

Linear Regression is a popular supervised learning algorithm used for predicting continuous numerical values based on input features.

Here's a step-by-step guide to implementing Linear Regression using Python and the popular machine learning library, scikit-learn:

Step 1: Import the required libraries

```
import numpy as np
from sklearn.linear_model import LinearRegression
from sklearn.model_selection import train_test_split
from sklearn.metrics import mean_squared_error
```

Step 2: Prepare the dataset For this example, let's assume you have a dataset with two variables, X (input features) and y (target variable).

```
# Assuming X and y are NumPy arrays
X = ... # Input features
y = ... # Target variable
```

Step 3: 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)
```

Step 4: Create and train the Linear Regression model

```
model = LinearRegression()
model.fit(X_train, y_train)
```

Step 5: Make predictions

```
y_pred = model.predict(X_test)
```

Step 7: Print the evaluation results

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