

## DAY 5

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importing libraries

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

importing dataset

```
In [3]: data=pd.read_csv(r"C:\Users\user\Downloads\5_Instagram data - 5_Instagram data.csv")
data
```

Out[3]:

Comments	Shares	Likes	Profile Visits	Follows	Caption	Hashtag
9	5	162	35	2	Here are some of the most important data visua...	#finance #money #business #investing #investme
7	14	224	48	10	Here are some of the best data science project...	#healthcare #health #covid #data #datascience
11	1	131	62	12	Learn how to train a machine learning model an...	#data #datascience #dataanalysis #dataanalytic
10	7	213	23	8	Here s how you can write a Python program to d...	#python #pythonprogramming #pythonprojects #py
5	4	123	8	0	Plotting annotations while visualizing your da...	#datavisualization #datascience #data #dataana
...	...	...	...	...	...	...
2	38	373	73	80	Here are some of the best data science certifi...	#datascience #datasciencejobs #datasciencetrai
4	1	148	20	18	Clustering is a machine learning technique use...	#machinelearning #machinelearningalgorithms #d
0	1	92	34	10	Clustering music genres is a task of grouping ...	#machinelearning #machinelearningalgorithms #d
2	75	549	148	214	Here are some of the best data science certifi...	#datascience #datasciencejobs #datasciencetrai

Comments	Shares	Likes	Profile Visits	Follows	Caption	Hashtag
5	26	443	611	228	175 Python Projects with Source Code solved an...	#python #pythonprogramming #pythonprojects #py

importing numeric values from data set

```
In [4]: df=data[["Impressions","From Home","From Hashtags","From Explore","From Other","Saves","Comments","Shares","Likes","Profile Visits","Follows"]]
df
```

Out[4]:

	Impressions	From Home	From Hashtags	From Explore	From Other	Saves	Comments	Shares	Likes	Profile Visits	Follows
0	3920	2586	1028	619	56	98	9	5	162	35	
1	5394	2727	1838	1174	78	194	7	14	224	48	
2	4021	2085	1188	0	533	41	11	1	131	62	
3	4528	2700	621	932	73	172	10	7	213	23	
4	2518	1704	255	279	37	96	5	4	123	8	
...	...	...	...	...	...	...	...	...	...	...	...
114	13700	5185	3041	5352	77	573	2	38	373	73	
115	5731	1923	1368	2266	65	135	4	1	148	20	
116	4139	1133	1538	1367	33	36	0	1	92	34	
117	32695	11815	3147	17414	170	1095	2	75	549	148	
118	36919	13473	4176	16444	2547	653	5	26	443	611	

119 rows × 11 columns

## a. Find mean,median,mode and describe

```
In [5]: print(df.mean())
```

```
Impressions      5703.991597
From Home        2475.789916
From Hashtags    1887.512605
From Explore     1078.100840
From Other       171.092437
Saves            153.310924
Comments         6.663866
Shares           9.361345
Likes            173.781513
Profile Visits   50.621849
Follows          20.756303
dtype: float64
```

```
In [6]: print(df.mode())
```

	Impressions	From Home	From Hashtags	From Explore	From Other	Saves	\
0	5394.0	1975.0	116	45.0	34.0	40.0	
1	NaN	NaN	201	84.0	NaN	135.0	
2	NaN	NaN	278	NaN	NaN	144.0	
3	NaN	NaN	362	NaN	NaN	NaN	
4	NaN	NaN	411	NaN	NaN	NaN	
5	NaN	NaN	583	NaN	NaN	NaN	
6	NaN	NaN	655	NaN	NaN	NaN	
7	NaN	NaN	707	NaN	NaN	NaN	
8	NaN	NaN	771	NaN	NaN	NaN	
9	NaN	NaN	794	NaN	NaN	NaN	
10	NaN	NaN	1248	NaN	NaN	NaN	
11	NaN	NaN	1260	NaN	NaN	NaN	
12	NaN	NaN	1278	NaN	NaN	NaN	
13	NaN	NaN	1693	NaN	NaN	NaN	
14	NaN	NaN	1938	NaN	NaN	NaN	
15	NaN	NaN	2351	NaN	NaN	NaN	
16	NaN	NaN	2975	NaN	NaN	NaN	
17	NaN	NaN	3450	NaN	NaN	NaN	
18	NaN	NaN	3551	NaN	NaN	NaN	

  

	Comments	Shares	Likes	Profile Visits	Follows
0	6.0	3.0	114.0	19.0	2.0
1	NaN	NaN	151.0	21.0	NaN
2	NaN	NaN	NaN	NaN	NaN
3	NaN	NaN	NaN	NaN	NaN
4	NaN	NaN	NaN	NaN	NaN
5	NaN	NaN	NaN	NaN	NaN
6	NaN	NaN	NaN	NaN	NaN
7	NaN	NaN	NaN	NaN	NaN
8	NaN	NaN	NaN	NaN	NaN
9	NaN	NaN	NaN	NaN	NaN
10	NaN	NaN	NaN	NaN	NaN
11	NaN	NaN	NaN	NaN	NaN
12	NaN	NaN	NaN	NaN	NaN
13	NaN	NaN	NaN	NaN	NaN
14	NaN	NaN	NaN	NaN	NaN
15	NaN	NaN	NaN	NaN	NaN
16	NaN	NaN	NaN	NaN	NaN
17	NaN	NaN	NaN	NaN	NaN
18	NaN	NaN	NaN	NaN	NaN

In [7]: `print(df.median())`

```

Impressions      4289.0
From Home        2207.0
From Hashtags    1278.0
From Explore      326.0
From Other        74.0
Saves            109.0
Comments          6.0
Shares            6.0
Likes            151.0
Profile Visits    23.0
Follows           8.0
dtype: float64

```

In [8]: `print(df.describe())`

```

count      Impressions      From Home  From Hashtags  From Explore  From Other  \
count      119.000000      119.000000      119.000000      119.000000      119.000000
mean      5703.991597      2475.789916      1887.512605      1078.100840      171.092437
std       4843.780105      1489.386348      1884.361443      2613.026132      289.431031
min       1941.000000      1133.000000      116.000000         0.000000         9.000000
25%       3467.000000      1945.000000       726.000000      157.500000      38.000000
50%       4289.000000      2207.000000      1278.000000      326.000000      74.000000
75%       6138.000000      2602.500000      2363.500000      689.500000     196.000000
max       36919.000000     13473.000000     11817.000000     17414.000000     2547.000000

count      Saves      Comments      Shares      Likes  Profile Visits  \
count      119.000000      119.000000      119.000000      119.000000      119.000000
mean      153.310924      6.663866      9.361345     173.781513      50.621849
std       156.317731      3.544576     10.089205     82.378947      87.088402
min        22.000000      0.000000      0.000000     72.000000       4.000000
25%        65.000000      4.000000      3.000000     121.500000     15.000000
50%       109.000000      6.000000      6.000000     151.000000     23.000000
75%       169.000000      8.000000     13.500000     204.000000     42.000000
max       1095.000000     19.000000     75.000000     549.000000     611.000000

count      Follows
count      119.000000
mean       20.756303
std        40.921580
min         0.000000
25%         4.000000
50%         8.000000
75%        18.000000
max        260.000000

```

**b.) Find sum,cumsum,count,min and max values**

In [9]: `print(df.sum())`

```

Impressions      678775
From Home        294619
From Hashtags    224614
From Explore     128294
From Other       20360
Saves            18244
Comments         793
Shares           1114
Likes            20680
Profile Visits   6024
Follows          2470
dtype: int64

```

In [10]: `print(df.cumsum())`

```

      Impressions  From Home  From Hashtags  From Explore  From Other  Saves  \
0           3920       2586           1028           619           56      98
1           9314       5313           2866           1793           134     292
2          13335       7398           4054           1793           667     333
3          17863      10098           4675           2725           740     505
4          20381      11802           4930           3004           777     601
..          ...          ...          ...          ...          ...          ...
114         599291     266275          214385          90803          17545    16325
115         605022     268198          215753          93069          17610    16460
116         609161     269331          217291          94436          17643    16496
117         641856     281146          220438          111850          17813    17591
118         678775     294619          224614          128294          20360    18244

      Comments  Shares  Likes  Profile Visits  Follows
0             9       5    162             35         2
1            16      19    386             83        12
2            27      20    517            145        24
3            37      27    730            168        32
4            42      31    853            176        32
..          ...      ...      ...          ...          ...
114          782     1011   19448            5211     2000
115          786     1012   19596            5231     2018
116          786     1013   19688            5265     2028
117          788     1088   20237            5413     2242
118          793     1114   20680            6024     2470

```

[119 rows x 11 columns]

```
In [11]: print(df.count())
```

```
Impressions      119
From Home         119
From Hashtags     119
From Explore      119
From Other        119
Saves             119
Comments          119
Shares            119
Likes             119
Profile Visits    119
Follows           119
dtype: int64
```

```
In [12]: print(df.min())
```

```
Impressions      1941
From Home         1133
From Hashtags     116
From Explore       0
From Other         9
Saves             22
Comments          0
Shares            0
Likes             72
Profile Visits     4
Follows            0
dtype: int64
```

```
In [13]: print(df.max())
```

```
Impressions      36919
From Home        13473
From Hashtags    11817
From Explore     17414
From Other       2547
Saves            1095
Comments         19
Shares           75
Likes            549
Profile Visits   611
Follows          260
dtype: int64
```

## c.) Find covariance and correlation



In [14]: `df.cov()`

Out[14]:

	Impressions	From Home	From Hashtags	From Explore	From Other	Saves
Impressions	2.346221e+07	6.093874e+06	5.118299e+06	1.131032e+07	831295.170275	590009.6467
From Home	6.093874e+06	2.218272e+06	4.982052e+05	3.115675e+06	239533.494160	178994.0489
From Hashtags	5.118299e+06	4.982052e+05	3.550818e+06	9.377699e+05	125234.875944	90114.0850
From Explore	1.131032e+07	3.115675e+06	9.377699e+05	6.827906e+06	374881.829583	305449.2649
From Other	8.312952e+05	2.395335e+05	1.252349e+05	3.748818e+05	83770.321891	15016.5300
Saves	5.900096e+05	1.789940e+05	9.011409e+04	3.054493e+05	15016.530338	24435.2330
Comments	-4.897317e+02	6.713217e+01	1.078292e+03	-1.468644e+03	-111.519513	-14.9115
Shares	3.101650e+04	1.014281e+04	4.173288e+03	1.623273e+04	457.974790	1356.8358
Likes	3.391060e+05	8.568091e+04	1.027827e+05	1.407142e+05	9382.477995	10889.5939
Profile Visits	3.210100e+05	6.888498e+04	1.134539e+05	1.210301e+05	15957.467455	4909.3982
Follows	1.762853e+05	4.099823e+04	4.283407e+04	8.511763e+04	6475.539667	4020.1187

In [15]: `df.corr()`

Out[15]:

	Impressions	From Home	From Hashtags	From Explore	From Other	Saves	Comments	Shares
Impressions	1.000000	0.844698	0.560760	0.893607	0.592960	0.779231	-0.028524	0.634675
From Home	0.844698	1.000000	0.177516	0.800573	0.555666	0.768817	0.012716	0.674985
From Hashtags	0.560760	0.177516	1.000000	0.190453	0.229623	0.305929	0.161439	0.219511
From Explore	0.893607	0.800573	0.190453	1.000000	0.495685	0.747803	-0.158565	0.615731
From Other	0.592960	0.555666	0.229623	0.495685	1.000000	0.331907	-0.108703	0.156834
Saves	0.779231	0.768817	0.305929	0.747803	0.331907	1.000000	-0.026912	0.860324
Comments	-0.028524	0.012716	0.161439	-0.158565	-0.108703	-0.026912	1.000000	0.016933
Shares	0.634675	0.674985	0.219511	0.615731	0.156834	0.860324	0.016933	1.000000
Likes	0.849835	0.698330	0.662124	0.653699	0.393510	0.845643	0.123586	0.707795
Profile Visits	0.760981	0.531076	0.691345	0.531850	0.633080	0.360628	0.096714	0.245366
Follows	0.889363	0.672675	0.555485	0.796019	0.546737	0.628461	-0.060631	0.493071

In [ ]: