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Problem Statement : Perform, the following operations using Python on the facebook metrics datasets

```
A) Create Data Subsets
B) Merge Data
C) Sort Data
D) Transposing Data
E) Shape & Reshape Data
```

Importing Modules

In [1]:
```
import pandas as pd
import numpy as np
```

Import Dataset

In [2]:
```
data = pd.read_csv("./dataset_Facebook.csv",";")
```

Dataset Intro

In [3]:
```
data.head()
```

Out[3]:

	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

A) Subset Generation

In [4]:
```
subset1 = data.loc[:,"Type"]
subset1
```

Out[4]:
```
0       Photo
1      Status
2       Photo
3       Photo
4       Photo
        ...
495     Photo
496     Photo
497     Photo
498     Photo
499     Photo
Name: Type, Length: 500, dtype: object
```

In [5]:
```
subset2 = data.loc[0:10,["Type","comment","like", "share"]]
subset2
```

Out[5]:

	Type	comment	like	share
0	Photo	4	79.0	17.0
1	Status	5	130.0	29.0
2	Photo	0	66.0	14.0
3	Photo	58	1572.0	147.0
4	Photo	19	325.0	49.0
5	Status	1	152.0	33.0
6	Photo	3	249.0	27.0
7	Photo	0	325.0	14.0
8	Status	0	161.0	31.0
9	Photo	3	113.0	26.0
10	Status	0	233.0	19.0

In [6]:
```
subset3 = data.iloc[0:10,[1,3,4,5]]
subset3
```

Out[6]:

	Type	Post Month	Post Weekday	Post Hour
0	Photo	12	4	3
1	Status	12	3	10
2	Photo	12	3	3
3	Photo	12	2	10
4	Photo	12	2	3
5	Status	12	1	9
6	Photo	12	1	3
7	Photo	12	7	9
8	Status	12	7	3
9	Photo	12	6	10

B) Merged Data

In [7]:
```
merged_set = subset2.merge(subset3,how="inner",on="Type")
merged_set
```

Out[7]:

	Type	comment	like	share	Post Month	Post Weekday	Post Hour
0	Photo	4	79.0	17.0	12	4	3
1	Photo	4	79.0	17.0	12	3	3
2	Photo	4	79.0	17.0	12	2	10
3	Photo	4	79.0	17.0	12	2	3
4	Photo	4	79.0	17.0	12	1	3
...	...	...	...	...	...	...	...
56	Status	0	161.0	31.0	12	1	9
57	Status	0	161.0	31.0	12	7	3
58	Status	0	233.0	19.0	12	3	10
59	Status	0	233.0	19.0	12	1	9
60	Status	0	233.0	19.0	12	7	3

61 rows × 7 columns

C) Sort Values

In [8]:
```
merged_set.sort_values(by=["like"])
```

Out[8]:

	Type	comment	like	share	Post Month	Post Weekday	Post Hour
9	Photo	0	66.0	14.0	12	2	10
13	Photo	0	66.0	14.0	12	6	10
12	Photo	0	66.0	14.0	12	7	9
11	Photo	0	66.0	14.0	12	1	3
10	Photo	0	66.0	14.0	12	2	3
...	...	...	...	...	...	...	...
18	Photo	58	1572.0	147.0	12	1	3
17	Photo	58	1572.0	147.0	12	2	3
16	Photo	58	1572.0	147.0	12	2	10
15	Photo	58	1572.0	147.0	12	3	3
14	Photo	58	1572.0	147.0	12	4	3

61 rows × 7 columns

In [9]:
```
subset5 = data.iloc[0:10,[1,3,4,5]]
subset5
```

Out[9]:

	Type	Post Month	Post Weekday	Post Hour
0	Photo	12	4	3
1	Status	12	3	10
2	Photo	12	3	3
3	Photo	12	2	10
4	Photo	12	2	3
5	Status	12	1	9
6	Photo	12	1	3
7	Photo	12	7	9
8	Status	12	7	3
9	Photo	12	6	10

D) Transpose Data

In [10]:
```
subset5.transpose()
```

Out[10]:

	0	1	2	3	4	5	6	7	8	9
Type	Photo	Status	Photo	Photo	Photo	Status	Photo	Photo	Status	Photo
Post Month	12	12	12	12	12	12	12	12	12	12
Post Weekday	4	3	3	2	2	1	1	7	7	6
Post Hour	3	10	3	10	3	9	3	9	3	10

E) Shape and Reshape

In [11]:
```
subset5.shape
```

Out[11]:
```
(10, 4)
```

In [12]:
```
subset6 = data.iloc[0,:]
subset6
```

Out[12]:
```
Page total likes                                                      139441
Type                                                                   Photo
Category                                                                   2
Post Month                                                                12
Post Weekday                                                               4
Post Hour                                                                  3
Paid                                                                     0.0
Lifetime Post Total Reach                                               2752
Lifetime Post Total Impressions                                         5091
Lifetime Engaged Users                                                   178
Lifetime Post Consumers                                                  109
Lifetime Post Consumptions                                               159
Lifetime Post Impressions by people who have liked your Page            3078
Lifetime Post reach by people who like your Page                        1640
Lifetime People who have liked your Page and engaged with your post      119
comment                                                                    4
like                                                                    79.0
share                                                                   17.0
Total Interactions                                                       100
Name: 0, dtype: object
```

In [15]:
```
melted_df = pd.melt(subset5,id_vars=["Type"], value_vars=["Post Month","Post Weekday", "Post Hour"])
```

In [16]:
```
melted_df
```

Out[16]:

	Type	variable	value
0	Photo	Post Month	12
1	Status	Post Month	12
2	Photo	Post Month	12
3	Photo	Post Month	12
4	Photo	Post Month	12
5	Status	Post Month	12
6	Photo	Post Month	12
7	Photo	Post Month	12
8	Status	Post Month	12
9	Photo	Post Month	12
10	Photo	Post Weekday	4
11	Status	Post Weekday	3
12	Photo	Post Weekday	3
13	Photo	Post Weekday	2
14	Photo	Post Weekday	2
15	Status	Post Weekday	1
16	Photo	Post Weekday	1
17	Photo	Post Weekday	7
18	Status	Post Weekday	7
19	Photo	Post Weekday	6
20	Photo	Post Hour	3
21	Status	Post Hour	10
22	Photo	Post Hour	3
23	Photo	Post Hour	10
24	Photo	Post Hour	3
25	Status	Post Hour	9
26	Photo	Post Hour	3
27	Photo	Post Hour	9
28	Status	Post Hour	3
29	Photo	Post Hour	10

In [ ]: