**PROJECT REPORT:**

**PROJECT MEMBER:**

K191106 FIZZA ZAKIR

K191109 YOUSUF AMAN ULLAH

K191111 MOHAMMMAD AMIR

**PROJECT NAME:**

HOME SPHERE

Home sphere is a machine learning based project which helps us to determine the price of a house. House price prediction can help the developer determine the selling price of a house and can help the customer to arrange the right time to purchase a house. There are three factors that influence the price of a house which include physical conditions, concept and location.

Our project determines the predicted price of house by physical condition. Physical conditions are properties possessed by a house that can be observed by human senses, including the size of the house, the number of bedrooms, the availability of kitchen and garage, the availability of the garden, the area of land and buildings, and the age of the house while the concept is an idea offered by developers who can attract potential buyers, for example, the concept of a minimalist home, healthy and green environment, and elite environment

CODE LANGUAGE:

PYTHON

FRAMEWORK:

FLASK

**PROJECT RESEARCH:**

Problem formulation- What this does is it captures the dependent variables and calculates an estimated value. After that it tries repeatedly to make the estimated or predicted value as close as possible to the actual value.

Regression Performance- A coefficient which states amount of variation as in how much the difference is and the greater the coefficient the model can better explain the variation with different inputs

Used numpy for arrays to plot graphs

used pandas to work on data sets

used matplot to plot graphs

Routes are basically specific URLs, so when a logic is tasked it knows where it needs to perform it. Are basic defined functions, tasking them to do something specific.

@app.route creates a link between URL and the function.

Mock objects allow you to focus on important things so you can work on them later.

Templates help you keep your design changes and code separate so if for instance you update your software or html in the near future you wont need to update every function one at a time.

Placeholders are represented by a {{...}} so you can add variables here that will show on runtime.

To implement templates into your webpage you need to RENDER them. There are a list of predefined functions for it, for instance render\_template() : This function takes a template filename and a variable list of template arguments and returns the same template, but with all the placeholders in it replaced with actual values.

Conditions -->{% if title %}

<title>{{ title }} - Microblog</title>

{% else %}

If the function forgets to pass a value owing to no input, it shows a default template instead of an empty one.

plt.close after every plot or plt.show which displays and frees up memory at the same time.

Mean Square Error (MSE) is the most commonly used regression loss function. MSE is the sum of squared distances between our target variable and predicted values.

Mean Absolute Error (MAE) is another loss function used for regression models. MAE is the sum of absolute differences between our target and predicted variables. So it measures the average magnitude of errors in a set of predictions, without considering their directions.

Deciding which loss function to use

If the outliers represent anomalies that are important for business and should be detected, then we should use MSE. On the other hand, if we believe that the outliers just represent corrupted data, then we should choose MAE as loss.

L1 loss is more robust to outliers, but its derivatives are not continuous, making it inefficient to find the solution . L2 loss is sensitive to outliers, but gives more stable and closed form solution(by setting its derivates to zero).

Huber loss is less sensitive to outliers in data than the squared error loss. It’s also differentiable at 0. It’s basically absolute error, which becomes quadratic when error is small. How small that error has to be to make it quadratic depends on a hyperparameter, 𝛿 (delta), which can be tuned. In our case the bias.