In [4]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
%matplotlib inline
import seaborn as sns
```

In [7]:
```
df = pd.read_csv('dataset_Facebook.csv', sep = ';')
df
```

Out[7]:

	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	C
0	139441	Photo	2	12	4	3	0.0	2752	5091	178	109	
1	139441	Status	2	12	3	10	0.0	10460	19057	1457	1361	
2	139441	Photo	3	12	3	3	0.0	2413	4373	177	113	
3	139441	Photo	2	12	2	10	1.0	50128	87991	2211	790	
4	139441	Photo	2	12	2	3	0.0	7244	13594	671	410	
...	...	...	...	...	...	...	...	...	...	...	...	
495	85093	Photo	3	1	7	2	0.0	4684	7536	733	708	
496	81370	Photo	2	1	5	8	0.0	3480	6229	537	508	
497	81370	Photo	1	1	5	2	0.0	3778	7216	625	572	
498	81370	Photo	3	1	4	11	0.0	4156	7564	626	574	
499	81370	Photo	2	1	4	4	NaN	4188	7292	564	524	

500 rows × 19 columns

In [18]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 500 entries, 0 to 499
Data columns (total 19 columns):
 #   Column                                                  Non-Null Count  Dty
pe
---  ------                                                  --------------  ---
--
 0   Page total likes                                        500 non-null    int
64
 1   Type                                                    500 non-null    obj
ect
 2   Category                                                500 non-null    int
64
 3   Post Month                                              500 non-null    int
64
 4   Post Weekday                                            500 non-null    int
64
 5   Post Hour                                               500 non-null    int
64
 6   Paid                                                    499 non-null    flo
at64
 7   Lifetime Post Total Reach                               500 non-null    int
64
 8   Lifetime Post Total Impressions                         500 non-null    int
64
 9   Lifetime Engaged Users                                  500 non-null    int
64
 10  Lifetime Post Consumers                                 500 non-null    int
64
 11  Lifetime Post Consumptions                              500 non-null    int
64
 12  Lifetime Post Impressions by people who have liked your Page  500 non-null  int
64
 13  Lifetime Post reach by people who like your Page        500 non-null    int
64
 14  Lifetime People who have liked your Page and engaged with your post  500 non-null  int
64
 15  comment                                                 500 non-null    int
64
 16  like                                                    499 non-null    flo
at64
 17  share                                                   496 non-null    flo
at64
 18  Total Interactions                                      500 non-null    int
64
dtypes: float64(3), int64(15), object(1)
memory usage: 74.3+ KB
```

In [20]:
```
df.describe()
```

Out[20]:

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

In [8]:
```
subset1 = df[10:40]
subset1
```

Out[8]:

	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	L Co
10	139441	Status	2	12	5	10	0.0	21744	42334	4258	4100	
11	139441	Photo	2	12	5	10	0.0	3112	5590	208	127	
12	139441	Photo	2	12	5	10	0.0	2847	5133	193	115	
13	139441	Photo	2	12	5	3	0.0	2549	4896	249	134	
14	138414	Photo	2	12	4	5	1.0	22784	39941	887	337	
15	138414	Status	2	12	3	10	0.0	10060	19680	1264	1209	
16	138414	Photo	3	12	3	3	0.0	1722	2981	163	123	
17	138414	Photo	1	12	2	12	1.0	53264	111785	1706	1103	
18	138414	Status	3	12	2	3	0.0	3930	7509	130	86	
19	138414	Photo	3	12	1	11	0.0	1591	2825	121	88	
20	138414	Photo	2	12	1	3	0.0	2848	5066	200	142	
21	138414	Photo	1	12	7	10	0.0	1384	2467	15	15	
22	138414	Link	1	12	7	10	0.0	3454	6853	118	104	
23	138414	Photo	3	12	7	3	0.0	2723	4888	176	118	
24	138414	Status	2	12	6	10	0.0	8488	15294	1341	1270	
25	138458	Status	2	12	6	3	0.0	8284	15104	1521	1462	
26	138458	Status	2	12	5	11	0.0	19552	34143	2806	2531	
27	138458	Photo	3	12	5	3	0.0	2478	4306	212	124	
28	138895	Photo	2	12	5	3	0.0	9560	18264	973	559	
29	138895	Video	1	12	4	11	1.0	36208	61262	1141	1068	
30	138895	Photo	2	12	4	2	0.0	4940	9390	385	306	
31	138895	Photo	2	12	3	10	0.0	1683	2929	192	171	
32	138895	Photo	3	12	3	3	0.0	5280	9578	368	237	
33	138895	Photo	3	12	2	9	0.0	3002	5318	268	185	
34	138895	Photo	1	12	2	3	0.0	3766	7149	298	260	
35	138895	Photo	2	12	1	11	0.0	4512	7808	423	284	
36	138895	Photo	3	12	1	3	0.0	2690	4628	252	168	
37	138895	Photo	1	12	7	10	1.0	19800	28663	479	424	
38	138895	Status	2	12	7	9	0.0	17576	33058	5352	5202	
39	138895	Photo	1	12	7	3	0.0	3290	6085	306	284	

In [9]:
```
subset2= df[df['Category']==3]
```

```
subset2
```

Out[9]:

	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	C
2	139441	Photo	3	12	3	3	0.0	2413	4373	177	113	
6	139441	Photo	3	12	1	3	1.0	11692	19479	481	265	
7	139441	Photo	3	12	7	9	1.0	13720	24137	537	232	
9	139441	Photo	3	12	6	10	0.0	4694	8668	280	183	
16	138414	Photo	3	12	3	3	0.0	1722	2981	163	123	
...	...	...	...	...	...	...	...	...	...	...	...	
491	85979	Photo	3	1	6	3	1.0	6184	10228	956	901	
493	85093	Photo	3	1	1	2	0.0	8412	13960	1179	1111	
494	85093	Photo	3	1	7	10	0.0	5400	9218	810	756	
495	85093	Photo	3	1	7	2	0.0	4684	7536	733	708	
498	81370	Photo	3	1	4	11	0.0	4156	7564	626	574	

155 rows × 19 columns

In [13]:
```
subset3 = df.iloc[4:34]
```

In [14]:
```
subset3
```

Out[14]:

	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	L Co
4	139441	Photo	2	12	2	3	0.0	7244	13594	671	410	
5	139441	Status	2	12	1	9	0.0	10472	20849	1191	1073	
6	139441	Photo	3	12	1	3	1.0	11692	19479	481	265	
7	139441	Photo	3	12	7	9	1.0	13720	24137	537	232	
8	139441	Status	2	12	7	3	0.0	11844	22538	1530	1407	
9	139441	Photo	3	12	6	10	0.0	4694	8668	280	183	
10	139441	Status	2	12	5	10	0.0	21744	42334	4258	4100	
11	139441	Photo	2	12	5	10	0.0	3112	5590	208	127	
12	139441	Photo	2	12	5	10	0.0	2847	5133	193	115	
13	139441	Photo	2	12	5	3	0.0	2549	4896	249	134	
14	138414	Photo	2	12	4	5	1.0	22784	39941	887	337	
15	138414	Status	2	12	3	10	0.0	10060	19680	1264	1209	
16	138414	Photo	3	12	3	3	0.0	1722	2981	163	123	
17	138414	Photo	1	12	2	12	1.0	53264	111785	1706	1103	
18	138414	Status	3	12	2	3	0.0	3930	7509	130	86	
19	138414	Photo	3	12	1	11	0.0	1591	2825	121	88	
20	138414	Photo	2	12	1	3	0.0	2848	5066	200	142	
21	138414	Photo	1	12	7	10	0.0	1384	2467	15	15	
22	138414	Link	1	12	7	10	0.0	3454	6853	118	104	
23	138414	Photo	3	12	7	3	0.0	2723	4888	176	118	
24	138414	Status	2	12	6	10	0.0	8488	15294	1341	1270	
25	138458	Status	2	12	6	3	0.0	8284	15104	1521	1462	
26	138458	Status	2	12	5	11	0.0	19552	34143	2806	2531	
27	138458	Photo	3	12	5	3	0.0	2478	4306	212	124	
28	138895	Photo	2	12	5	3	0.0	9560	18264	973	559	
29	138895	Video	1	12	4	11	1.0	36208	61262	1141	1068	
30	138895	Photo	2	12	4	2	0.0	4940	9390	385	306	
31	138895	Photo	2	12	3	10	0.0	1683	2929	192	171	
32	138895	Photo	3	12	3	3	0.0	5280	9578	368	237	
33	138895	Photo	3	12	2	9	0.0	3002	5318	268	185	

In [15]:
```
subset4 = df.loc[[3,4,5,21,52,53],['Post Month','Post Weekday','Post Hour']]
```

In [16]:
```
subset4
```

Out[16]:

	Post Month	Post Weekday	Post Hour
3	12	2	10
4	12	2	3
5	12	1	9
21	12	7	10
52	11	7	9
53	11	7	3

In [21]:
```
df1 = df.iloc[:,1:10]
df2 = df.iloc[:,9:20]
```

In [22]:
```
df1
```

Out[22]:

	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach	Lifetime Post Total Impressions	Lifetime Engaged Users
0	Photo	2	12	4	3	0.0	2752	5091	178
1	Status	2	12	3	10	0.0	10460	19057	1457
2	Photo	3	12	3	3	0.0	2413	4373	177
3	Photo	2	12	2	10	1.0	50128	87991	2211
4	Photo	2	12	2	3	0.0	7244	13594	671
...	...	...	...	...	...	...	...	...	...
495	Photo	3	1	7	2	0.0	4684	7536	733
496	Photo	2	1	5	8	0.0	3480	6229	537
497	Photo	1	1	5	2	0.0	3778	7216	625
498	Photo	3	1	4	11	0.0	4156	7564	626
499	Photo	2	1	4	4	NaN	4188	7292	564

500 rows × 9 columns

In [23]:
```
df2
```

Out[23]:

	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	Lifetime People who have liked your Page and engaged with your post	comment	like	share	T Interacti
0	178	109	159	3078	1640	119	4	79.0	17.0	
1	1457	1361	1674	11710	6112	1108	5	130.0	29.0	
2	177	113	154	2812	1503	132	0	66.0	14.0	
3	2211	790	1119	61027	32048	1386	58	1572.0	147.0	1
4	671	410	580	6228	3200	396	19	325.0	49.0	
...	...	...	...	...	...	...	...	...	...	
495	733	708	985	4750	2876	392	5	53.0	26.0	
496	537	508	687	3961	2104	301	0	53.0	22.0	
497	625	572	795	4742	2388	363	4	93.0	18.0	
498	626	574	832	4534	2452	370	7	91.0	38.0	
499	564	524	743	3861	2200	316	0	91.0	28.0	

500 rows × 10 columns

In [25]:
```
pd.concat([df1,df2])
```

Out[25]:

	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach	Lifetime Post Total Impressions	Lifetime Engaged Users	Lifetime Post Consumers	Lifetime Consumpt
0	Photo	2.0	12.0	4.0	3.0	0.0	2752.0	5091.0	178	NaN	
1	Status	2.0	12.0	3.0	10.0	0.0	10460.0	19057.0	1457	NaN	
2	Photo	3.0	12.0	3.0	3.0	0.0	2413.0	4373.0	177	NaN	
3	Photo	2.0	12.0	2.0	10.0	1.0	50128.0	87991.0	2211	NaN	
4	Photo	2.0	12.0	2.0	3.0	0.0	7244.0	13594.0	671	NaN	
...	...	...	...	...	...	...	...	...	...	...	
495	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	733	708.0	9
496	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	537	508.0	6
497	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	625	572.0	7
498	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	626	574.0	8
499	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	564	524.0	7

1000 rows × 18 columns

In [26]:
```
pd.concat([df1,df2],axis= 1)
```

Out[26]:

	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach	Lifetime Post Total Impressions	Lifetime Engaged Users	Lifetime Engaged Users	Lifetime Post Consumers
0	Photo	2	12	4	3	0.0	2752	5091	178	178	109
1	Status	2	12	3	10	0.0	10460	19057	1457	1457	1361
2	Photo	3	12	3	3	0.0	2413	4373	177	177	113
3	Photo	2	12	2	10	1.0	50128	87991	2211	2211	790
4	Photo	2	12	2	3	0.0	7244	13594	671	671	410
...	...	...	...	...	...	...	...	...	...	...	...
495	Photo	3	1	7	2	0.0	4684	7536	733	733	708
496	Photo	2	1	5	8	0.0	3480	6229	537	537	508
497	Photo	1	1	5	2	0.0	3778	7216	625	625	572
498	Photo	3	1	4	11	0.0	4156	7564	626	626	574
499	Photo	2	1	4	4	NaN	4188	7292	564	564	524

500 rows × 19 columns

In [28]:
```
pd.concat([df1,df2], ignore_index=True)
```

Out[28]:

	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach	Lifetime Post Total Impressions	Lifetime Engaged Users	Lifetime Post Consumers	Lifetime Consumpt
0	Photo	2.0	12.0	4.0	3.0	0.0	2752.0	5091.0	178	NaN	
1	Status	2.0	12.0	3.0	10.0	0.0	10460.0	19057.0	1457	NaN	
2	Photo	3.0	12.0	3.0	3.0	0.0	2413.0	4373.0	177	NaN	
3	Photo	2.0	12.0	2.0	10.0	1.0	50128.0	87991.0	2211	NaN	
4	Photo	2.0	12.0	2.0	3.0	0.0	7244.0	13594.0	671	NaN	
...	...	...	...	...	...	...	...	...	...	...	
995	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	733	708.0	9
996	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	537	508.0	6
997	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	625	572.0	7
998	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	626	574.0	8
999	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	564	524.0	7

1000 rows × 18 columns

In [29]:
```
pd.merge(df1,df2)
```

Out[29]:

	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach	Lifetime Post Total Impressions	Lifetime Engaged Users	Lifetime Post Consumers	Lifetime Consumpt
0	Photo	2	12	4	3	0.0	2752	5091	178	109	
1	Status	2	12	3	10	0.0	10460	19057	1457	1361	
2	Photo	3	12	3	3	0.0	2413	4373	177	113	
3	Photo	2	12	2	10	1.0	50128	87991	2211	790	
4	Photo	2	12	2	3	0.0	7244	13594	671	410	
...	...	...	...	...	...	...	...	...	...	...	
701	Photo	3	1	1	2	0.0	4908	7491	957	937	
702	Photo	3	1	7	2	0.0	4800	7754	975	938	
703	Photo	3	1	6	3	1.0	6184	10228	956	901	
704	Photo	3	1	7	10	0.0	5400	9218	810	756	
705	Photo	3	1	7	2	0.0	4684	7536	733	708	

706 rows × 18 columns

In [36]:
```
pd.merge(df1,df2,on='Lifetime Engaged Users')
```

Out[36]:

	Type	Category	Post Month	Post Weekday	Post Hour	Paid	Lifetime Post Total Reach	Lifetime Post Total Impressions	Lifetime Engaged Users	Lifetime Post Consumers	Lifetime Consumpt
0	Photo	2	12	4	3	0.0	2752	5091	178	109	
1	Status	2	12	3	10	0.0	10460	19057	1457	1361	
2	Photo	3	12	3	3	0.0	2413	4373	177	113	
3	Photo	2	12	2	10	1.0	50128	87991	2211	790	
4	Photo	2	12	2	3	0.0	7244	13594	671	410	
...	...	...	...	...	...	...	...	...	...	...	
701	Photo	3	1	1	2	0.0	4908	7491	957	937	
702	Photo	3	1	7	2	0.0	4800	7754	975	938	
703	Photo	3	1	6	3	1.0	6184	10228	956	901	
704	Photo	3	1	7	10	0.0	5400	9218	810	756	
705	Photo	3	1	7	2	0.0	4684	7536	733	708	

706 rows × 18 columns

In [37]:
```
sd =df.sort_values('Lifetime Post Total Reach')
```

In [39]:
```
sd
```

Out[39]:

	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	C
422	102112	Photo	1	3	1	19	0.0	238	570	143	142	
426	100732	Photo	1	3	7	18	0.0	391	746	131	130	
432	100732	Photo	1	3	6	17	0.0	452	726	186	184	
120	136393	Photo	1	10	7	9	0.0	584	1029	273	271	
123	136393	Photo	1	10	7	7	0.0	617	1071	229	223	
...	...	...	...	...	...	...	...	...	...	...	...	
380	111620	Photo	1	4	7	14	0.0	128064	251269	1539	1408	
277	126424	Video	1	6	2	13	0.0	139008	277100	1779	1643	
463	92186	Photo	3	2	7	2	1.0	153536	497910	1713	1633	
464	92079	Photo	1	2	6	13	0.0	158208	453213	2482	2319	
244	130791	Photo	2	7	3	5	1.0	180480	319133	8072	4010	

500 rows × 19 columns

In [40]:
```
transpose_df = df.T
transpose_df
```

Out[40]:

	0	1	2	3	4	5	6	7	8	9	...	490
Page total likes	139441	139441	139441	139441	139441	139441	139441	139441	139441	139441	...	85979
Type	Photo	Status	Photo	Photo	Photo	Status	Photo	Photo	Status	Photo	...	Photo
Category	2	2	3	2	2	2	3	3	2	3	...	3
Post Month	12	12	12	12	12	12	12	12	12	12	...	1
Post Weekday	4	3	3	2	2	1	1	7	7	6	...	6
Post Hour	3	10	3	10	3	9	3	9	3	10	...	11
Paid	0.0	0.0	0.0	1.0	0.0	0.0	1.0	1.0	0.0	0.0	...	0.0
Lifetime Post Total Reach	2752	10460	2413	50128	7244	10472	11692	13720	11844	4694	...	5280
Lifetime Post Total Impressions	5091	19057	4373	87991	13594	20849	19479	24137	22538	8668	...	8703
Lifetime Engaged Users	178	1457	177	2211	671	1191	481	537	1530	280	...	951
Lifetime Post Consumers	109	1361	113	790	410	1073	265	232	1407	183	...	911
Lifetime Post Consumptions	159	1674	154	1119	580	1389	364	305	1692	250	...	1237
Lifetime Post Impressions by people who have liked your Page	3078	11710	2812	61027	6228	16034	15432	19728	15220	4309	...	5757
Lifetime Post reach by people who like your Page	1640	6112	1503	32048	3200	7852	9328	11056	7912	2324	...	3300
Lifetime People who have liked your Page and engaged with your post	119	1108	132	1386	396	1016	379	422	1250	199	...	431
comment	4	5	0	58	19	1	3	0	0	3	...	1
like	79.0	130.0	66.0	1572.0	325.0	152.0	249.0	325.0	161.0	113.0	...	79.0
share	17.0	29.0	14.0	147.0	49.0	33.0	27.0	14.0	31.0	26.0	...	30.0
Total Interactions	100	164	80	1777	393	186	279	339	192	142	...	110

19 rows × 500 columns

In [41]:
```
ds=np.array([1,2,3,4,5,6])
ds.shape
```

Out[41]:
```
(6,)
```

In [42]:
```
ds1 = ds.reshape(3,2)
ds1
```

Out[42]:
```
array([[1, 2],
       [3, 4],
       [5, 6]])
```

In [45]:
```
ds1.shape
```

Out[45]:
```
(3, 2)
```

In [46]:
```
df.shape
```

Out[46]:
```
(500, 19)
```

In [ ]:
```

```