PROGRAMMING ASSESSMENT

3.Write a Python script that trains a simple linear regression model using scikit-learn. Use a dataset of your choice, split it into training and testing sets, and evaluate the model's performance.

Requirement:



import numpy as np

import pandas as pd

from sklearn.datasets import fetch\_california\_housing

from sklearn.model\_selection import train\_test\_split

from sklearn.linear\_model import LinearRegression

from sklearn.metrics import mean\_squared\_error, r2\_score

# Load the California Housing dataset

california = fetch\_california\_housing()

X = pd.DataFrame(california.data, columns=california.feature\_names)

y = pd.Series(california.target)

# Split the dataset into training and testing sets

X\_train, X\_test, y\_train, y\_test = train\_test\_split(X, y, test\_size=0.2, random\_state=42)

# Initialize and train the Linear Regression model

model = LinearRegression()

model.fit(X\_train, y\_train)

# Make predictions on the testing set

y\_pred = model.predict(X\_test)

# Evaluate the model's performance

mse = mean\_squared\_error(y\_test, y\_pred)

r2 = r2\_score(y\_test, y\_pred)

# Print the evaluation metrics

print(f"Mean Squared Error: {mse}")

print(f"R-squared: {r2}")

