ABSTRACT (House Price Prediction using Random Forest Regression)

House price prediction plays an important role in real estate decision-making for buyers, sellers, and investors. This project focuses on developing a machine learning-based house price prediction system using the **Random Forest Regression algorithm**. The dataset is loaded in Google Colab and contains important features such as **Area (sqft), Bedrooms, Bathrooms, Floors, YearBuilt, Distance to City Center, Parking, Garden, and Quality Score**, with **Price** as the target variable.

To improve the dataset quality, preprocessing steps such as checking missing values, removing null entries, and eliminating duplicate records are performed. Then the dataset is divided into input features (X) and output target (y), and split into training and testing sets using an 80:20 ratio. The Random Forest Regression model is trained with **300 estimators**, and its performance is evaluated using the **R^2 score**, achieving a strong prediction accuracy ($R^2 \approx$ **0.87**).

Finally, the trained model allows real-time house price prediction by accepting custom feature values from the user and producing an estimated price. This project demonstrates the effectiveness of ensemble learning techniques like Random Forest in solving regression problems and provides an efficient model for estimating house prices based on multiple housing factors