In [2]:
```
import pandas as pd
import numpy as np
```

In [3]:
```
from google.colab import drive
drive.mount('/content/drive')
```

```
Mounted at /content/drive
```

In [5]:
```
d=pd.read_csv('/content/Salary_Data.csv')
```

In [ ]:
```
print(d)
```

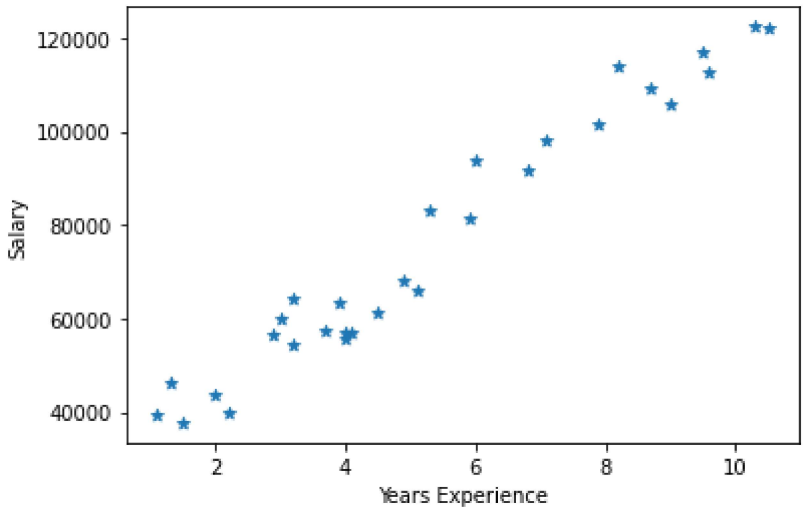
```
    YearsExperience    Salary
0               1.1   39343.0
1               1.3   46205.0
2               1.5   37731.0
3               2.0   43525.0
4               2.2   39891.0
5               2.9   56642.0
6               3.0   60150.0
7               3.2   54445.0
8               3.2   64445.0
9               3.7   57189.0
10              3.9   63218.0
11              4.0   55794.0
12              4.0   56957.0
13              4.1   57081.0
14              4.5   61111.0
15              4.9   67938.0
16              5.1   66029.0
17              5.3   83088.0
18              5.9   81363.0
19              6.0   93940.0
20              6.8   91738.0
21              7.1   98273.0
22              7.9  101302.0
23              8.2  113812.0
24              8.7  109431.0
25              9.0  105582.0
26              9.5  116969.0
27              9.6  112635.0
28             10.3  122391.0
29             10.5  121872.0
```

In [6]:
```
d.head()
```

Out[6]:

	YearsExperience	Salary
0	1.1	39343.0
1	1.3	46205.0
2	1.5	37731.0
3	2.0	43525.0
4	2.2	39891.0

In [7]:
```
import matplotlib.pyplot as plt
plt.scatter(d.YearsExperience,d.Salary,marker='*')
plt.xlabel("Years Experience")
plt.ylabel("Salary")
plt.show()
```



In [8]:
```
X = d.iloc[:,:-1].values
Y = d.iloc[:,1:].values
X
```

Out[8]:
```
array([[ 1.1],
       [ 1.3],
       [ 1.5],
       [ 2. ],
       [ 2.2],
       [ 2.9],
       [ 3. ],
       [ 3.2],
       [ 3.2],
       [ 3.7],
       [ 3.9],
       [ 4. ],
       [ 4. ],
       [ 4.1],
       [ 4.5],
       [ 4.9],
       [ 5.1],
       [ 5.3],
       [ 5.9],
       [ 6. ],
       [ 6.8],
       [ 7.1],
       [ 7.9],
       [ 8.2],
       [ 8.7],
       [ 9. ],
       [ 9.5],
       [ 9.6],
       [10.3],
       [10.5]])
```

In [9]:
```
Y
```

Out[9]:
```
array([[ 39343.],
       [ 46205.],
       [ 37731.],
       [ 43525.],
       [ 39891.],
       [ 56642.],
       [ 60150.],
       [ 54445.],
       [ 64445.],
       [ 57189.],
       [ 63218.],
       [ 55794.],
       [ 56957.],
       [ 57081.],
       [ 61111.],
       [ 67938.],
       [ 66029.],
       [ 83088.],
       [ 81363.],
       [ 93940.],
       [ 91738.],
       [ 98273.],
       [101302.],
       [113812.],
       [109431.],
       [105582.],
       [116969.],
       [112635.],
       [122391.],
       [121872.]])
```

In [10]:
```
train_x= np.array(d[["YearsExperience"]])
train_y = np.array(d[["Salary"]])
print(train_x)
```

```
[[ 1.1]
 [ 1.3]
 [ 1.5]
 [ 2. ]
 [ 2.2]
 [ 2.9]
 [ 3. ]
 [ 3.2]
 [ 3.2]
 [ 3.7]
 [ 3.9]
 [ 4. ]
 [ 4. ]
 [ 4.1]
 [ 4.5]
 [ 4.9]
 [ 5.1]
 [ 5.3]
 [ 5.9]
 [ 6. ]
 [ 6.8]
 [ 7.1]
 [ 7.9]
 [ 8.2]
 [ 8.7]
 [ 9. ]
 [ 9.5]
 [ 9.6]
 [10.3]
 [10.5]]
```

In [11]:
```
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=
```

In [12]:
```
X_train
```

Out[12]:
```
array([[ 9.6],
       [ 4. ],
       [ 5.3],
       [ 7.9],
       [ 2.9],
       [ 5.1],
       [ 3.2],
       [ 4.5],
       [ 8.2],
       [ 6.8],
       [ 1.3],
       [10.5],
       [ 3. ],
       [ 2.2],
       [ 5.9],
       [ 6. ],
       [ 3.7],
       [ 3.2],
       [ 9. ],
       [ 2. ],
       [ 1.1],
       [ 7.1],
       [ 4.9],
       [ 4. ]])
```

In [13]:
```
y_train
```

Out[13]:
```
array([[112635.],
       [ 55794.],
       [ 83088.],
       [101302.],
       [ 56642.],
       [ 66029.],
       [ 64445.],
       [ 61111.],
       [113812.],
       [ 91738.],
       [ 46205.],
       [121872.],
       [ 60150.],
       [ 39891.],
       [ 81363.],
       [ 93940.],
       [ 57189.],
       [ 54445.],
       [105582.],
       [ 43525.],
       [ 39343.],
       [ 98273.],
       [ 67938.],
       [ 56957.]])
```

In [14]:
```
from sklearn.linear_model import LinearRegression
model=LinearRegression()
model.fit(X_train,y_train)
```

Out[14]:
```
LinearRegression()
```

In [16]:
```
y_pred=model.predict(X_test)
```

In [17]:
```
plt.scatter(X_train, y_train, color = 'red')
plt.plot(X_train, model.predict(X_train), color = 'blue')
plt.title('Salary vs Experience (Training set)')
plt.xlabel('Years of Experience')
plt.ylabel('Salary')
plt.show()
```

In [18]:
```
plt.scatter(X_test, y_test, color = 'red')
plt.plot(X_test, model.predict(X_test), color = 'blue')
plt.title('Salary vs Experience (Testing set)')
plt.xlabel('Years of Experience')
plt.ylabel('Salary')
plt.show()
```

In [19]:
```
import numpy as np
print("Mean sum of squares (MSE): %.2f" % np.mean(((y_pred - y_test)** 2)**0.5))
```

```
Mean sum of squares (MSE): 2446.17
```

In [20]:
```
years_exp=float(input("Enter Years Of Experience:"))
sal=model.predict([[years_exp]])
print(sal)
```

```
Enter Years Of Experience:22
[[231656.75193867]]
```