

```
In [1]: import numpy as np
import matplotlib.pyplot as plt
import pandas as pd
```

```
In [2]: df=pd.read_csv('online.csv')
```

```
In [3]: df
```

Out[3]:		Marketing Spend	Administration	Transport	Area	Profit
	0	114523.61	136897.80	471784.10	Dhaka	192261.83
	1	162597.70	151377.59	443898.53	Ctg	191792.06
	2	153441.51	101145.55	407934.54	Rangpur	191050.39
	3	144372.41	118671.85	383199.62	Dhaka	182901.99
	4	142107.34	91391.77	366168.42	Rangpur	166187.94
	5	131876.90	99814.71	362861.36	Dhaka	156991.12
	6	134615.46	147198.87	127716.82	Ctg	156122.51
	7	130298.13	145530.06	323876.68	Rangpur	155752.60
	8	120542.52	148718.95	311613.29	Dhaka	152211.77
	9	123334.88	108679.17	304981.62	Ctg	149759.96
	10	101913.08	110594.11	229160.95	Rangpur	146121.95
	11	100671.96	91790.61	249744.55	Ctg	144259.40
	12	93863.75	127320.38	249839.44	Rangpur	141585.52
	13	91992.39	135495.07	252664.93	Ctg	134307.35
	14	119943.24	156547.42	256512.92	Rangpur	132602.65
	15	165349.20	122616.84	261776.23	Dhaka	129917.04
	16	78013.11	121597.55	264346.06	Ctg	126992.93
	17	94657.16	145077.58	282574.31	Dhaka	125370.37
	18	91749.16	114175.79	294919.57	Rangpur	124266.90
	19	86419.70	153514.11	0.00	Dhaka	122776.86
	20	76253.86	113867.30	298664.47	Ctg	118474.03
	21	78389.47	153773.43	299737.29	Dhaka	111313.02
	22	73994.56	122782.75	303319.26	Rangpur	110352.25
	23	67532.53	105751.03	304768.73	Rangpur	108733.99
	24	77044.01	99281.34	140574.81	Dhaka	108552.04
	25	64664.71	139553.16	137962.62	Ctg	107404.34
	26	75328.87	144135.98	134050.07	Rangpur	105733.54
	27	72107.60	127864.55	353183.81	Dhaka	105008.31
	28	66051.52	182645.56	118148.20	Rangpur	103282.38
	29	65605.48	153032.06	107138.38	Dhaka	101004.64
	30	61994.48	115641.28	91131.24	Rangpur	99937.59
	31	61136.38	152701.92	88218.23	Dhaka	97483.56
	32	63408.86	129219.61	46085.25	Ctg	97427.84
	33	55493.95	103057.49	214634.81	Rangpur	96778.92
	34	46426.07	157693.92	210797.67	Ctg	96712.80
	35	46014.02	85047.44	205517.64	Dhaka	96479.51
	36	28663.76	127056.21	201126.82	Rangpur	90708.19
	37	44069.95	51283.14	197029.42	Ctg	89949.14
	38	20229.59	65947.93	185265.10	Dhaka	81229.06
	39	38558.51	82982.09	174999.30	Ctg	81005.76
	40	28754.33	118546.05	172795.67	Ctg	78239.91
	41	27892.92	84710.77	164470.71	Rangpur	77798.83
	42	23640.93	96189.63	148001.11	Ctg	71498.49
	43	15505.73	127382.30	35534.17	Dhaka	69758.98
	44	22177.74	154806.14	28334.72	Ctg	65200.33
	45	1000.23	124153.04	1903.93	Dhaka	64926.08
	46	1315.46	115816.21	297114.46	Rangpur	49490.75
	47	0.00	135426.92	0.00	Ctg	42559.73
	48	542.05	51743.15	0.00	Dhaka	35673.41
	49	0.00	116983.80	45173.06	Ctg	14681.40

```
In [5]: df.shape
```

Out[5]: (50, 5)

```
In [7]: df.isnull().sum()
```

Out[7]: Marketing Spend 0
Administration 0
Transport 0
Area 0
Profit 0
dtype: int64

```
In [8]: x=df.drop(['Profit'],axis=1)
```

```
In [10]: x
```

Out[10]:		Marketing Spend	Administration	Transport	Area
	0	114523.61	136897.80	471784.10	Dhaka
	1	162597.70	151377.59	443898.53	Ctg
	2	153441.51	101145.55	407934.54	Rangpur
	3	144372.41	118671.85	383199.62	Dhaka
	4	142107.34	91391.77	366168.42	Rangpur
	5	131876.90	99814.71	362861.36	Dhaka
	6	134615.46	147198.87	127716.82	Ctg
	7	130298.13	145530.06	323876.68	Rangpur
	8	120542.52	148718.95	311613.29	Dhaka
	9	123334.88	108679.17	304981.62	Ctg
	10	101913.08	110594.11	229160.95	Rangpur
	11	100671.96	91790.61	249744.55	Ctg
	12	93863.75	127320.38	249839.44	Rangpur
	13	91992.39	135495.07	252664.93	Ctg
	14	119943.24	156547.42	256512.92	Rangpur
	15	165349.20	122616.84	261776.23	Dhaka
	16	78013.11	121597.55	264346.06	Ctg
	17	94657.16	145077.58	282574.31	Dhaka
	18	91749.16	114175.79	294919.57	Rangpur
	19	86419.70	153514.11	0.00	Dhaka
	20	76253.86	113867.30	298664.47	Ctg
	21	78389.47	153773.43	299737.29	Dhaka
	22	73994.56	122782.75	303319.26	Rangpur
	23	67532.53	105751.03	304768.73	Rangpur
	24	77044.01	99281.34	140574.81	Dhaka
	25	64664.71	139553.16	137962.62	Ctg
	26	75328.87	144135.98	134050.07	Rangpur
	27	72107.60	127864.55	353183.81	Dhaka
	28	66051.52	182645.56	118148.20	Rangpur
	29	65605.48	153032.06	107138.38	Dhaka
	30	61994.48	115641.28	91131.24	Rangpur
	31	61136.38	152701.92	88218.23	Dhaka
	32	63408.86	129219.61	46085.25	Ctg
	33	55493.95	103057.49	214634.81	Rangpur
	34	46426.07	157693.92	210797.67	Ctg
	35	46014.02	85047.44	205517.64	Dhaka
	36	28663.76	127056.21	201126.82	Rangpur
	37	44069.95	51283.14	197029.42	Ctg
	38	20229.59	65947.93	185265.10	Dhaka
	39	38558.51	82982.09	174999.30	Ctg
	40	28754.33	118546.05	172795.67	Ctg
	41	27892.92	84710.77	164470.71	Rangpur
	42	23640.93	96189.63	148001.11	Ctg
	43	15505.73	127382.30	35534.17	Dhaka
	44	22177.74	154806.14	28334.72	Ctg
	45	1000.23	124153.04	1903.93	Dhaka
	46	1315.46	115816.21	297114.46	Rangpur
	47	0.00	135426.92	0.00	Ctg
	48	542.05	51743.15	0.00	Dhaka
	49	0.00	116983.80	45173.06	Ctg

```
In [9]: y=df['Profit']
```

```
In [11]: y
```

Out[11]: 0 192261.83
1 191792.06
2 191050.39
3 182901.99
4 166187.94
5 156991.12
6 156122.51
7 155752.60
8 152211.77
9 149759.96
10 146121.95
11 144259.40
12 141585.52
13 134307.35
14 132602.65
15 129917.04
16 126992.93
17 125370.37
18 124266.90
19 122776.86
20 118474.03
21 111313.02
22 110352.25
23 108733.99
24 108552.04
25 107404.34
26 105733.54
27 105008.31
28 103282.38
29 101004.64
30 99937.59
31 97483.56
32 97427.84
33 96778.92
34 96712.80
35 96479.51
36 90708.19
37 89949.14
38 81229.06
39 81005.76
40 78239.91
41 77798.83
42 71498.49
43 69758.98
44 65200.33
45 64926.08
46 49490.75
47 42559.73
48 35673.41
49 14681.40
Name: Profit, dtype: float64

```
In [ ]:
```