K-NearestNeighbour REGRESSION

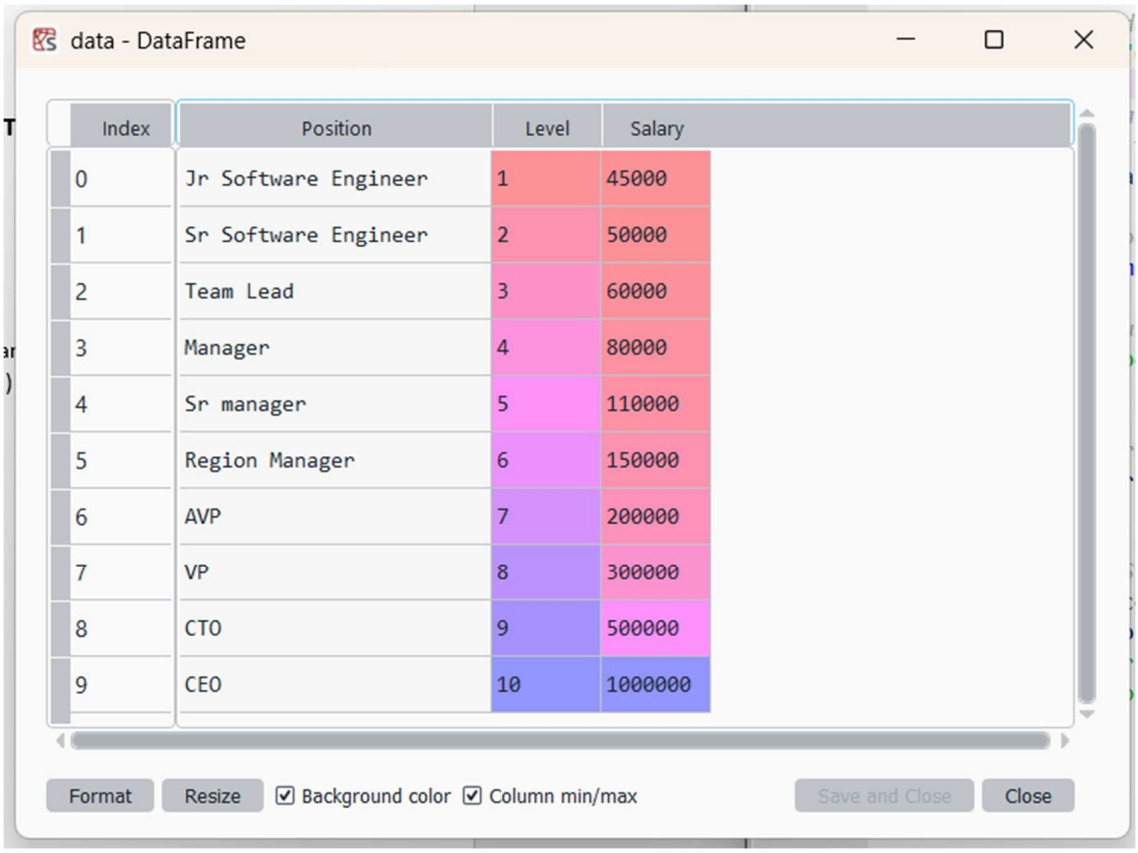
 # Importing Libraries

```
import pandas as pd

import matplotlib.pyplot as plt
```

 # let's import the dataset

```
data=pd.read_csv(r"C:\Users\TharunMahendra\NIT\6.Algorithms\1.Regression\Employee-Salary.csv")
```

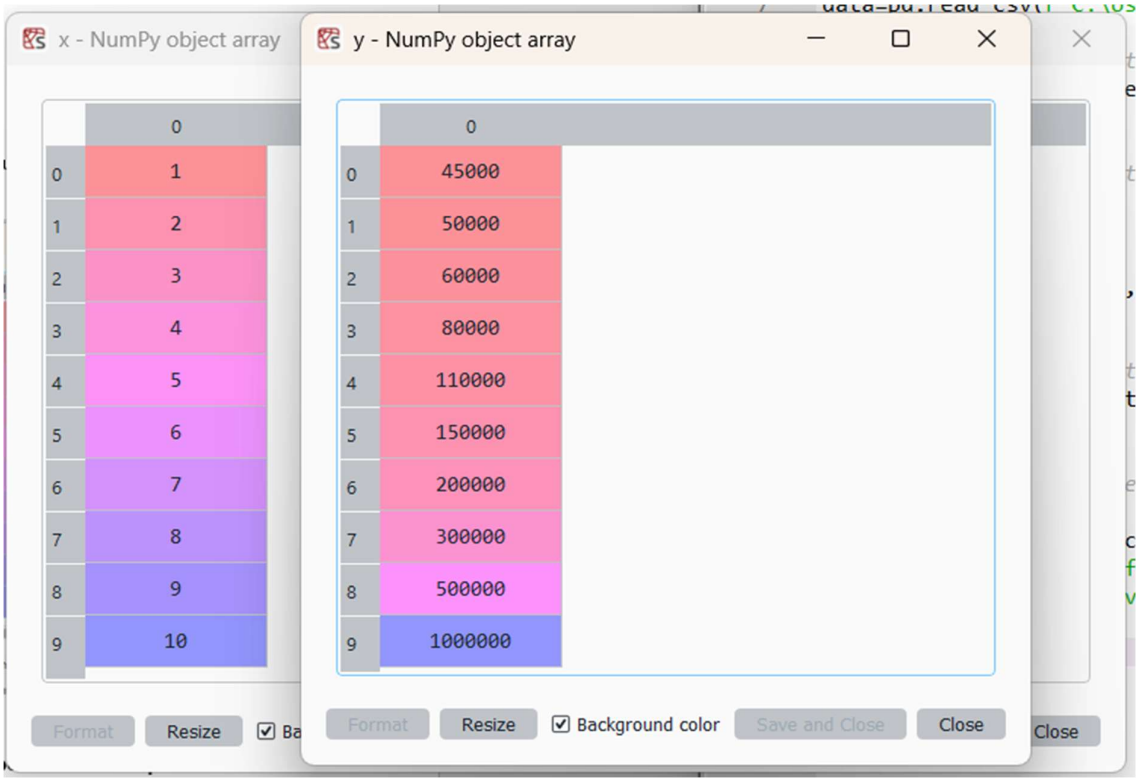


Index	Position	Level	Salary
0	Jr Software Engineer	1	45000
1	Sr Software Engineer	2	50000
2	Team Lead	3	60000
3	Manager	4	80000
4	Sr manager	5	110000
5	Region Manager	6	150000
6	AVP	7	200000
7	VP	8	300000
8	CTO	9	500000
9	CEO	10	1000000

#lets divide the dataset into independent and dependent variables

```
x=data.iloc[:,1:2].values

y=data.iloc[:,2].values
```



#fiiting the KNN model to the dataset

from sklearn.neighbors import KNeighborsRegressor

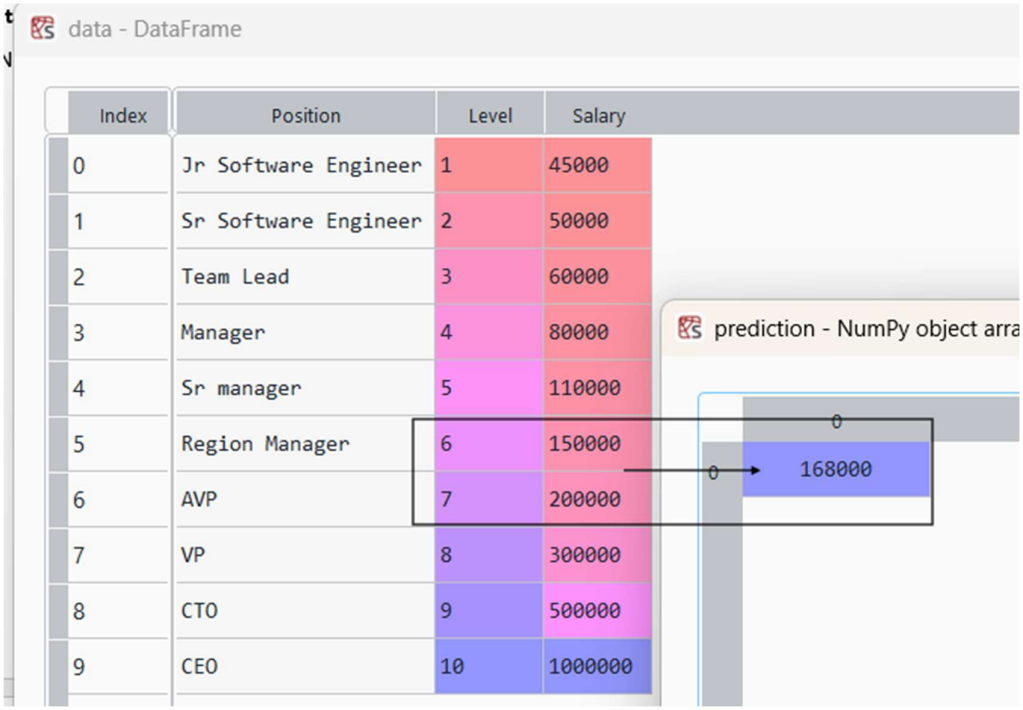
model=KNeighborsRegressor() **Parameter Tuning**

model.fit(x, y)

#predicting a new result

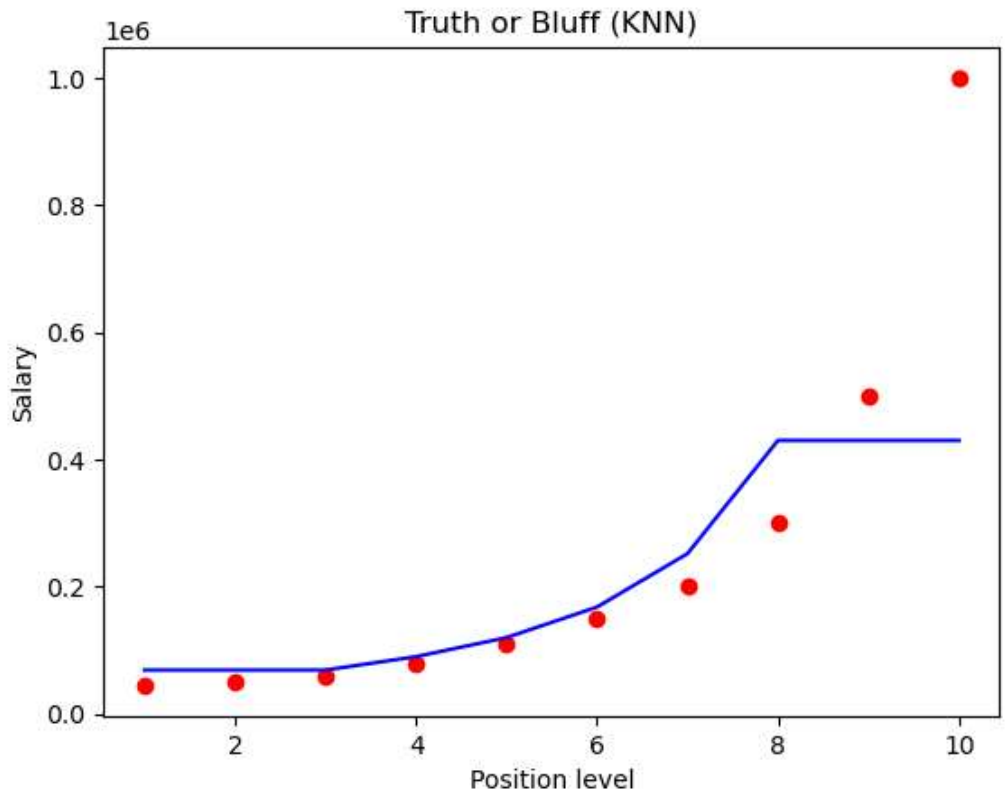
prediction=model.predict([[6.5]])

print(prediction)



 # Visualising the KNN results

```
plt.scatter(x, y, color = 'red')
plt.plot(x, model.predict(x), color = 'blue')
plt.title('Truth or Bluff (KNN)')
plt.xlabel('Position level')
plt.ylabel('Salary')
plt.show()
```



 # hyperParameter tuning

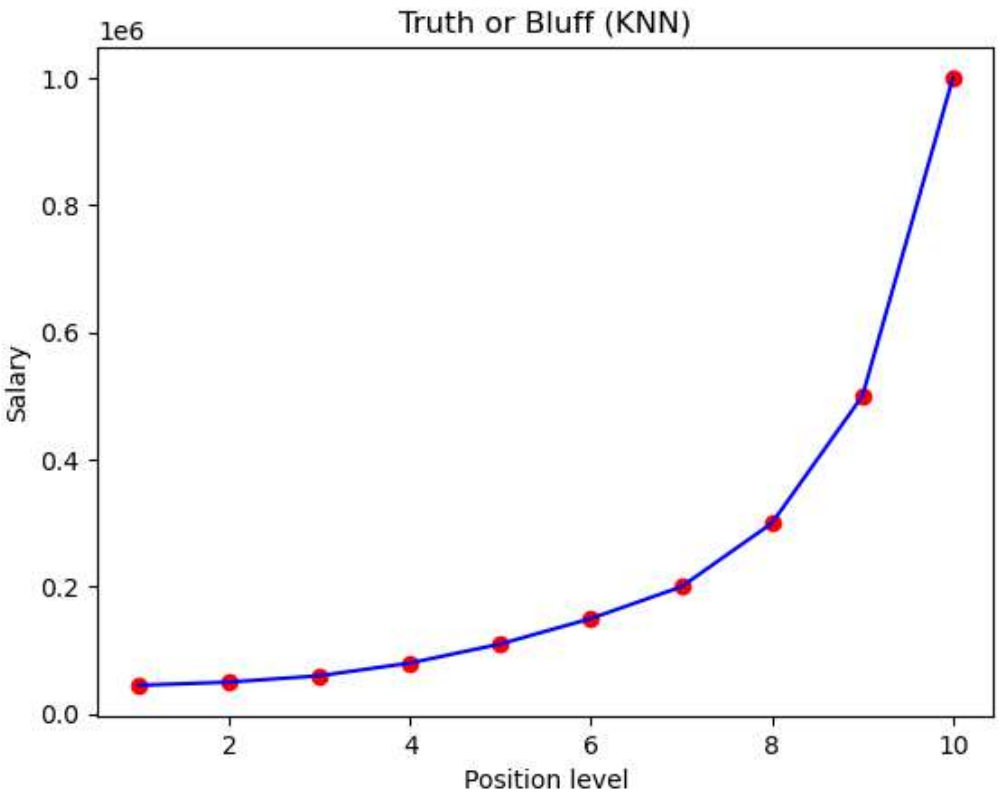
model=KNeighborsRegressor(n_neighbors=4,weights='distance')

data - DataFrame

Index	Position	Level	Salary
0	Jr Software Engineer	1	45000
1	Sr Software Engineer	2	50000
2	Team Lead	3	60000
3	Manager	4	80000
4	Sr manager	5	110000
5	Region Manager	6	150000
6	AVP	7	200000
7	VP	8	300000
8	CTO	9	500000
9	CEO	10	1000000

prediction - NumPy object array

	0
0	182500


Truth or Bluff (KNN)
1e6
1.0
0.8
0.6
0.4
0.2
0.0
Salary
2
4
6
8
10
Position level