🏠 California Housing Price Prediction

*This project predicts the median housing prices in California using **Machine Learning**. It includes **data preprocessing**, **visualization**, **model training**, and **evaluation** using multiple regression algorithms.*

📊 Dataset

*The dataset used is the **California Housing Dataset** available in `sklearn.datasets`.*
It contains information about:
- Median income
- Housing age
- Average rooms per household
- Average bedrooms per household
- Population
- Households
- Latitude and longitude
- Median house value (target)

⚙️ Features

- Data loading and exploration
- Data cleaning and preprocessing

- Feature scaling
- Data visualization using Matplotlib & Seaborn
- Model training using:
  - Linear Regression
  - Decision Tree Regressor
  - Random Forest Regressor
  - Gradient Boosting Regressor
- Model evaluation (R^2 Score, RMSE)

🚀 Tech Stack

- **Language:** Python
- **Libraries:**
  - NumPy
  - Pandas
  - Scikit-learn
  - Matplotlib
  - Seaborn
  - Jupyter Notebook

📈 Model Evaluation

Each model is evaluated using:
- **Mean Squared Error (MSE)**
- **Root Mean Squared Error (RMSE)**

*- **R^2 Score****

🧠 Results

*After testing multiple models, the **Random Forest Regressor** achieved the best accuracy with the lowest RMSE, making it suitable for predicting California housing prices.*

📁 File Structure