

Experiment 3

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Branch: CSE

Semester: 5th

5thSection/Group:20BCS_WM_903_A **Subject Code:** CSP-317

Subject Name: Machine Learning Lab

1. Aim/Overview of the practical:

Implementing Linear Regression on a given set of data

2. Source Code:

```
#Jitesh kumar
```

```
#UID:-20BCS2334
```

```
import numpy as np
```

```
import matplotlib.pyplot as plt
```

```
import pandas as pd
```

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

```
X = dataset.iloc[:, :-1].values #get a copy of dataset exclude last column
```

```
y = dataset.iloc[:, 1].values #get array of dataset in column 1st
```

```
# Splitting the dataset into the Training 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=1/3, random_state=0)
```

```
# Fitting Simple Linear Regression to the Training set
```

```
from sklearn.linear_model import LinearRegression
```

```
regressor = LinearRegression()
```

```
regressor.fit(X_train, y_train)
```

```
# Predicting the Test set results
```

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

```
# Visualizing the Training set results
```

```
viz_train = plt
```

```
viz_train.scatter(X_train, y_train, color='red')
```

```
viz_train.plot(X_train, regressor.predict(X_train), color='black')
```

```
viz_train.title('Salary VS Experience (Training set)')
```

```
viz_train.xlabel('Year of Experience')
```

```
viz_train.ylabel('Salary')
```

```
viz_train.show()
```

```
# Visualizing the Test set results
```

```
viz_test = plt
```

```
viz_test.scatter(X_test, y_test, color='brown')
```

```
viz_test.plot(X_train, regressor.predict(X_train), color='black')
```

```
viz_test.title('Salary VS Experience (Test set)')
```

```
viz_test.xlabel('Year of Experience')
```

```
viz_test.ylabel('Salary')
```

```
viz_test.show()
```

3. Result/Output:

```
In [1]: #Jiteshkumar
#UID:-208CS2334
import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
dataset = pd.read_csv('salary_data.csv')
X = dataset.iloc[:, :-1].values #get a copy of dataset exclude last column
y = dataset.iloc[:, 1].values #get array of dataset in column 1st

# Splitting the dataset into the Training 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=1/3, random_state=0)

# Fitting Simple Linear Regression to the Training set
from sklearn.linear_model import LinearRegression
regressor = LinearRegression()
regressor.fit(X_train, y_train)

# Predicting the Test set results
y_pred = regressor.predict(X_test)

# Visualizing the Training set results
viz_train = plt
viz_train.scatter(X_train, y_train, color='red')
viz_train.plot(X_train, regressor.predict(X_train), color='black')
viz_train.title('Salary VS Experience (Training set)')
viz_train.xlabel('Year of Experience')
viz_train.ylabel('Salary')
viz_train.show()

# Visualizing the Test set results
viz_test = plt
viz_test.scatter(X_test, y_test, color='brown')
viz_test.plot(X_train, regressor.predict(X_train), color='black')
viz_test.title('Salary VS Experience (Test set)')
viz_test.xlabel('Year of Experience')
```

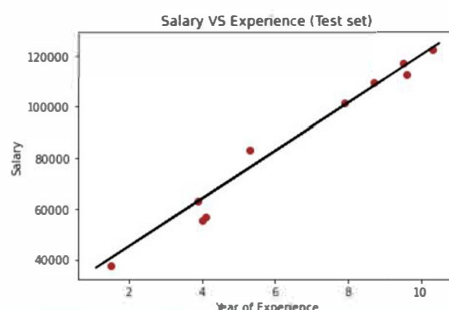
File Edit View Insert Cell Kernel Widgets Help

Trusted

Python :

Run Code

```
viz_test.plot(X_train, regressor.predict(X_train), color='black')
viz_test.title('Salary VS Experience (Test set)')
viz_test.xlabel('Year of Experience')
viz_test.ylabel('Salary')
viz_test.show()
```



Learning outcomes (What I have learnt):

1. To understand Regression .
2. To analyze different datasets with the help of python and pandas library.
3. Learning about different 'library/package of python.
4. Learn about the different methods/functions that are needed for Regression on the given dataset.
5. Learning of different Machine Learning Functions

Evaluation Grid :

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.	Student Performance (Conduct of experiment) objectives/Outcomes.		12
2.	Viva Voce		10
3.	Submission of Work Sheet (Record)		8
	Total		30