### **Task 9**

**Machine Learning (Linear Regression)**

Upload .py or Ipynb extension file on GitHub public repo “100DaysofBytewise" and share the link in the submission form by 4 July 2024.

**Exercise: Load a dataset (e.g., the Boston Housing dataset from Scikit-Learn) and prepare the data for linear regression (e.g., split into training and testing sets).**

**Exercise: Implement linear regression using Scikit-Learn. Fit the model to the training data.**

**Exercise: Predict the target variable for the test set using the fitted linear regression model.**

**Exercise: Calculate the Mean Squared Error (MSE) of the linear regression model on the test set.**

**Hint: Use `mean\_squared\_error` from `sklearn.metrics`.**

**Exercise: Calculate the R-squared value of the linear regression model on the test set.**

**Exercise: Plot the regression line along with the actual data points to visually assess the model's performance.**

**Exercise: Evaluate the model's performance by comparing the predicted values with the actual values. Create a scatter plot of the predicted vs. actual values.**

**Exercise: Interpret the coefficients of the linear regression model. Explain the impact of each feature on the target variable.**