Perform the following operation using Python on the Facebook metrics data sets:

1. Create data subsets
2. Merge Data
3. Sort Data
4. Transporting Data
5. Shape and Reshape Data

```
#Importing Required Libraries

import pandas as pd
import numpy as np
```

```
#Reading dataset

facebook = pd.read_csv('/content/dataset_Facebook.csv', ";")
facebook
```

```
/usr/local/lib/python3.7/dist-packages/IPython/core/interactiveshell
  exec(code_obj, self.user_global_ns, self.user_ns)
```

	Page total likes	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach
2	139441	Photo	3	12	3	3	0.0	2413

Creating Subset

```
#Creating photo subset

photos = facebook[facebook["Type"] == "Photo"]
print("No. of Records available for Photos : ", len(photos))
```

```
No. of Records available for Photos :  426
```

```
#creating video subset

videos = facebook[facebook["Type"] == "Video"]
videos
print("No. of Records available for Vidoes : ", len(videos))
```

```
No. of Records available for Vidoes :  7
```

```
#creating links subset

links = facebook[facebook["Type"] == "Link"]
links
print("No. of Records available for Links : ", len(links))
```

```
No. of Records available for Links :  22
```

```
#Creating status subset
```

```
status = facebook[facebook["Type"] == "Status"]
status
print("No. of Records available for Status : ", len(status))
```

```
No. of Records available for Status :  45
```

Merge Dataset

```
#Merging the dataset using concat() function

merged_dataset = pd.concat([links, videos])
merged_dataset
```

	Page total likes	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach
22	138414	Link	1	12	7	10	0.0	3454
41	138895	Link	1	12	6	3	1.0	18480
43	138353	Link	1	12	5	3	1.0	2645
45	138353	Link	1	12	4	3	1.0	7968
47	138353	Link	1	12	3	2	0.0	1925
49	138353	Link	1	12	2	2	0.0	1536
86	137177	Link	1	11	4	3	0.0	21176
136	136393	Link	1	10	5	10	0.0	4664
140	136013	Link	1	10	4	3	0.0	68992
149	135713	Link	1	10	6	11	1.0	3616
344	117764	Link	1	5	1	2	0.0	12540
372	113028	Link	1	4	5	7	1.0	35360

```
print("After merging no of records available: ", len(merged_dataset))
```

```
After merging no of records available:  29
```

425	102112	Link	3	3	1	3	0.0	6876

Sort Data

```
#Sorting dataset using values of Total interactions

photos.sort_values('Total Interactions')
```

	Page total likes	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach
111	136736	Photo	1	10	6	8	0.0	1261
76	137893	Photo	1	11	3	2	0.0	1228
417	104070	Photo	1	3	3	10	0.0	1874
100	137020	Photo	1	10	4	9	1.0	1357
441	98195	Photo	1	3	5	4	1.0	1845
...	...	...	...	...	...	...	...	...
349	117764	Photo	3	5	5	13	0.0	81856
460	92507	Photo	3	2	1	13	0.0	55520
168	135428	Photo	1	9	3	10	0.0	41984
379	111620	Photo	3	4	1	14	1.0	105632
244	130791	Photo	2	7	3	5	1.0	180480

426 rows × 19 columns

Transpose Data

```
#Transposing dataset

result = videos.transpose()
result
```

	29	55	
Page total likes	138895	138329	1378
Type	Video	Video	Vid
Category	1	1	
Post Month	12	11	
Post Weekday	4	6	
Post Hour	11	2	
Paid	1.0	1.0	
Lifetime Post Total Reach	36208	16416	1007
Lifetime Post Total Impressions	61262	31950	2204
Lifetime Engaged Users	1141	459	21
Lifetime Post Consumers	1068	411	17
Lifetime Post Consumptions	1728	539	23
Lifetime Post Impressions by people who have liked your Page	30131	21436	596
Lifetime Post reach by people who like your Page	14112	9568	188
Lifetime People who have liked your Page and engaged with your post	559	363	8
comment	18	2	

Shape and Reshape Data

```
#Displaying Shape of every dataset

print("Shape of Videos dataset: ",videos.shape)
print("Shape of Photos datset: ",photos.shape)
print("Shape of Links dataset:",links.shape)
print("Shape of Status dataset:",status.shape)
```

```
Shape of Videos dataset:  (7, 19)
Shape of Photos datset:  (426, 19)
```

```
Shape of Links dataset: (22, 19)
Shape of Status dataset: (45, 19)
```

```
videos
```

	Page total likes	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach
29	138895	Video	1	12	4	11	1.0	36208
55	138329	Video	1	11	6	2	1.0	16416
71	137893	Video	1	11	5	3	1.0	100768
74	137893	Video	1	11	3	11	0.0	13544
183	134879	Video	1	9	2	10	0.0	30624
243	130791	Video	1	7	3	11	1.0	21872
277	126424	Video	1	6	2	13	0.0	139008

```
#Melting videos subset by selecting two columns

melted = pd.melt(videos, id_vars = ["Page total likes"], value_vars=["Post
melted
```

	Page total likes	Attribute	Value
0	138895	Post Month	12
1	138329	Post Month	11
2	137893	Post Month	11
3	137893	Post Month	11
4	134879	Post Month	9
5	130791	Post Month	7
6	126424	Post Month	6
7	138895	Post Weekday	4
8	138329	Post Weekday	6

```
#Transforming back to it's original form

melted.pivot_table(index="Page total likes", columns="Attribute", values="
```

Attribute	Post Month	Post Weekday
Page total likes		
126424	6	2
130791	7	3
134879	9	2
137893	11	5
138329	11	6
138895	12	4

```
#Creating another subset for melting having unique elements

melt_input_subset = videos[['Page total likes', 'Lifetime Post Total Reacl
melt_input_subset
```

	Page total likes	Lifetime Post Total Reach	Lifetime Post Total Impressions	Lifetime Engaged Users
29	138895	36208	61262	1141
55	138329	16416	31950	459
71	137893	100768	220447	2101
74	137893	13544	30235	517

```
print("Before melting shape of dataset: ",melt_input_subset.shape)
print("Before melting no of records available: ", len(melt_input_subset))
```

```
Before melting shape of dataset:  (7, 6)
Before melting no of records available:  7
```

```
#Melting the subset

melted_videos = pd.melt(melt_input_subset, id_vars = ["Page total likes"],
melted_videos
```

	Page total likes	Attribute	Value
0	138895	Lifetime Post Total Reach	36208
1	138329	Lifetime Post Total Reach	16416
2	137893	Lifetime Post Total Reach	100768
3	137893	Lifetime Post Total Reach	13544
4	134879	Lifetime Post Total Reach	30624
5	130791	Lifetime Post Total Reach	21872
6	126424	Lifetime Post Total Reach	139008
7	138895	Lifetime Post Total Impressions	61262
8	138329	Lifetime Post Total Impressions	31950
9	137893	Lifetime Post Total Impressions	220447
10	137893	Lifetime Post Total Impressions	30235
11	134879	Lifetime Post Total Impressions	56950
12	130791	Lifetime Post Total Impressions	40413
13	126424	Lifetime Post Total Impressions	277100
14	138895	Lifetime Engaged Users	1141
15	138329	Lifetime Engaged Users	459
16	137893	Lifetime Engaged Users	2101

```
print("After melting shape of dataset: ",melted_videos.shape)
print("After melting no of records available: ", len(melted_videos))
```

```
After melting shape of dataset:  (35, 3)
After melting no of records available:  35
```

```
#Transforming it to back uisng pivot function

original_form = melted_videos.pivot_table(index="Page total likes", columı
original_form
```

Attribute Page total likes	Lifetime Engaged Users	Lifetime Post Consumers	Lifetime Post Consumptions	Lif
126424	1779	1643	2356	
130791	3872	3822	7327	
134879	2080	1956	3253	

```
# print("After pivoting shape of dataset: ",original_form.shape)
# print("After pivoting no of records available: ", len(original_form))
```

```
#unmelted = melted.reset_index().pivot(index="Page total likes", columns =

melted_videos.sort_values('Page total likes')
```

	Page total likes	Attribute	Value
34	126424	Lifetime Post Consumptions	2356
20	126424	Lifetime Engaged Users	1779
13	126424	Lifetime Post Total Impressions	277100
6	126424	Lifetime Post Total Reach	139008
27	126424	Lifetime Post Consumers	1643
19	130791	Lifetime Engaged Users	3872
12	130791	Lifetime Post Total Impressions	40413
5	130791	Lifetime Post Total Reach	21872
26	130791	Lifetime Post Consumers	3822
33	130791	Lifetime Post Consumptions	7327
11	134879	Lifetime Post Total Impressions	56950
25	134879	Lifetime Post Consumers	1956
4	134879	Lifetime Post Total Reach	30624
32	134879	Lifetime Post Consumptions	3253
18	134879	Lifetime Engaged Users	2080
30	137893	Lifetime Post Consumptions	2331
23	137893	Lifetime Post Consumers	1735
31	137893	Lifetime Post Consumptions	667
24	137893	Lifetime Post Consumers	458
17	137893	Lifetime Engaged Users	517
10	137893	Lifetime Post Total Impressions	30235
9	137893	Lifetime Post Total Impressions	220447
3	137893	Lifetime Post Total Reach	13544
2	137893	Lifetime Post Total Reach	100768
16	137893	Lifetime Engaged Users	2101
15	138329	Lifetime Engaged Users	459