***REAL ESTATE PRICE PREDICTION***

***Working of the project :***

* User Interface (UI):
  + When a user visits the website, they are presented with a form to predict real estate prices.
  + The form includes fields such as location, number of bedrooms, number of bathrooms, area in square feet, and various amenities available in the property.
  + Depending on the location selected by the user, specific input fields relevant to that location are displayed. For example, if the user selects Bengaluru, fields related to the number of bedrooms, bathrooms, and other features specific to Bengaluru are shown.
* JavaScript And Front End Funationality:
  + JavaScript code is included in the HTML file to handle dynamic behavior based on user interactions.
  + In the Front End, HTML file is created, where in the page is designed.
* Location Suggestions:
  + As the user types in the location input field, JavaScript triggers an AJAX request to the /suggest\_locations endpoint on the Flask backend.
  + The backend receives this request and suggests possible locations based on the user's input.
  + The suggestions are sent back to the frontend, where they are displayed beneath the location input field.
* Backend (Flask):
  + When the user submits the form, a POST request is sent to the /predict endpoint on the Flask backend.
  + The backend receives the form data, including the selected location and property details.
  + Based on the selected location, the backend loads the appropriate machine learning model (Bengaluru, Mumbai, or Delhi NCR) using pickle.
  + The backend preprocesses the input data, ensuring it is in the correct format for prediction.
  + Using the loaded machine learning model, the backend predicts the price of the property.
  + The predicted price is then sent back to the frontend to be displayed to the user.
* Machine Learning Models:
  + Three separate machine learning models are trained for each location (Bengaluru, Mumbai, and Delhi NCR) using historical real estate data.
  + These models are trained to predict property prices based on various features such as the number of bedrooms, bathrooms, area, other amenities, etc.
  + Linear regression models are chosen for their simplicity and effectiveness in predicting continuous variables like price.
  + The accuracy of this model is around 85-90% for all the 3 location datasets.
* Data Preprocessing:
  + Before training the machine learning models, the data is preprocessed to handle missing values and ensure consistency.
  + Features are selected based on their relevance and importance in predicting property prices.
  + Data is split into training and testing sets to evaluate the models' performance and prevent overfitting.
  + Also , the dataset is analysed thoroughly.
* Result Presentation:
  + Once the predicted price is obtained from the backend, it is displayed to the user on the webpage.
  + The user can then see an estimated price for the property based on the provided details.