

LRM - Linear Regression Model Algorithm

In [3]: *#importing libraries*

```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
```

In [4]: *#importing the dataset*

```
dataset = pd.read_csv(r"C:\Users\Jan Saida\OneDrive\Documents\Desktop\Excel sheets\emp_sal.csv")
dataset
```

Out[4]:

	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

In [5]: `x=dataset.iloc[:, 1:2].values` *#independent variable*
`y=dataset.iloc[:,2].values` *#dependent variable*

In [6]: x

```
Out[6]: array([[ 1],
               [ 2],
               [ 3],
               [ 4],
               [ 5],
               [ 6],
               [ 7],
               [ 8],
               [ 9],
               [10]], dtype=int64)
```

In [7]: y

```
Out[7]: array([ 45000,  50000,  60000,  80000, 110000, 150000, 200000,
                300000, 500000, 1000000], dtype=int64)
```

In [8]: *#Linear reg model -- Linear algorithm (bydefault degree - 1)*

```
from sklearn.linear_model import LinearRegression
lin_reg=LinearRegression()
lin_reg.fit(x,y)
```

Out[8]:

▼ LinearRegression ⓘ ?
LinearRegression()

In [9]: *#Linear regression Predictions*

```
lin_model_pred=lin_reg.predict([[6.5]])
lin_model_pred
```

Out[9]: array([330378.78787879])

In [10]: *#Linear regression visualization*

```
plt.scatter(x,y,color='red')
```

```
plt.plot(x, lin_reg.predict(x), color='blue')  
plt.title('Linear Regression graph')  
plt.xlabel('Position level')  
plt.ylabel('Salary')  
plt.show()
```

