

```
In [1]: #Experiment no.7
```

```
In [2]: #Aim :To perform a Simple Linear Regression
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```
In [3]: #Name:Janvi R.Kale  
#Roll no.:29  
#sec:A  
#sub:ET 1  
#date:22-09-2025
```

```
In [1]: #importing the basic library  
import pandas as pd
```

```
In [2]: import os
```

```
In [3]: os.getcwd()
```

```
Out[3]: 'C:\\Users\\This PC'
```

```
In [32]: os.chdir('C:\\Users\\This PC\\OneDrive\\Desktop\\dss practical datasets')
```

```
In [33]: data=pd.read_csv("Salary_Data.csv")
```

```
In [34]: data.head()
```

```
Out[34]:
```

	YearsExperience	Salary
0	1.1	39343
1	1.3	46205
2	1.5	37731
3	2.0	43525
4	2.2	39891

```
In [9]: data.shape
```

```
Out[9]: (30, 2)
```

```
In [10]: data.size
```

```
Out[10]: 60
```

```
In [11]: data.ndim
```

```
Out[11]: 2
```

In [12]: data.info

Out[12]: <bound method DataFrame.info of YearsExperience Salary
 0 1.1 39343
 1 1.3 46205
 2 1.5 37731
 3 2.0 43525
 4 2.2 39891
 5 2.9 56642
 6 3.0 60150
 7 3.2 54445
 8 3.2 64445
 9 3.7 57189
 10 3.9 63218
 11 4.0 55794
 12 4.0 56957
 13 4.1 57081
 14 4.5 61111
 15 4.9 67938
 16 5.1 66029
 17 5.3 83088
 18 5.9 81363
 19 6.0 93940
 20 6.8 91738
 21 7.1 98273
 22 7.9 101302
 23 8.2 113812
 24 8.7 109431
 25 9.0 105582
 26 9.5 116969
 27 9.6 112635
 28 10.3 122391
 29 10.5 121872>

In [21]: data.columns

Out[21]: Index(['YearsExperience', 'Salary'], dtype='object')

In [16]: data.describe()

Out[16]:

	YearsExperience	Salary
count	30.000000	30.000000
mean	5.313333	76003.000000
std	2.837888	27414.429785
min	1.100000	37731.000000
25%	3.200000	56720.750000
50%	4.700000	65237.000000
75%	7.700000	100544.750000
max	10.500000	122391.000000

```
In [18]: data.isnull().sum()
```

```
Out[18]: YearsExperience    0  
Salary                    0  
dtype: int64
```

Independent and dependent variable

```
In [23]: x=data.drop('Salary',axis=1)
```

```
In [24]: x.head()
```

```
Out[24]:
```

	YearsExperience
0	1.1
1	1.3
2	1.5
3	2.0
4	2.2

```
In [25]: y=data.Salary
```

```
In [26]: y.head()
```

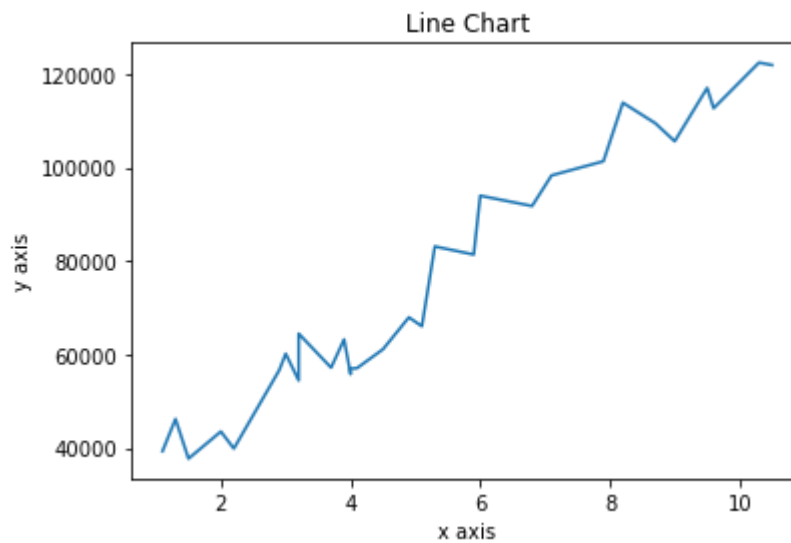
```
Out[26]: 0    39343  
1    46205  
2    37731  
3    43525  
4    39891  
Name: Salary, dtype: int64
```

Line chart

```
In [30]: #import library  
import numpy as np  
from matplotlib import pyplot as plt
```

```
In [31]: plt.plot(x,y)
plt.title("Line Chart")
plt.xlabel("x axis")

plt.ylabel("y axis")
plt.show()
```



◆ Conclusion: In this practical, we implemented Simple Linear Regression to understand the relationship between two variables — one independent and one dependent. By fitting a best-fit line to the data, we learned how to predict outcomes and analyze trends, which forms the basis for more advanced regression and machine learning models.

```
In [ ]:
```