

# dsbda-lab-assignment-b1

April 27, 2025

```
[1]: import pandas as pd
```

```
[2]: data = pd.read_csv('/content/Dataset_Facebook.csv', sep=';')
```

```
[3]: data
```

```
[3]:      Page total likes      Type      Category      Post Month      Post Weekday      Post Hour  \
0          139441      Photo          2          12          4          3
1          139441      Status          2          12          3         10
2          139441      Photo          3          12          3          3
3          139441      Photo          2          12          2         10
4          139441      Photo          2          12          2          3
..          ...          ...          ...          ...          ...          ...
495          85093      Photo          3          1          7          2
496          81370      Photo          2          1          5          8
497          81370      Photo          1          1          5          2
498          81370      Photo          3          1          4         11
499          81370      Photo          2          1          4          4
```

```
      Paid      Lifetime Post Total Reach      Lifetime Post Total Impressions  \
0      0.0          2752          5091
1      0.0         10460         19057
2      0.0          2413          4373
3      1.0         50128         87991
4      0.0          7244         13594
..      ...          ...          ...
495     0.0          4684          7536
496     0.0          3480          6229
497     0.0          3778          7216
498     0.0          4156          7564
499     NaN          4188          7292
```

```
      Lifetime Engaged Users      Lifetime Post Consumers  \
0          178          109
1         1457         1361
2          177          113
3         2211          790
```

4	671	410
..	...	...
495	733	708
496	537	508
497	625	572
498	626	574
499	564	524

Lifetime Post Consumptions \	
0	159
1	1674
2	154
3	1119
4	580
..	...
495	985
496	687
497	795
498	832
499	743

Lifetime Post Impressions by people who have liked your Page \	
0	3078
1	11710
2	2812
3	61027
4	6228
..	...
495	4750
496	3961
497	4742
498	4534
499	3861

Lifetime Post reach by people who like your Page \	
0	1640
1	6112
2	1503
3	32048
4	3200
..	...
495	2876
496	2104
497	2388
498	2452
499	2200

```

Lifetime People who have liked your Page and engaged with your post \
0      119
1      1108
2      132
3      1386
4      396
..      ...
495     392
496     301
497     363
498     370
499     316

```

```

comment  like  share  Total Interactions
0         4   79.0   17.0             100
1         5  130.0   29.0             164
2         0   66.0   14.0              80
3        58 1572.0  147.0            1777
4        19  325.0   49.0             393
..      ...      ...      ...      ...
495        5   53.0   26.0             84
496        0   53.0   22.0             75
497        4   93.0   18.0            115
498        7   91.0   38.0            136
499        0   91.0   28.0            119

```

[500 rows x 19 columns]

```
[4]: data.describe()
```

```

[4]:      Page total likes      Category  Post Month  Post Weekday  Post Hour \
count      500.000000    500.000000    500.000000    500.000000    500.000000
mean     123194.176000      1.880000      7.038000      4.150000      7.840000
std       16272.813214      0.852675      3.307936      2.030701      4.368589
min       81370.000000      1.000000      1.000000      1.000000      1.000000
25%      112676.000000      1.000000      4.000000      2.000000      3.000000
50%      129600.000000      2.000000      7.000000      4.000000      9.000000
75%      136393.000000      3.000000     10.000000      6.000000     11.000000
max      139441.000000      3.000000     12.000000      7.000000     23.000000

```

```

Paid  Lifetime Post Total Reach  Lifetime Post Total Impressions \
count  499.000000             500.00000             5.000000e+02
mean    0.278557             13903.36000             2.958595e+04
std     0.448739             22740.78789             7.680325e+04
min     0.000000             238.00000             5.700000e+02
25%     0.000000             3315.00000             5.694750e+03
50%     0.000000             5281.00000             9.051000e+03

```

75%	1.000000	13168.00000	2.208550e+04
max	1.000000	180480.00000	1.110282e+06

	Lifetime Engaged Users	Lifetime Post Consumers \
count	500.000000	500.000000
mean	920.344000	798.772000
std	985.016636	882.505013
min	9.000000	9.000000
25%	393.750000	332.500000
50%	625.500000	551.500000
75%	1062.000000	955.500000
max	11452.000000	11328.000000

	Lifetime Post Consumptions \
count	500.000000
mean	1415.130000
std	2000.594118
min	9.000000
25%	509.250000
50%	851.000000
75%	1463.000000
max	19779.000000

	Lifetime Post Impressions by people who have liked your Page \
count	5.000000e+02
mean	1.676638e+04
std	5.979102e+04
min	5.670000e+02
25%	3.969750e+03
50%	6.255500e+03
75%	1.486050e+04
max	1.107833e+06

	Lifetime Post reach by people who like your Page \
count	500.000000
mean	6585.488000
std	7682.009405
min	236.000000
25%	2181.500000
50%	3417.000000
75%	7989.000000
max	51456.000000

	Lifetime People who have liked your Page and engaged with your post \
count	500.000000
mean	609.986000
std	612.725618

min	9.000000
25%	291.000000
50%	412.000000
75%	656.250000
max	4376.000000

	comment	like	share	Total Interactions
count	500.000000	499.000000	496.000000	500.000000
mean	7.48200	177.945892	27.266129	212.120000
std	21.18091	323.398742	42.613292	380.233118
min	0.00000	0.000000	0.000000	0.000000
25%	1.00000	56.500000	10.000000	71.000000
50%	3.00000	101.000000	19.000000	123.500000
75%	7.00000	187.500000	32.250000	228.500000
max	372.00000	5172.000000	790.000000	6334.000000

```
[5]: data.shape
```

```
[5]: (500, 19)
```

```
[6]: #subset 1
data1 = data[['Page total likes', 'Category', 'Post Month', 'Post Weekday']].loc[0:
↪15]
data1
```

```
[6]:
```

	Page total likes	Category	Post Month	Post Weekday
0	139441	2	12	4
1	139441	2	12	3
2	139441	3	12	3
3	139441	2	12	2
4	139441	2	12	2
5	139441	2	12	1
6	139441	3	12	1
7	139441	3	12	7
8	139441	2	12	7
9	139441	3	12	6
10	139441	2	12	5
11	139441	2	12	5
12	139441	2	12	5
13	139441	2	12	5
14	138414	2	12	4
15	138414	2	12	3

```
[7]: #subset 2
data2 = data[['Page total likes', 'Category', 'Post Month', 'Post Weekday']].
↪loc[16:30]
data2
```

```
[7]:
```

	Page total likes	Category	Post Month	Post Weekday
16	138414	3	12	3
17	138414	1	12	2
18	138414	3	12	2
19	138414	3	12	1
20	138414	2	12	1
21	138414	1	12	7
22	138414	1	12	7
23	138414	3	12	7
24	138414	2	12	6
25	138458	2	12	6
26	138458	2	12	5
27	138458	3	12	5
28	138895	2	12	5
29	138895	1	12	4
30	138895	2	12	4

```
[8]: #subset 3
data3 = data[['Page total likes','Category','Post Month','Post Weekday']].
        loc[31:50]
data3
```

```
[8]:
```

	Page total likes	Category	Post Month	Post Weekday
31	138895	2	12	3
32	138895	3	12	3
33	138895	3	12	2
34	138895	1	12	2
35	138895	2	12	1
36	138895	3	12	1
37	138895	1	12	7
38	138895	2	12	7
39	138895	1	12	7
40	138895	2	12	6
41	138895	1	12	6
42	138353	1	12	5
43	138353	1	12	5
44	138353	1	12	4
45	138353	1	12	4
46	138353	1	12	3
47	138353	1	12	3
48	138353	1	12	2
49	138353	1	12	2
50	138353	2	11	1

```
[9]: #merging data1, data2 and data3
merging = pd.concat([data1,data2,data3])
merging
```

[9]:	Page	total likes	Category	Post Month	Post Weekday
0		139441	2	12	4
1		139441	2	12	3
2		139441	3	12	3
3		139441	2	12	2
4		139441	2	12	2
5		139441	2	12	1
6		139441	3	12	1
7		139441	3	12	7
8		139441	2	12	7
9		139441	3	12	6
10		139441	2	12	5
11		139441	2	12	5
12		139441	2	12	5
13		139441	2	12	5
14		138414	2	12	4
15		138414	2	12	3
16		138414	3	12	3
17		138414	1	12	2
18		138414	3	12	2
19		138414	3	12	1
20		138414	2	12	1
21		138414	1	12	7
22		138414	1	12	7
23		138414	3	12	7
24		138414	2	12	6
25		138458	2	12	6
26		138458	2	12	5
27		138458	3	12	5
28		138895	2	12	5
29		138895	1	12	4
30		138895	2	12	4
31		138895	2	12	3
32		138895	3	12	3
33		138895	3	12	2
34		138895	1	12	2
35		138895	2	12	1
36		138895	3	12	1
37		138895	1	12	7
38		138895	2	12	7
39		138895	1	12	7
40		138895	2	12	6
41		138895	1	12	6
42		138353	1	12	5
43		138353	1	12	5
44		138353	1	12	4
45		138353	1	12	4

46	138353	1	12	3
47	138353	1	12	3
48	138353	1	12	2
49	138353	1	12	2
50	138353	2	11	1

```
[11]: #sorting
sort_values=data.sort_values('Page total likes',ascending=False)
sort_values
```

```
[11]:      Page total likes      Type      Category      Post Month      Post Weekday      Post Hour      \
13          139441      Photo          2          12          5          3
1          139441      Status          2          12          3         10
0          139441      Photo          2          12          4          3
5          139441      Status          2          12          1          9
4          139441      Photo          2          12          2          3
..          ...          ...          ...          ...          ...          ...
495          85093      Photo          3           1          7          2
496          81370      Photo          2           1          5          8
497          81370      Photo          1           1          5          2
498          81370      Photo          3           1          4         11
499          81370      Photo          2           1          4          4
```

	Paid	Lifetime Post Total	Reach	Lifetime Post Total Impressions	\
13	0.0		2549	4896	
1	0.0		10460	19057	
0	0.0		2752	5091	
5	0.0		10472	20849	
4	0.0		7244	13594	
..	...		...	...	
495	0.0		4684	7536	
496	0.0		3480	6229	
497	0.0		3778	7216	
498	0.0		4156	7564	
499	NaN		4188	7292	

	Lifetime Engaged Users	Lifetime Post Consumers	\
13	249	134	
1	1457	1361	
0	178	109	
5	1191	1073	
4	671	410	
..	...	...	
495	733	708	
496	537	508	
497	625	572	
498	626	574	



499

564

524

## Lifetime Post Consumptions \

13	168
1	1674
0	159
5	1389
4	580
..	...
495	985
496	687
497	795
498	832
499	743

## Lifetime Post Impressions by people who have liked your Page \

13	3631
1	11710
0	3078
5	16034
4	6228
..	...
495	4750
496	3961
497	4742
498	4534
499	3861

## Lifetime Post reach by people who like your Page \

13	1917
1	6112
0	1640
5	7852
4	3200
..	...
495	2876
496	2104
497	2388
498	2452
499	2200

## Lifetime People who have liked your Page and engaged with your post \

13	183
1	1108
0	119
5	1016
4	396

```

..
495
496
497
498
499

```

```

comment  like  share  Total Interactions
13      5  137.0  10.0                152
1       5  130.0  29.0                164
0       4   79.0  17.0                100
5       1  152.0  33.0                186
4      19  325.0  49.0                393
..      ...
495     5   53.0  26.0                84
496     0   53.0  22.0                75
497     4   93.0  18.0                115
498     7   91.0  38.0                136
499     0   91.0  28.0                119

```

[500 rows x 19 columns]

```
[12]: merging.transpose()
```

```

[12]:
      0      1      2      3      4      5      6  \
Page total likes 139441 139441 139441 139441 139441 139441 139441
Category         2      2      3      2      2      2      3
Post Month       12     12     12     12     12     12     12
Post Weekday     4      3      3      2      2      1      1

      7      8      9  ...    41     42     43     44  \
Page total likes 139441 139441 139441 ... 138895 138353 138353 138353
Category         3      2      3  ...     1      1      1      1
Post Month       12     12     12  ...    12     12     12     12
Post Weekday     7      7      6  ...     6      5      5      4

      45     46     47     48     49     50
Page total likes 138353 138353 138353 138353 138353 138353
Category         1      1      1      1      1      2
Post Month       12     12     12     12     12     11
Post Weekday     4      3      3      2      2      1

```

[4 rows x 51 columns]

```
[14]: data.transpose()
```

[14]:

	0	1	2 \
Page total likes	139441	139441	139441
Type	Photo	Status	Photo
Category	2	2	3
Post Month	12	12	12
Post Weekday	4	3	3
Post Hour	3	10	3
Paid	0.0	0.0	0.0
Lifetime Post Total Reach	2752	10460	2413
Lifetime Post Total Impressions	5091	19057	4373
Lifetime Engaged Users	178	1457	177
Lifetime Post Consumers	109	1361	113
Lifetime Post Consumptions	159	1674	154
Lifetime Post Impressions by people who have li...	3078	11710	2812
Lifetime Post reach by people who like your Page	1640	6112	1503
Lifetime People who have liked your Page and en...	119	1108	132
comment	4	5	0
like	79.0	130.0	66.0
share	17.0	29.0	14.0
Total Interactions	100	164	80

	3	4	5 \
Page total likes	139441	139441	139441
Type	Photo	Photo	Status
Category	2	2	2
Post Month	12	12	12
Post Weekday	2	2	1
Post Hour	10	3	9
Paid	1.0	0.0	0.0
Lifetime Post Total Reach	50128	7244	10472
Lifetime Post Total Impressions	87991	13594	20849
Lifetime Engaged Users	2211	671	1191
Lifetime Post Consumers	790	410	1073
Lifetime Post Consumptions	1119	580	1389
Lifetime Post Impressions by people who have li...	61027	6228	16034
Lifetime Post reach by people who like your Page	32048	3200	7852
Lifetime People who have liked your Page and en...	1386	396	1016
comment	58	19	1
like	1572.0	325.0	152.0
share	147.0	49.0	33.0
Total Interactions	1777	393	186

	6	7	8 \
Page total likes	139441	139441	139441
Type	Photo	Photo	Status
Category	3	3	2
Post Month	12	12	12

Post Weekday	1	7	7	
Post Hour	3	9	3	
Paid	1.0	1.0	0.0	
Lifetime Post Total Reach	11692	13720	11844	
Lifetime Post Total Impressions	19479	24137	22538	
Lifetime Engaged Users	481	537	1530	
Lifetime Post Consumers	265	232	1407	
Lifetime Post Consumptions	364	305	1692	
Lifetime Post Impressions by people who have li...	15432	19728	15220	
Lifetime Post reach by people who like your Page	9328	11056	7912	
Lifetime People who have liked your Page and en...	379	422	1250	
comment	3	0	0	
like	249.0	325.0	161.0	
share	27.0	14.0	31.0	
Total Interactions	279	339	192	
Page total likes	9	...	490	491 \
Type	139441	...	85979	85979
Category	Photo	...	Photo	Photo
Post Month	3	...	3	3
Post Weekday	12	...	1	1
Post Hour	6	...	6	6
Paid	10	...	11	3
Lifetime Post Total Reach	0.0	...	0.0	1.0
Lifetime Post Total Impressions	4694	...	5280	6184
Lifetime Engaged Users	8668	...	8703	10228
Lifetime Post Consumers	280	...	951	956
Lifetime Post Consumptions	183	...	911	901
Lifetime Post Impressions by people who have li...	250	...	1237	1140
Lifetime Post reach by people who like your Page	4309	...	5757	6085
Lifetime People who have liked your Page and en...	2324	...	3300	3502
comment	199	...	431	437
like	3	...	1	1
share	113.0	...	79.0	105.0
Total Interactions	26.0	...	30.0	46.0
Page total likes	142	...	110	152
Page total likes	492	493	494	\
Type	85979	85093	85093	
Category	Link	Photo	Photo	
Post Month	1	3	3	
Post Weekday	1	1	1	
Post Hour	5	1	7	
Paid	11	2	10	
Lifetime Post Total Reach	0.0	0.0	0.0	
Lifetime Post Total Impressions	45920	8412	5400	
	5808	13960	9218	

Lifetime Engaged Users	753	1179	810
Lifetime Post Consumers	655	1111	756
Lifetime Post Consumptions	763	1632	1003
Lifetime Post Impressions by people who have li...	15766	8632	5654
Lifetime Post reach by people who like your Page	10720	5348	3230
Lifetime People who have liked your Page and en...	220	699	422
comment	0	17	10
like	128.0	185.0	125.0
share	9.0	55.0	41.0
Total Interactions	137	257	176
	495	496	497 \
Page total likes	85093	81370	81370
Type	Photo	Photo	Photo
Category	3	2	1
Post Month	1	1	1
Post Weekday	7	5	5
Post Hour	2	8	2
Paid	0.0	0.0	0.0
Lifetime Post Total Reach	4684	3480	3778
Lifetime Post Total Impressions	7536	6229	7216
Lifetime Engaged Users	733	537	625
Lifetime Post Consumers	708	508	572
Lifetime Post Consumptions	985	687	795
Lifetime Post Impressions by people who have li...	4750	3961	4742
Lifetime Post reach by people who like your Page	2876	2104	2388
Lifetime People who have liked your Page and en...	392	301	363
comment	5	0	4
like	53.0	53.0	93.0
share	26.0	22.0	18.0
Total Interactions	84	75	115
	498	499	
Page total likes	81370	81370	
Type	Photo	Photo	
Category	3	2	
Post Month	1	1	
Post Weekday	4	4	
Post Hour	11	4	
Paid	0.0	NaN	
Lifetime Post Total Reach	4156	4188	
Lifetime Post Total Impressions	7564	7292	
Lifetime Engaged Users	626	564	
Lifetime Post Consumers	574	524	
Lifetime Post Consumptions	832	743	
Lifetime Post Impressions by people who have li...	4534	3861	
Lifetime Post reach by people who like your Page	2452	2200	

Lifetime People who have liked your Page and en...	370	316
comment	7	0
like	91.0	91.0
share	38.0	28.0
Total Interactions	136	119

[19 rows x 500 columns]

```
[15]: data.transpose().shape
```

```
[15]: (19, 500)
```

```
[17]: pivot_table = pd.pivot_table(data,index=['Type', 'Category'],values='like')
print(pivot_table)
```

		like
Type	Category	
Link	1	75.650000
	2	32.000000
	3	68.000000
Photo	1	126.000000
	2	235.857143
	3	219.753333
Status	1	136.333333
	2	182.552632
	3	151.500000
Video	1	231.428571