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# Import necessary libraries

import numpy as np

from sklearn.model_selection import train_test_split

from sklearn.linear_model import LinearRegression

from sklearn.metrics import mean_squared_error

# Sample dataset (years of experience vs salary)

data = {

    'Years of Experience': [1, 2, 3, 4, 5, 6, 7, 8, 9, 10],

    'Salary': [50000, 55000, 60000, 65000, 70000, 75000, 80000, 85000, 90000, 95000]

}

# Convert data to numpy arrays

X = np.array(data['Years of Experience']).reshape(-1, 1)

y = np.array(data['Salary'])


# Split data 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)


# Create and train the linear regression model

model = LinearRegression()

model.fit(X_train, y_train)


# Make predictions using the model

predictions = model.predict(X_test)


# Calculate the Mean Squared Error (MSE)

mse = mean_squared_error(y_test, predictions)

print(f'Mean Squared Error (MSE): {mse}')


# Use the model to make a salary prediction

years_of_experience = 7

predicted_salary = model.predict(np.array([[years_of_experience]]))

print(f'Predicted salary for {years_of_experience} years of experience: ${predicted_salary[0]:.2f}')

output : Mean Squared Error (MSE): 0.0

Predicted salary for 7 years of experience: $80000.00

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