Australian Housing Prices prediction

This dataset can be used to predict hosing prices in Australia.
This dataset can be used to find relationships between housing prices and location.
This dataset can be used to find relationships between housing prices and features such as size, number of bedrooms, and number of bathrooms

Hint: RealEstateAU_1000_Samples.csv file

Instructions:
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1. Use Lifecycle of Data Sciece

Ans: Lifecycle of Data Science:
a. Data Collection: The dataset named "RealEstateAU_1000_Samples.csv" will be used for analysis and prediction.
b. Data Preprocessing: We will perform data cleaning, handling missing values, and feature engineering.
c. Model Training: We will train regression and classification models on the preprocessed data.
d. Model Evaluation: We will evaluate the models using appropriate metrics.
e. Model Deployment: We can deploy the best-performing model for prediction.

2. Use necessary data Preprocess techniques

Ans: Data Preprocessing Techniques:
a. Data Loading: Load the dataset from the provided CSV file.
b. Handling Missing Values: Handle any missing values in the dataset.
c. Feature Engineering: Extract relevant features such as location, size, number of bedrooms, and number of bathrooms.
d. Data Transformation: If required, perform feature scaling or normalization.

3. Use various Regression and Classification techniques for comparision

Ans: Regression and Classification Techniques:
a. Regression: Use regression algorithms such as Linear Regression, Random Forest Regression, or Gradient Boosting Regression to predict housing prices.
b. Classification: Use classification algorithms such as Logistic Regression, Random Forest Classification, or Gradient Boosting Classification to predict housing price categories (e.g., low, medium, high).

4. Use metrics for regression and classification when needed.

Ans: Evaluation Metrics:
a. Regression: Use metrics such as Mean Absolute Error (MAE), Root Mean Squared Error (RMSE), and R-squared to evaluate regression models.
b. Classification: Use metrics such as accuracy, precision, recall, and F1-score to evaluate classification models.

5. Use variosu Pipeline/Hyperparametr tuning techniques for improving performance

Ans:

Pipeline/Hyperparameter Tuning Techniques:

a. Pipeline: Build a pipeline to streamline the preprocessing and modeling steps.
b. Hyperparameter Tuning: Use techniques like grid search or random search to optimize hyperparameters of the models and improve performance.