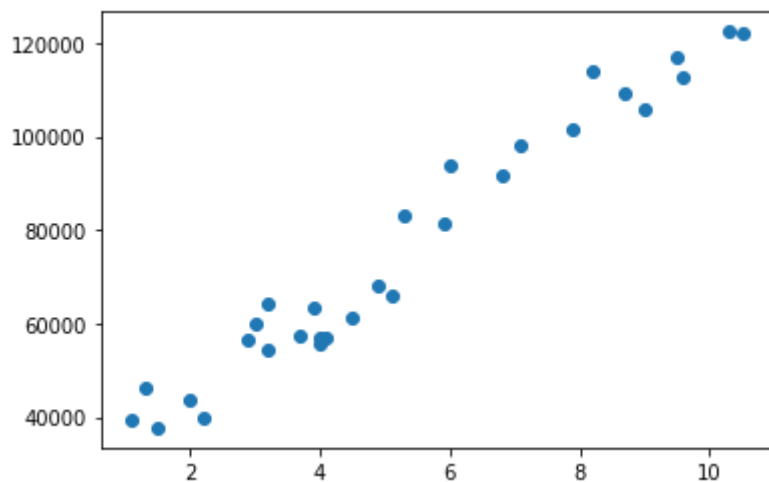


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Salary Prediction using Linear Regression

```
import numpy as np
from sklearn import datasets, metrics
from sklearn.preprocessing import StandardScaler
import pandas as pd
import matplotlib.pyplot as plt
import numpy as np
```

```
data=pd.read_csv('Salary_Data.csv')
X=data.iloc[:,0]
Y=data.iloc[:,1]
plt.scatter(X,Y)
plt.show()
```



```
m=0
c=0
L=0.0001
```

```

epochs=1000
n=len(X)

for i in range(epochs):
    Y_prediction =m*X + c
    Derivative_m = (-2 /n)* sum(X*(Y-Y_prediction))
    Derivative_c = (-2 /n)* sum(Y-Y_prediction)
    m = m-L*Derivative_m
    c= c- L*Derivative_c

```

```
print(m,c)
```

```
12836.600965885045 2915.2044856014018
```

```

Y_prediction=m*X+c
result = pd.DataFrame({'Years Experience': X, 'Actual Salary': Y, 'Predicted Salary': Y_prediction})
result.head()

```

	Years Experience	Actual Salary	Predicted Salary
0	1.1	39343.0	17035.465548
1	1.3	46205.0	19602.785741
2	1.5	37731.0	22170.105934
3	2.0	43525.0	28588.406417
4	2.2	39891.0	31155.726611

```
Y_prediction=m*X+c
```

```

plt.scatter(X,Y)
plt.plot([min(X),max(X)], [min(Y_prediction),max(Y_prediction)],color='blue')
plt.show()

```

