Linear Regression

Predict Student's Exam Performance Using Linear Regression

You are given a dataset (student_exam_scores.csv) containing information about students' study habits, attendance, and previous academic performance.

Your task is to build a Linear Regression model to predict students' final exam score based on multiple factors, and visualize the regression line using matplotlib.

Column	Description
student_id	Unique identifier for each student
hours_studied	Average number of hours studied per day
sleep_hours	Average sleep duration (in hours)
attendance_percent	Attendance percentage throughout the course
previous_scores	Average marks obtained in previous tests
exam_score	Final exam score (Target Variable)

- Implement **Linear Regression from scratch using NumPy**.

- Start from loading and preparing the dataset, then train your model and visualize the results using **Matplotlib**.

- Finally, test your model on unseen data and evaluate its performance using appropriate metrics. Output the **accuracy** you get.

Logistic Regression

A medical research team wants to develop a predictive model to determine whether a patient is likely to have heart disease based on various physiological and biochemical measurements.

You are provided with the dataset Medicaldataset.csv, which includes the following variables:

Feature	Description
Age	Age of the patient
Gender	1 = Male, 0 = Female
Heart rate	Beats per minute
Systolic blood pressure	Systolic blood pressure reading
Diastolic blood pressure	Diastolic blood pressure reading
Blood sugar	Blood glucose level
CK-MB	Creatine kinase-MB enzyme level
Troponin	Troponin level
Result	Target variable (positive or negative heart disease diagnosis)

- Implement **Logistic Regression from scratch using NumPy**.

- Start from loading and preparing the dataset, then train your model and visualize the results using Matplotlib.

- Finally, test your model on unseen data and evaluate its performance using appropriate metrics. Output the accuracy you get.