ML LAB 3

26/08/2025

Link to dataset-: https://www.kaggle.com/datasets/yasserh/housing-prices-dataset

Q1. Implementing Simple Linear Regression from Scratch (OLS & GD)

a) Load the dataset and choose **"area"** as the feature and **"price"** as the target.

b) Write a function to implement **Simple Linear Regression using Ordinary Least Squares (OLS)** (derive slope & intercept).

c) Write another function for **Simple Linear Regression using Gradient Descent (GD)** with a learning rate and fixed iterations.

Q2. Multiple Linear Regression from Scratch (OLS & GD)

a) Use **all numerical features** (area, bedrooms, bathrooms, stories, parking) to predict **price**.

b) Implement **Multiple Linear Regression using OLS (Normal Equation)**.

c) Implement **Multiple Linear Regression using GD**.

Q3. Linear Regression using Scikit-Learn

a) Perform **Simple Linear Regression** (area → price) using sklearn.linear_model.LinearRegression.

b) Perform **Multiple Linear Regression** (all features → price).