Simple_Linear_regression_Model

Importing Library

```
import pandas as pd
from sklearn.linear_model import LinearRegression
from sklearn.model_selection import train_test_split
from matplotlib import pyplot as plt
```

Importing the data and Splitting the dataset into the Training set and Test set

```
df = pd.read_csv("Salary_Data.csv")
df.head()
x = df.drop('Salary',axis =1)
y = df['Salary']
x_train,x_test,y_train,y_test = train_test_split(x,y,test_size = 0.2,random_state = 1)
display(x_train,y_train)
```

	YearsExperience
26	9.5
3	2.0
24	8.7
22	7.9
23	8.2
4	2.2
2	1.5
25	9.0
6	3.0
18	5.9
13	4.1
7	3.2
27	9.6
1	1.3
16	5.1
0	1.1
15	4.9
29	10.5
28	10.3
9	3.7
8	3.2
12	4.0
11	4.0
5	2.9

```
26    116969.0
3      43525.0
24    109431.0
22    101302.0
23    113812.0
4      39891.0
2      37731.0
25    105582.0
6      60150.0
18     81363.0
13     57081.0
7      54445.0
27    112635.0
1      46205.0
16     66029.0
```

```
16     66029.0
0      39343.0
15     67938.0
29    121872.0
28    122391.0
9      57189.0
8      64445.0
12     56957.0
11     55794.0
5      56642.0
Name: Salary, dtype: float64
```

Next steps: Generate code with x_train | View recommended plots

Training the Simple Linear Regression model on the Training set

```
lr =LinearRegression()
lr.fit(x_train,y_train)
```

```
▾ LinearRegression
LinearRegression()
```

Predictive the Test set results

```
y_pred = lr.predict(x_test)
display(y_pred)
```

```
array([75074.50510972, 91873.8056381 , 62008.38247653, 81607.56642631,
       67608.14931932, 89073.92221671])
```

Visualising the Training set results

```
plt.scatter(x_train,y_train,color = 'green')
plt.plot(x_train,lr.predict(x_train),color = 'red')
plt.title('Salary vs Experience(Training set)')
plt.xlabel('Years of Experience')
plt.ylabel('Salary)')
plt.show()
```

Visualising the Test set results

```
plt.scatter(x_test,y_test,color = 'black')
plt.plot(x_train,lr.predict(x_train),color = 'blue')
plt.title('Salary vs Experience(Test set)')
plt.xlabel('Years of Experience')
plt.ylabel('Salary)')
plt.show()
```