```
#1. Perform the following operations using Python on the Facebook metrics data sets
#a. Create data subsets
#b. Merge Data
#c. Sort Data
#d. Transposing Data
#e. Shape and reshape Data
```

```
import pandas as pd
import numpy as np
df =pd.read_csv("/content/facebook.csv",sep=";")
df.head()
```

	Page total likes	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach	Lifetime Post Total Impressions	Lifeti Engag Use
0	139441	Photo	2	12	4	3	0.0	2752	5091	1
1	139441	Status	2	12	3	10	0.0	10460	19057	14
2	139441	Photo	3	12	3	3	0.0	2413	4373	1
3	139441	Photo	2	12	2	10	1.0	50128	87991	22
4	139441	Photo	2	12	2	3	0.0	7244	13594	6

```
df.shape
```

```
(500, 19)
```

```
df.describe()
```

	Page total likes	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach	Lifetime Post Total Impressions	Lif Er
count	500.000000	500.000000	500.000000	500.000000	500.000000	499.000000	500.00000	5.000000e+02	500.0
mean	123194.176000	1.880000	7.038000	4.150000	7.840000	0.278557	13903.36000	2.958595e+04	920.3
std	16272.813214	0.852675	3.307936	2.030701	4.368589	0.448739	22740.78789	7.680325e+04	985.0
min	81370.000000	1.000000	1.000000	1.000000	1.000000	0.000000	238.00000	5.700000e+02	9.0
25%	112676.000000	1.000000	4.000000	2.000000	3.000000	0.000000	3315.00000	5.694750e+03	393.7
50%	129600.000000	2.000000	7.000000	4.000000	9.000000	0.000000	5281.00000	9.051000e+03	625.5
75%	136393.000000	3.000000	10.000000	6.000000	11.000000	1.000000	13168.00000	2.208550e+04	1062.0
max	139441.000000	3.000000	12.000000	7.000000	23.000000	1.000000	180480.00000	1.110282e+06	11452.0

```
#subset creation
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

```
df2=df[['Page total likes', 'Category', 'Post Month', 'Post Weekday']].loc [16:30]
df2
```

	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

```
df3=df[['Page total likes', 'Category', 'Post Month', 'Post Weekday']].loc [31:50]
df3
```

	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

```
#merging subsets
m_df=pd.concat([df1,df2,df3])
m_df
```

	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

```
#transposing
tr_df=df.transpose()
tr_df
```

	0	1	2	3	4	5	6	7	8	9	...	490	491
Page total likes	139441	139441	139441	139441	139441	139441	139441	139441	139441	139441	...	85979	85979
Type	Photo	Status	Photo	Photo	Photo	Status	Photo	Photo	Status	Photo	...	Photo	Photo
Category	2	2	3	2	2	2	3	3	2	3	...	3	3
Post Month	12	12	12	12	12	12	12	12	12	12	...	1	1
Post Weekday	4	3	3	2	2	1	1	7	7	6	...	6	6
Post Hour	3	10	3	10	3	9	3	9	3	10	...	11	3
Paid	0.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	...	0.0	1.0
Lifetime Post Total Reach	2752	10460	2413	50128	7244	10472	11692	13720	11844	4694	...	5280	6184
Lifetime Post Total Impressions	5091	19057	4373	87991	13594	20849	19479	24137	22538	8668	...	8703	10228

```
#merging data
Me_df = pd.merge(df1, df2, on='Category')
Me_df
```

	Page total likes_x	Category	Post Month_x	Post Weekday_x	Page total likes_y	Post Month_y	Post Weekday_y
0	139441	2	12	4	138414	12	1
1	139441	2	12	4	138414	12	6
2	139441	2	12	4	138458	12	6
3	139441	2	12	4	138458	12	5
4	139441	2	12	4	138895	12	5
...	...	...	...	...	...	...	...
87	139441	3	12	6	138414	12	3
88	139441	3	12	6	138414	12	2
89	139441	3	12	6	138414	12	1
90	139441	3	12	6	138414	12	7
91	139441	3	12	6	138458	12	5

92 rows × 7 columns

```
#sorting values of data
s_df=df.sort_values("Page total likes",ascending=False)
s_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

```
#reshaping data with pivot table
reshape_table=pd.pivot_table(df, index= ['Type', 'Category'], values='comment')
reshape_table
```

Type	Category	comment
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

```
x=np.array(["Paid","Lifetime Post Total Reach","Lifetime Post Total Impressions"])
df5=x.reshape(3,1)
print(df5)
```

```
[['Paid']
 ['Lifetime Post Total Reach']
 ['Lifetime Post Total Impressions']]
```

```
#reshaping data with melt
df4=pd.melt(df)
df4
```

	variable	value
0	Page total likes	139441
1	Page total likes	139441
2	Page total likes	139441
3	Page total likes	139441
4	Page total likes	139441
...	...	...
9495	Total Interactions	84
9496	Total Interactions	75
9497	Total Interactions	115
9498	Total Interactions	136
9499	Total Interactions	119

9500 rows × 2 columns

✓ 0s completed at 4:50 PM