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In [71]: # Importing the libraries

import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
# Importing the dataset (Sample of data is shown in table)

dataset = pd.read_csv('G:\college\MSC\ML\salary_data.csv')

In [72]: # Pre-processing the dataset, here we will divide the data set into the dependent varia
#independent variable. x as independent and y as dependent or target variable.
X = dataset.iloc[:, :-1].values
y = dataset.iloc[:, 1].values

In [73]: # 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

#Here test size 1/3 shows that from total data, 2/3 part is for training the model,
#and the rest 1/3 is used for testing the model.

In [74]: # Let's Fit our Simple Linear Regression model to the Training set

from sklearn.linear_model import LinearRegression
regressor = LinearRegression()
regressor.fit(X_train, y_train)

#The Linear Regression model is trained now.
#This model will be used for predicting the dependent variable.

Out[74]: LinearRegression()

In [75]: # Predicting the Test set results
y_pred = regressor.predict(X_test)

In [76]: # Visualising the Test set results

plt.scatter(X_test, y_test, color = 'blue')
plt.plot(X_train, regressor.predict(X_train), color = 'red')
plt.title('Salary of Employee vs Experience (Test set)')
plt.xlabel('Years of Experience')
plt.ylabel('Salary')
plt.show()
```



In [77]: *# Parameter of model*

```
print(regressor.intercept_)
print(regressor.coef_)
```

```
34725.26353790614
[5254.22382671]
```

In [83]: *#So the interceptor (a) value is 32517. This suggests that any fresher (zero experience) would be getting around 32517 amount as salary.*

#The coefficient for our model came out as 6479.
#It suggests that keeping all the other parameters constant, the change in one unit of independent variable (years of exp.) will yield a change of 6479 units in salary.

```
print('X_test: ', X_test)
```

```
print('y_test: ', y_test)
```

```
print('y_pred:', y_pred)
```

```
X_test: [[4.]
 [2.]]
y_test: [55749 43525]
y_pred: [55742.15884477 45233.71119134]
```

In [79]: *# Evaluation of model*

```
from sklearn import metrics
print('MAE:', metrics.mean_absolute_error(y_test, y_pred))
print('MSE:', metrics.mean_squared_error(y_test, y_pred))
print('RMSE:', np.sqrt(metrics.mean_squared_error(y_test, y_pred)))
```

```
MAE: 857.7761732851977
MSE: 1459870.368400481
RMSE: 1208.2509542311486
```

In []: