

Machine Learning (Linear Regression)

Step 1.

Load Dataset

Features = [[2D]]

Target = [1D]

Step 2.

sns.pairplot(data,'attribute')

Linear Regression $Y = mX + c$

where

x is Feature which is independent and

y is target to be predicted which depends on x

m is known as coefficient

c is known intercept

Step 3.

Split Training and Testing Dataset

```
from sklearn.model_selection import train_test_split
X_train, X_test, y_train, y_test = train_test_split(
    features, target, test_size=0.33, random_state
=42)
```

Check length of (len(X_train) and len(X_test))

```
from sklearn.linear_model import LinearRegression
lin = LinearRegression() # creating a model
```

Step 4

Trained your model or fitting data to model

```
lin.fit(X_train,y_train) ## Training data
```

our intercept c

our coefficient m

lin.intercept_

lin.coef_

Step 5

lets find pridicted values of y as TestData

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

```
y_pred[:5] # predict values
```

```
np.array(y_test[:5]) # Test value (Actual Data)
```

Step 6 (Model Evaluation)

```
from sklearn.metrics import mean_squared_error  
mean_squared_error(y_test,y_pred) ## y_test and y_Pred
```

```
from sklearn.metrics import r2_score  
r2_score(y_test,y_pred) ## y_test and y_pred
```

Visulations

Comparision Between Actual and Predicted Value

Actual Data	X_test and y_test
Predicted Data	X_test and y_pred