

In [27]:

```
import pandas as pd
```

In [28]:

```
df=pd.read_csv("C:/sameer/dataset_Facebook.csv",sep=';')
```

In [29]:

```
df.head()
```

Out[29]:

	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	
0	139441	Photo		2	12	4	3	0.0	2752	5091	178	109	159	3078
1	139441	Status		2	12	3	10	0.0	10460	19057	1457	1361	1674	11710
2	139441	Photo		3	12	3	3	0.0	2413	4373	177	113	154	2812
3	139441	Photo		2	12	2	10	1.0	50128	87991	2211	790	1119	61027
4	139441	Photo		2	12	2	3	0.0	7244	13594	671	410	580	6228

In [30]:

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 500 entries, 0 to 499
Data columns (total 19 columns):
#   Column                                                                 Non-Null Count  Dtype
---  -
0   Page total likes                                                       500 non-null   int64
1   Type                                                                    500 non-null   object
2   Category                                                                500 non-null   int64
3   Post Month                                                             500 non-null   int64
4   Post Weekday                                                            500 non-null   int64
5   Post Hour                                                               500 non-null   int64
6   Paid                                                                    499 non-null   float64
7   Lifetime Post Total Reach                                              500 non-null   int64
8   Lifetime Post Total Impressions                                       500 non-null   int64
9   Lifetime Engaged Users                                                500 non-null   int64
10  Lifetime Post Consumers                                                500 non-null   int64
11  Lifetime Post Consumptions                                             500 non-null   int64
12  Lifetime Post Impressions by people who have liked your Page         500 non-null   int64
13  Lifetime Post reach by people who like your Page                     500 non-null   int64
14  Lifetime People who have liked your Page and engaged with your post  500 non-null   int64
15  comment                                                                500 non-null   int64
16  like                                                                    499 non-null   float64
17  share                                                                  496 non-null   float64
18  Total Interactions                                                     500 non-null   int64
dtypes: float64(3), int64(15), object(1)
memory usage: 74.3+ KB
```

In [38]:

```
df_subset1 = df_subset1=df[['like','share']]
print(df_subset1)
```

	like	share
0	79.0	17.0
1	130.0	29.0
2	66.0	14.0
3	1572.0	147.0
4	325.0	49.0
..	...	...
495	53.0	26.0
496	53.0	22.0
497	93.0	18.0
498	91.0	38.0
499	91.0	28.0

[500 rows x 2 columns]

In [39]:

```
df[['Type','like']]
```

Out[39]:

	Type	like
0	Photo	79.0
1	Status	130.0
2	Photo	66.0
3	Photo	1572.0
4	Photo	325.0
...	...	...
495	Photo	53.0
496	Photo	53.0
497	Photo	93.0
498	Photo	91.0
499	Photo	91.0

500 rows x 2 columns

In [40]:

```
df_subset2=df[df['like']>100]
print(df_subset2)
```

	Page total likes	Type	Category	Post Month	Post Weekday	Post Hour	\
1	139441	Status	2	12	3	10	
3	139441	Photo	2	12	2	10	
4	139441	Photo	2	12	2	3	
5	139441	Status	2	12	1	9	
6	139441	Photo	3	12	1	3	
..	...	...	...	...	...	...	
488	85979	Photo	3	1	7	10	
491	85979	Photo	3	1	6	3	
492	85979	Link	1	1	5	11	
493	85093	Photo	3	1	1	2	
494	85093	Photo	3	1	7	10	

	Paid	Lifetime Post Total	Reach	Lifetime Post Total Impressions	\
1	0.0		10460	19057	
3	1.0		50128	87991	
4	0.0		7244	13594	
5	0.0		10472	20849	
6	1.0		11692	19479	
..	...		...	...	
488	0.0		9700	17442	
491	1.0		6184	10228	
492	0.0		45920	5808	
493	0.0		8412	13960	
494	0.0		5400	9218	

	Lifetime Engaged Users	Lifetime Post Consumers	\
1	1457	1361	
3	2211	790	
4	671	410	
5	1191	1073	

6	481	265
..	...	...
488	1407	1271
491	956	901
492	753	655
493	1179	1111
494	810	756

	Lifetime Post Consumptions \	
1	1674	
3	1119	
4	580	
5	1389	
6	364	
..	...	
488	2007	
491	1140	
492	763	
493	1632	
494	1003	

	Lifetime Post Impressions by people who have liked your Page \	
1	11710	
3	61027	
4	6228	
5	16034	
6	15432	
..	...	
488	8872	
491	6085	
492	15766	
493	8632	
494	5654	

	Lifetime Post reach by people who like your Page \	
1	6112	
3	32048	
4	3200	
5	7852	
6	9328	
..	...	
488	4876	
491	3502	
492	10720	
493	5348	
494	3230	

	Lifetime People who have liked your Page and engaged with your post \	
1	1108	
3	1386	
4	396	
5	1016	
6	379	
..	...	
488	660	
491	437	
492	220	
493	699	
494	422	

	comment	like	share	Total Interactions	
1	5	130.0	29.0	164	
3	58	1572.0	147.0	1777	
4	19	325.0	49.0	393	
5	1	152.0	33.0	186	
6	3	249.0	27.0	279	
..	...	...	...	...	
488	21	277.0	80.0	378	
491	1	105.0	46.0	152	
492	0	128.0	9.0	137	
493	17	185.0	55.0	257	
494	10	125.0	41.0	176	

[252 rows x 19 columns]

In [41]:

```
df.loc[[1,3,7]]
```

Out[41]:

	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 Impressions by people who have liked your Page
1	139441	Status		2	12	3	10	0.0	10460	19057	1457	1361	1674	11710
3	139441	Photo		2	12	2	10	1.0	50128	87991	2211	790	1119	61027
7	139441	Photo		3	12	7	9	1.0	13720	24137	537	232	305	19728

In [42]:

```
df.iloc[1:3,0:2]
```

Out[42]:

	Page total likes	Type
1	139441	Status
2	139441	Photo

In [43]:

```
df.loc[5:8]
```

Out[43]:

	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 Impressions by people who have liked your Page
5	139441	Status		2	12	1	9	0.0	10472	20849	1191	1073	1389	16034
6	139441	Photo		3	12	1	3	1.0	11692	19479	481	265	364	15432
7	139441	Photo		3	12	7	9	1.0	13720	24137	537	232	305	19728
8	139441	Status		2	12	7	3	0.0	11844	22538	1530	1407	1692	15220

In [44]:

```
df.loc[1:7,['like','share']]
```

Out[44]:

	like	share
1	130.0	29.0
2	66.0	14.0
3	1572.0	147.0
4	325.0	49.0
5	152.0	33.0
6	249.0	27.0
7	325.0	14.0

In [45]:

```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 500 entries, 0 to 499
Data columns (total 19 columns):
#   Column                                                                 Non-Null Count  Dtype
---  -
0   Page total likes                                                    500 non-null    int64
1   Type                                                                500 non-null    object
2   Category                                                            500 non-null    int64
3   Post Month                                                          500 non-null    int64
4   Post Weekday                                                        500 non-null    int64
5   Post Hour                                                           500 non-null    int64
6   Paid                                                                499 non-null    float64
7   Lifetime Post Total Reach                                           500 non-null    int64
8   Lifetime Post Total Impressions                                     500 non-null    int64
9   Lifetime Engaged Users                                              500 non-null    int64
10  Lifetime Post Consumers                                              500 non-null    int64
11  Lifetime Post Consumptions                                           500 non-null    int64
12  Lifetime Post Impressions by people who have liked your Page       500 non-null    int64
13  Lifetime Post reach by people who like your Page                  500 non-null    int64
14  Lifetime People who have liked your Page and engaged with your post 500 non-null    int64
15  comment                                                             500 non-null    int64
16  like                                                                499 non-null    float64
17  share                                                               496 non-null    float64
18  Total Interactions                                                  500 non-null    int64
dtypes: float64(3), int64(15), object(1)
memory usage: 74.3+ KB
```

In [46]:

```
subset1 = df.loc[1:5,['Category','like','share','Type']]
subset1
```

Out[46]:

	Category	like	share	Type
1	2	130.0	29.0	Status
2	3	66.0	14.0	Photo
3	2	1572.0	147.0	Photo
4	2	325.0	49.0	Photo
5	2	152.0	33.0	Status

In [47]:

```
subset2 = df.loc[11:13,['Category','like','share','Type']]
subset2
```

Out[47]:

	Category	like	share	Type
11	2	88.0	18.0	Photo
12	2	90.0	14.0	Photo
13	2	137.0	10.0	Photo

In [48]:

```
print(subset1,'\n\n',subset2)
```

```
Category    like  share  Type
1          2  130.0  29.0  Status
2          3   66.0  14.0   Photo
3          2 1572.0 147.0   Photo
4          2  325.0  49.0   Photo
5          2  152.0  33.0  Status

Category    like  share  Type
11          2   88.0  18.0  Photo
12          2   90.0  14.0  Photo
13          2  137.0  10.0  Photo
```

```
merge_set = pd.concat([subset1, subset2], axis=0)
print(merge_set)
```

```
merge_set.shape
```

```
df.sort_values(by='like',ascending=True)
```

	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	
21	138414	Photo		1	12	7	10	0.0	1384	2467	15	15	20	2196
417	104070	Photo		1	3	3	10	0.0	1874	2474	25	25	31	1483
100	137020	Photo		1	10	4	9	1.0	1357	2453	37	37	55	2154
76	137893	Photo		1	11	3	2	0.0	1228	2392	17	17	19	2392
441	98195	Photo		1	3	5	4	1.0	1845	2670	9	9	9	1614
...	...	...		...	...	...	...	...	...	...	...	...	...	...
168	135428	Photo		1	9	3	10	0.0	41984	68290	3370	2420	4074	34802
349	117764	Photo		3	5	5	13	0.0	81856	124753	3000	1637	2718	52477
379	111620	Photo		3	4	1	14	1.0	105632	147918	3984	2254	3391	48575
244	130791	Photo		2	7	3	5	1.0	180480	319133	8072	4010	6242	108752
111	136736	Photo		1	10	6	8	0.0	1261	2158	37	37	49	1911
500 rows x 19 columns														

In [52]:

```
df.sort_values(by = 'like',ascending=False, kind='mergesort')
```

Out[52]:

	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	
244	130791	Photo		2	7	3	5	1.0	180480	319133	8072	4010	6242	108752
379	111620	Photo		3	4	1	14	1.0	105632	147918	3984	2254	3391	48575
349	117764	Photo		3	5	5	13	0.0	81856	124753	3000	1637	2718	52477
168	135428	Photo		1	9	3	10	0.0	41984	68290	3370	2420	4074	34802
3	139441	Photo		2	12	2	10	1.0	50128	87991	2211	790	1119	61027
...	...	...		...	...	...	...	...	...	...	...	...	...	...
76	137893	Photo		1	11	3	2	0.0	1228	2392	17	17	19	2392
100	137020	Photo		1	10	4	9	1.0	1357	2453	37	37	55	2154
417	104070	Photo		1	3	3	10	0.0	1874	2474	25	25	31	1483
441	98195	Photo		1	3	5	4	1.0	1845	2670	9	9	9	1614
111	136736	Photo		1	10	6	8	0.0	1261	2158	37	37	49	1911

500 rows × 19 columns

In [54]:

```
result=df.transpose()  
print(result)
```

	0	1	2	\
Page total likes	139441	139441	139441	
Type	Photo	Status	Photo	
Category	2	2	3	
Post Month	12	12	12	
Post Weekday	4	3	3	
Post Hour	3	10	3	
Paid	0	0	0	
Lifetime Post Total Reach	2752	10460	2413	
Lifetime Post Total Impressions	5091	19057	4373	
Lifetime Engaged Users	178	1457	177	
Lifetime Post Consumers	109	1361	113	
Lifetime Post Consumptions	159	1674	154	
Lifetime Post Impressions by people who have li...	3078	11710	2812	
Lifetime Post reach by people who like your Page	1640	6112	1503	
Lifetime People who have liked your Page and en...	119	1108	132	
comment	4	5	0	
like	79	130	66	
share	17	29	14	
Total Interactions	100	164	80	
	3	4	5	\
Page total likes	139441	139441	139441	
Type	Photo	Photo	Status	
Category	2	2	2	
Post Month	12	12	12	
Post Weekday	2	2	1	
Post Hour	10	3	9	
Paid	1	0	0	
Lifetime Post Total Reach	50128	7244	10472	
Lifetime Post Total Impressions	87991	13594	20849	
Lifetime Engaged Users	2211	671	1191	
Lifetime Post Consumers	790	410	1073	
Lifetime Post Consumptions	1119	580	1389	
Lifetime Post Impressions by people who have li...	61027	6228	16034	
Lifetime Post reach by people who like your Page	32048	3200	7852	
Lifetime People who have liked your Page and en...	1386	396	1016	
comment	58	19	1	
like	1572	325	152	
share	147	49	33	
Total Interactions	1777	393	186	

	6	7	8 \
Page total likes	139441	139441	139441
Type	Photo	Photo	Status
Category	3	3	2
Post Month	12	12	12
Post Weekday	1	7	7
Post Hour	3	9	3
Paid	1	1	0
Lifetime Post Total Reach	11692	13720	11844
Lifetime Post Total Impressions	19479	24137	22538
Lifetime Engaged Users	481	537	1530
Lifetime Post Consumers	265	232	1407
Lifetime Post Consumptions	364	305	1692
Lifetime Post Impressions by people who have li...	15432	19728	15220
Lifetime Post reach by people who like your Page	9328	11056	7912
Lifetime People who have liked your Page and en...	379	422	1250
comment	3	0	0
like	249	325	161
share	27	14	31
Total Interactions	279	339	192

	9	...	490	491 \
Page total likes	139441	...	85979	85979
Type	Photo	...	Photo	Photo
Category	3	...	3	3
Post Month	12	...	1	1
Post Weekday	6	...	6	6
Post Hour	10	...	11	3
Paid	0	...	0	1
Lifetime Post Total Reach	4694	...	5280	6184
Lifetime Post Total Impressions	8668	...	8703	10228
Lifetime Engaged Users	280	...	951	956
Lifetime Post Consumers	183	...	911	901
Lifetime Post Consumptions	250	...	1237	1140
Lifetime Post Impressions by people who have li...	4309	...	5757	6085
Lifetime Post reach by people who like your Page	2324	...	3300	3502
Lifetime People who have liked your Page and en...	199	...	431	437
comment	3	...	1	1
like	113	...	79	105
share	26	...	30	46
Total Interactions	142	...	110	152

	492	493	494 \
Page total likes	85979	85093	85093
Type	Link	Photo	Photo
Category	1	3	3
Post Month	1	1	1
Post Weekday	5	1	7
Post Hour	11	2	10
Paid	0	0	0
Lifetime Post Total Reach	45920	8412	5400
Lifetime Post Total Impressions	5808	13960	9218
Lifetime Engaged Users	753	1179	810
Lifetime Post Consumers	655	1111	756
Lifetime Post Consumptions	763	1632	1003
Lifetime Post Impressions by people who have li...	15766	8632	5654
Lifetime Post reach by people who like your Page	10720	5348	3230
Lifetime People who have liked your Page and en...	220	699	422
comment	0	17	10
like	128	185	125
share	9	55	41
Total Interactions	137	257	176

	495	496	497 \
Page total likes	85093	81370	81370
Type	Photo	Photo	Photo
Category	3	2	1
Post Month	1	1	1
Post Weekday	7	5	5
Post Hour	2	8	2
Paid	0	0	0
Lifetime Post Total Reach	4684	3480	3778
Lifetime Post Total Impressions	7536	6229	7216
Lifetime Engaged Users	733	537	625
Lifetime Post Consumers	708	508	572
Lifetime Post Consumptions	985	687	795
Lifetime Post Impressions by people who have li...	4750	3961	4742
Lifetime Post reach by people who like your Page	2876	2104	2388
Lifetime People who have liked your Page and en...	392	301	363
comment	5	0	4
like	53	53	93
share	26	22	18



Total Interactions	84	75	115
	498	499	
Page total likes	81370	81370	
Type	Photo	Photo	
Category	3	2	
Post Month	1	1	
Post Weekday	4	4	
Post Hour	11	4	
Paid	0	NaN	
Lifetime Post Total Reach	4156	4188	
Lifetime Post Total Impressions	7564	7292	
Lifetime Engaged Users	626	564	
Lifetime Post Consumers	574	524	
Lifetime Post Consumptions	832	743	
Lifetime Post Impressions by people who have li...	4534	3861	
Lifetime Post reach by people who like your Page	2452	2200	
Lifetime People who have liked your Page and en...	370	316	
comment	7	0	
like	91	91	
share	38	28	
Total Interactions	136	119	

[19 rows x 500 columns]

In [55]:

```
df.shape
```

Out[55]:

(500, 19)

In [56]:

```
result.shape
```

Out[56]:

(19, 500)

In [60]:

```
selective_df=pd.DataFrame(df.iloc[0:5],columns=['like','share','Category','Type'])
print(selective_df.head(5))
```

	like	share	Category	Type
0	79.0	17.0	2	Photo
1	130.0	29.0	2	Status
2	66.0	14.0	3	Photo
3	1572.0	147.0	2	Photo
4	325.0	49.0	2	Photo

In [61]:

```
sub1 = df.loc[0:3,['Category', 'Post Month','Post Hour', 'Paid']]
sub1.melt(id_vars=['Category'])
```

Out[61]:

	Category	variable	value
0	2	Post Month	12.0
1	2	Post Month	12.0
2	3	Post Month	12.0
3	2	Post Month	12.0
4	2	Post Hour	3.0
5	2	Post Hour	10.0
6	3	Post Hour	3.0
7	2	Post Hour	10.0
8	2	Paid	0.0
9	2	Paid	0.0
10	3	Paid	0.0
11	2	Paid	1.0

In [62]:

```
pivote_table=pd.pivot_table(selective_df,index=['Category'])
print(pivote_table)
```

	like	share
Category		
2	526.5	60.5
3	66.0	14.0

In [68]:

```
pivote_table.shape
```

Out[68]:

(2, 3)

In [65]:

```
pivote_table.reset_index(inplace=True)
print(pivote_table)
```

	Category	like	share
0	2	526.5	60.5
1	3	66.0	14.0

In [69]:

```
pivote_table.melt(id_vars=['like','share'])
```

Out[69]:

	like	share	variable	value
0	526.5	60.5	Category	2
1	66.0	14.0	Category	3

In [70]:

```
home_expendature = { "Month":  ['Jan'      , 'Jan'      , 'Jan'      , 'feb'      , 'feb'      , 'march'    , 'march'    ],
                      "category": ['transport', 'grocery', 'household', 'entertainment', 'transport', 'grocery', 'household'],
                      "amount"   : [74,      235,      175,      100,      115,      240,      225]
                    }

home_expendaturedf=pd.DataFrame(home_expendature)
print(home_expendaturedf)
```

	Month	category	amount
0	Jan	transport	74
1	Jan	grocery	235
2	Jan	household	175
3	feb	entertainment	100
4	feb	transport	115
5	march	grocery	240
6	march	household	225

In [71]:

```
pd.pivot_table(home_expendaturedf,index=['category','Month'])
```

Out[71]:

		amount
category	Month	
entertainment	feb	100
	Jan	235
grocery	march	240
	Jan	175
household	march	225
	Jan	74
transport	feb	115

In [ ]: