

Simple Liner Regression

Importing libraries

Firstly we will import the library which will help in building the model. Below is the code for it:

```
# Import all libraries

import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

```
# Import dataset

dataset = pd.read_csv('salary_data.csv')
```

```
dataset.describe()
```

```
dataset.info()
```

```
dataset.head(10)
```

Extracting dependent and independent Variables

```
X = dataset.iloc[:, :1]
X.head()

y = dataset.iloc[:, 1]
y.head()
```

Splitting the dataset into train set and test set

```
# Splitting the dataset into train set and test set

from sklearn.model_selection import train_test_split
```

```
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2,  
random_state=0)
```

Fitting simple linear regression to training set

```
# Fitting simple linear regression to training set  
  
from sklearn.linear_model import LinearRegression  
  
model = LinearRegression().fit(X_train, y_train)  
  
pred = model.predict(X_train)
```

Visualizing the training set results

```
# Visualizing the training set results  
  
plt.scatter(X_train, y_train, color = 'red')  
plt.plot(X_train, pred, color = 'blue')  
plt.title("Salary vs Experience (Training Test)")  
plt.xlabel("Year of Experience")  
plt.ylabel("Salary")
```



Visualizing the test set results

```
# Visualizing the test set results  
  
plt.scatter(X_test, y_test, color = 'red')
```

```
plt.plot(X_train, pred, color = 'blue')  
plt.title("Salary vs Experience (Test Set)")  
plt.xlabel("Year of Experience")  
plt.ylabel("Salary")
```



Calculate Coefficient and Intercept of the model

```
model.coef_  
model.intercept_
```

Calculate score of model

```
model.score(X_train, y_train)  
model.score(X_test, y_test)
```

Predicting the result of 10 years Experience

```
model.predict([[10]])
```