**Final Project-Part 3**

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**Purpose/audience:**

The goal of our app is to help buyers find the estimated house price based on the desired features i.e area, no. of bathrooms, number of bedrooms, number of parking spaces, stories, furnishing status, near to the main road, guest room, basement, hot water heating, air-conditioning and preference of area.

Users will be able to see graphs showing a comparison of how estimated price changes with changes in features.

Our app will help buyers find estimated prices of homes based on the features they like. It will help buyers avoid homes that are out of their budget range. This will reduce the time buyers spend searching for a home in their range.

**App architecture:**

Our app was created using the python streamlit application. We have a three-page app.

1. Home Page: Introduction page

2. EDA Page: This page displays Exploratory Data Analysis for the project conducted during Part 2

3. Interactive: This allows a user to give input about their preferred features and get a predicted price using our Linear Regression Model (Best Model). It is 68% accurate in predicting changes in price based on changes in features)

4. The code was built using a GitHub repo where each team member contributed to their branch which was eventually merged with the main branch.

**Tools Used:**

**Framework:** Streamlit

**Programming Language:** Python

**Tools:** Visual Studio Code

**Version Control: GitHub**

**Functionalities:**

The app shows a comprehensive view of our model to predict house prices

1. EDA – It shows an EDA page to showcase a summary about some key charts (scatterplot and histogram) and their analysis
2. Interactive – Lets the end user input some feature variables and to view the predicted house prices based on their inputs
3. Model choice – Linear regression is a simple model that can be leveraged to predict house prices and establish the relationship between key input variables and the predicted house price.

**App and link to GitHub (if the app only working locally - state in the issues section)**

Our app only works locally due to the unavailability of free hosts.

We have uploaded the application source code with GitHub at the following URL

**Code URL:** [**https://github.com/jacobshaw42/d590-applied-data-science-final**](https://github.com/jacobshaw42/d590-applied-data-science-final)

**Video URL:** [**https://www.youtube.com/watch?v=qBAonRbbVFg**](https://www.youtube.com/watch?v=qBAonRbbVFg)

**Issues**:

We faced issues in running visualizations directly with Streamlit. Some visualization didn’t work as expected, causing errors when trying to display in the app.

**Contributions:**

Arya Sachar:

Jacob Shaw: Setup repo and initial application. Helped other team members setup and with code and local running issues. Also, created interactive page’s response for using the inputs and returning a prediction based on our model.

Komal Khawaja: I worked on visualization and making input fields on interactive page.

**Reference**: Note- cite resources that were used to build the app (including using copilot/chatgpt/gemini or other tools to help debug and optimize).

**Yantra, K.** (n.d.). *Streamlit widgets: Revolutionize your data science and machine learning interfaces* [Video]. YouTube. <https://www.youtube.com/watch?v=WyqnyCqU01A>