequentially to preprocess data, build models, and evaluate results.

**Results and Insights**

The project provides a comparative analysis of different models and suggests an optimal approach for predicting property prices in Bangalore based on model performance. The results section outlines the best model chosen and offers a visual representation of actual versus predicted prices.