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'''
Group B
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Roll No. - TI69
1. Perform the following operations using Python on the Facebook metrics data set
a. Create data subsets
b. Merge Data
c. Sort Data
d. Transposing Data
e. Shape and reshape Data
'''


import numpy as np # linear algebra
import pandas as pd # data processing, CSV file I/O (e.g. pd.read_csv)


#importing the dataset and displaying it
df = pd.read_csv("/content/dataset_Facebook.csv", sep=";")
df
```

	Page total likes	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach	Lifetime Post Total Impressions	Lifetime Engaged Users	Lifetime Post Consumers	Lifetime Post Consumptions	Lifetime Post Impressions by people who have liked your Page	Lifetime Post reach by people who like your Page
0	139441	Photo	2	12	4	3	0.0	2752	5091	178	109	159	3078	1640
1	139441	Status	2	12	3	10	0.0	10460	19057	1457	1361	1674	11710	6112
2	139441	Photo	3	12	3	3	0.0	2413	4373	177	113	154	2812	1503
3	139441	Photo	2	12	2	10	1.0	50128	87991	2211	790	1119	61027	32048
4	139441	Photo	2	12	2	3	0.0	7244	13594	671	410	580	6228	3200
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
495	85093	Photo	3	1	7	2	0.0	4684	7536	733	708	985	4750	2876
496	81370	Photo	2	1	5	8	0.0	3480	6229	537	508	687	3961	2104
497	81370	Photo	1	1	5	2	0.0	3778	7216	625	572	795	4742	2388
498	81370	Photo	3	1	4	11	0.0	4156	7564	626	574	832	4534	2452
499	81370	Photo	2	1	4	4	NaN	4188	7292	564	524	743	3861	2200

500 rows × 19 columns

```
#Describing the dataset
df.describe()
```

```
              Page total                          Post        Post
```

```
#Shape of data
df.shape
```

```
(500, 19)
```

```
       count      500.000000   500.000000   500.000000   500.000000   500.000000   499.000000
```

```
#Creating Data Subset-1
df1 =  df[['Page total likes','Category','Post Month','Post Weekday']].loc[0:15]
df1
```

	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

```
#Creating Data subset -2
df2 =  df[['Page total likes','Category','Post Month','Post Weekday']].loc[0:15]
df2
```

	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

```
#Creating Data subset -3
df3 =  df[['Page total likes','Category','Post Month','Post Weekday']].loc[0:15]
df3
```

	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

```
#Merging the data
merging_data = pd.concat([df1,df2,df3])
merging_data
```

	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
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

```
#Sorting data
sort_values = df.sort_values('Page total likes',ascending=False)
sort_values
```

Lifetime

```
#Transposing data
df.transpose()
```

	0	1	2	3	4	5	6	7	
Page total likes	139441	139441	139441	139441	139441	139441	139441	139441	139
Type	Photo	Status	Photo	Photo	Photo	Status	Photo	Photo	Sta
Category	2	2	3	2	2	2	3	3	
Post Month	12	12	12	12	12	12	12	12	
Post Weekday	4	3	3	2	2	1	1	7	
Post Hour	3	10	3	10	3	9	3	9	
Paid	0.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0	
Lifetime Post Total Reach	2752	10460	2413	50128	7244	10472	11692	13720	11
Lifetime Post Total Impressions	5091	19057	4373	87991	13594	20849	19479	24137	22
Lifetime Engaged Users	178	1457	177	2211	671	1191	481	537	1
Lifetime Post Consumers	109	1361	113	790	410	1073	265	232	1
Lifetime Post Consumptions	159	1674	154	1119	580	1389	364	305	1
Lifetime Post Impressions by people who have liked your Page	3078	11710	2812	61027	6228	16034	15432	19728	15
Lifetime Post reach by people who like your Page	1640	6112	1503	32048	3200	7852	9328	11056	7
Lifetime People who have liked your Page and engaged with your post	119	1108	132	1386	396	1016	379	422	1
comment	4	5	0	58	19	1	3	0	
like	79.0	130.0	66.0	1572.0	325.0	152.0	249.0	325.0	16
share	17.0	29.0	14.0	147.0	49.0	33.0	27.0	14.0	3
Total Interactions	100	164	80	1777	393	186	279	339	

19 rows × 500 columns

```
#Shaping
shaping = df.shape
shaping
```

```
(500, 19)
```

```
#Reshaping
pivot_table = pd.pivot_table(df,index=['Type','Category'],values='comment')
print(pivot_table)
```

		comment
Type	Category	
Link	1	2.900000
	2	2.000000
	3	2.000000
Photo	1	5.897297
	2	11.692308
	3	6.913333
Status	1	4.333333
	2	9.921053
	3	2.750000
Video	1	12.285714

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