

```
import pandas as pd
import numpy as np
```

```
data = pd.read_csv('dataset_Facebook.csv', sep=';')
```

```
data.head()
```

	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						

	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

	Lifetime Engaged Users	Lifetime Post Consumers \
0	178	109
1	1457	1361
2	177	113
3	2211	790
4	671	410

	Lifetime Post Consumptions \
0	159
1	1674
2	154
3	1119
4	580

	Lifetime Post Impressions by people who have liked your Page \
0	3078
1	11710
2	2812
3	61027
4	6228

	Lifetime Post reach by people who like your Page \
0	1640

1	6112
2	1503
3	32048
4	3200

Lifetime People who have liked your Page and engaged with your post	
\	
0	119
1	1108
2	132
3	1386
4	396

	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

```
photo_posts = data[data['Type'] == 'Photo']
status_posts = data[data['Type'] == 'Status']

merged_data = pd.concat([photo_posts, status_posts],
ignore_index=True)

sorted_data = merged_data.sort_values(by='Page total
likes',ascending=False)

transposed_data = sorted_data.transpose()

melted_data = pd.melt(data,
                        id_vars=['Type', 'Category', 'Post Month', 'Post
Weekday'],
                        value_vars=['like', 'share', 'comment'],
                        var_name='Interaction Type',
                        value_name='Interaction Count')

wide_data = melted_data.pivot_table(index=['Type', 'Category', 'Post
Month', 'Post Weekday'],
                                    columns='Interaction Type',
                                    values='Interaction Count',
                                    aggfunc='sum').reset_index()

print("a. Photo Posts:\n", photo_posts.head(5))
print("b. Merged Data:\n", merged_data.head(5))
```

```
print("c. Sorted Data:\n", sorted_data.head(5))
print("d. Transposed Data:\n", transposed_data.head(5))
print("e. Melted Data:\n", melted_data.head(5))
print("f. Wide Format Data:\n", wide_data.head(5))
```

a. Photo Posts:

	Page total likes	Type	Category	Post Month	Post Weekday	Post Hour \
0	139441	Photo	2	12	4	3
2	139441	Photo	3	12	3	3
3	139441	Photo	2	12	2	10
4	139441	Photo	2	12	2	3
6	139441	Photo	3	12	1	3

	Paid	Lifetime Post Total	Reach	Lifetime Post Total Impressions \
0	0.0		2752	5091
2	0.0		2413	4373
3	1.0		50128	87991
4	0.0		7244	13594
6	1.0		11692	19479

	Lifetime Engaged Users	Lifetime Post Consumers \
0	178	109
2	177	113
3	2211	790
4	671	410
6	481	265

	Lifetime Post Consumptions \
0	159
2	154
3	1119
4	580
6	364

	Lifetime Post Impressions by people who have liked your Page \
0	3078
2	2812
3	61027
4	6228
6	15432

	Lifetime Post reach by people who like your Page \
0	1640
2	1503

3	32048
4	3200
6	9328

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

\	
0	119
2	132
3	1386
4	396
6	379

	comment	like	share	Total Interactions
0	4	79.0	17.0	100
2	0	66.0	14.0	80
3	58	1572.0	147.0	1777
4	19	325.0	49.0	393
6	3	249.0	27.0	279

#### b. Merged Data:

Hour	Page total likes	Type	Category	Post Month	Post Weekday	Post
\						
0	139441	Photo	2	12	4	
3						
1	139441	Photo	3	12	3	
3						
2	139441	Photo	2	12	2	
10						
3	139441	Photo	2	12	2	
3						
4	139441	Photo	3	12	1	
3						

	Paid	Lifetime Post Total	Reach	Lifetime Post Total Impressions	\
0	0.0		2752	5091	
1	0.0		2413	4373	
2	1.0		50128	87991	
3	0.0		7244	13594	
4	1.0		11692	19479	

	Lifetime Engaged Users	Lifetime Post Consumers	\
0	178	109	
1	177	113	
2	2211	790	
3	671	410	
4	481	265	

	Lifetime Post Consumptions \
0	159
1	154
2	1119
3	580
4	364

	Lifetime Post Impressions by people who have liked your Page \
0	3078
1	2812
2	61027
3	6228
4	15432

	Lifetime Post reach by people who like your Page \
0	1640
1	1503
2	32048
3	3200
4	9328

	Lifetime People who have liked your Page and engaged with your post \
0	119
1	132
2	1386
3	396
4	379

	comment	like	share	Total Interactions
0	4	79.0	17.0	100
1	0	66.0	14.0	80
2	58	1572.0	147.0	1777
3	19	325.0	49.0	393
4	3	249.0	27.0	279

c. Sorted Data:

	Page total likes	Type	Category	Post Month	Post Weekday
Post Hour \					
0	139441	Photo	2	12	4
3					
8	139441	Photo	2	12	5
10					
428	139441	Status	2	12	7
3					

429	139441	Status	2	12	5
10					
1	139441	Photo	3	12	3
3					

	Paid	Lifetime Post Total	Reach	Lifetime Post Total	Impressions
\					
0	0.0		2752		5091
8	0.0		2847		5133
428	0.0		11844		22538
429	0.0		21744		42334
1	0.0		2413		4373

	Lifetime Engaged Users	Lifetime Post Consumers	\
0	178	109	
8	193	115	
428	1530	1407	
429	4258	4100	
1	177	113	

	Lifetime Post Consumptions	\
0	159	
8	133	
428	1692	
429	4540	
1	154	

	Lifetime Post Impressions by people who have liked your Page	\
0	3078	
8	3779	
428	15220	
429	37849	
1	2812	

	Lifetime Post reach by people who like your Page	\
0	1640	
8	2072	
428	7912	
429	18952	
1	1503	

	Lifetime People who have liked your Page and engaged with your post	\
0	119	

8	152
428	1250
429	3798
1	132

	comment	like	share	Total Interactions
0	4	79.0	17.0	100
8	0	90.0	14.0	104
428	0	161.0	31.0	192
429	0	233.0	19.0	252
1	0	66.0	14.0	80

d. Transposed Data:

	0	8	428	429	1	426
9 \						
Page total likes	139441	139441	139441	139441	139441	139441
139441						
Type	Photo	Photo	Status	Status	Photo	Status
Photo						
Category	2	2	2	2	3	2
2						
Post Month	12	12	12	12	12	12
12						
Post Weekday	4	5	7	5	3	3
5						

	427	7	2	...	416	417	418
419 \							
Page total likes	139441	139441	139441	...	85979	85979	85979
85093							
Type	Status	Photo	Photo	...	Photo	Photo	Photo
Photo							
Category	2	2	2	...	3	3	3
3							
Post Month	12	12	12	...	1	1	1
1							
Post Weekday	1	5	2	...	7	6	6
1							

	420	421	423	425	422	424
Page total likes	85093	85093	81370	81370	81370	81370
Type	Photo	Photo	Photo	Photo	Photo	Photo
Category	3	3	1	2	2	3
Post Month	1	1	1	1	1	1
Post Weekday	7	7	5	4	5	4

[5 rows x 471 columns]

e. Melted Data:

	Type	Category	Post Month	Post Weekday	Interaction Type \
0	Photo	2	12	4	like
1	Status	2	12	3	like
2	Photo	3	12	3	like
3	Photo	2	12	2	like
4	Photo	2	12	2	like

Interaction Count

0	79.0
1	130.0
2	66.0
3	1572.0
4	325.0

f. Wide Format Data:

Interaction Type	Type	Category	Post Month	Post Weekday	comment
like \					
0	Link	1	1	2	0.0
12.0					
1	Link	1	1	4	0.0
5.0					
2	Link	1	1	5	0.0
128.0					
3	Link	1	1	6	1.0
101.0					
4	Link	1	2	3	4.0
114.0					

Interaction Type share

0	2.0
1	2.0
2	9.0
3	5.0
4	13.0