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

In [2]:
```
df = pd.read_csv("D:/resume projects/DSBDA covid vaccine/archive/covid_vaccine_stat
print(df.shape)
```

```
(7845, 24)
```

In [3]:
```
# Describing the dataset
print("\nThe dataset can be described as\n")
print(df.describe())
```

The dataset can be described as

	Total Doses Administered	Sessions	Sites
count	7.621000e+03	7.621000e+03	7621.000000
mean	9.188171e+06	4.792358e+05	2282.872064
std	3.746180e+07	1.911511e+06	7275.973730
min	7.000000e+00	0.000000e+00	0.000000
25%	1.356570e+05	6.004000e+03	69.000000
50%	8.182020e+05	4.547000e+04	597.000000
75%	6.625243e+06	3.428690e+05	1708.000000
max	5.132284e+08	3.501031e+07	73933.000000

	First Dose Administered	Second Dose Administered
count	7.621000e+03	7.621000e+03
mean	7.414415e+06	1.773755e+06
std	2.995209e+07	7.570382e+06
min	7.000000e+00	0.000000e+00
25%	1.166320e+05	1.283100e+04
50%	6.614590e+05	1.388180e+05
75%	5.387805e+06	1.166434e+06
max	4.001504e+08	1.130780e+08

	Male (Doses Administered)	Female (Doses Administered)
count	7.461000e+03	7.461000e+03
mean	3.620156e+06	3.168416e+06
std	1.737938e+07	1.515310e+07
min	0.000000e+00	2.000000e+00
25%	5.655500e+04	5.210700e+04
50%	3.897850e+05	3.342380e+05
75%	2.735777e+06	2.561513e+06
max	2.701636e+08	2.395186e+08

	Transgender (Doses Administered)	Covaxin (Doses Administered)
count	7461.000000	7.621000e+03
mean	1162.978019	1.044669e+06
std	5931.353995	4.452259e+06
min	0.000000	0.000000e+00
25%	8.000000	0.000000e+00
50%	113.000000	1.185100e+04
75%	800.000000	7.579300e+05
max	98275.000000	6.236742e+07

	CoviShield (Doses Administered)	...	18-44 Years (Doses Administered)
count	7.621000e+03	...	1.702000e+03
mean	8.126553e+06	...	8.773958e+06
std	3.298414e+07	...	2.660829e+07
min	7.000000e+00	...	2.662400e+04
25%	1.331340e+05	...	4.344842e+05
50%	7.567360e+05	...	3.095970e+06
75%	6.007817e+06	...	7.366241e+06
max	4.468251e+08	...	2.243304e+08

	45-60 Years (Doses Administered)	60+ Years (Doses Administered)
count	1.702000e+03	1.702000e+03
mean	7.442161e+06	5.641605e+06
std	2.225999e+07	1.681650e+07
min	1.681500e+04	9.994000e+03
25%	2.326275e+05	1.285605e+05
50%	2.695938e+06	1.805696e+06
75%	6.969726e+06	5.294763e+06
max	1.667575e+08	1.186927e+08

	18-44 Years(Individuals Vaccinated)
count	3.733000e+03

```
mean                          1.395895e+06
std                           5.501454e+06
min                           1.059000e+03
25%                           5.655400e+04
50%                           2.947270e+05
75%                           9.105160e+05
max                           9.224315e+07

       45-60 Years(Individuals Vaccinated)  60+ Years(Individuals Vaccinated)  \
count                         3.734000e+03                       3.734000e+03
mean                          2.916515e+06                       2.627444e+06
std                           9.567607e+06                       8.192225e+06
min                           1.136000e+03                       5.580000e+02
25%                           9.248225e+04                       5.615975e+04
50%                           8.330395e+05                       7.887425e+05
75%                           2.499280e+06                       2.337874e+06
max                           9.096888e+07                       6.731098e+07

       Male(Individuals Vaccinated)  Female(Individuals Vaccinated)  \
count                  1.600000e+02                    1.600000e+02
mean                   4.461687e+07                    3.951018e+07
std                    3.950749e+07                    3.417684e+07
min                    2.375700e+04                    2.451700e+04
25%                    5.739350e+06                    5.023407e+06
50%                    3.716590e+07                    3.365402e+07
75%                    7.441663e+07                    6.685368e+07
max                    1.349420e+08                    1.156684e+08

       Transgender(Individuals Vaccinated)  Total Individuals Vaccinated
count                           160.000000                  5.919000e+03
mean                          12370.543750                  4.547842e+06
std                           12485.026753                  1.834182e+07
min                               2.000000                  7.000000e+00
25%                            1278.750000                  7.427550e+04
50%                            8007.500000                  4.022880e+05
75%                           19851.000000                  3.501562e+06
max                           46462.000000                  2.506569e+08

[8 rows x 22 columns]
```

In [4]:
```
# Printing mean of columns
print("\nThe mean of columns of dataset is\n")
print(df.mean(skipna=True, numeric_only=True))
```

```
The mean of columns of dataset is

Total Doses Administered              9.188171e+06
Sessions                              4.792358e+05
 Sites                                2.282872e+03
First Dose Administered               7.414415e+06
Second Dose Administered              1.773755e+06
Male (Doses Administered)             3.620156e+06
Female (Doses Administered)           3.168416e+06
Transgender (Doses Administered)      1.162978e+03
 Covaxin (Doses Administered)         1.044669e+06
CoviShield (Doses Administered)       8.126553e+06
Sputnik V (Doses Administered)        9.655571e+03
AEFI                                  1.139403e+03
18-44 Years (Doses Administered)      8.773958e+06
45-60 Years (Doses Administered)      7.442161e+06
60+ Years (Doses Administered)        5.641605e+06
18-44 Years(Individuals Vaccinated)   1.395895e+06
45-60 Years(Individuals Vaccinated)   2.916515e+06
60+ Years(Individuals Vaccinated)     2.627444e+06
Male(Individuals Vaccinated)          4.461687e+07
Female(Individuals Vaccinated)        3.951018e+07
Transgender(Individuals Vaccinated)   1.237054e+04
Total Individuals Vaccinated          4.547842e+06
dtype: float64
```

In [5]:
```
# Printing count of columns
print("\nThe count of columns of dataset is\n")
print(df.count())
```

```
The count of columns of dataset is

Updated On                            7845
State                                 7845
Total Doses Administered              7621
Sessions                              7621
 Sites                                7621
First Dose Administered               7621
Second Dose Administered              7621
Male (Doses Administered)             7461
Female (Doses Administered)           7461
Transgender (Doses Administered)      7461
 Covaxin (Doses Administered)         7621
CoviShield (Doses Administered)       7621
Sputnik V (Doses Administered)        2995
AEFI                                  5438
18-44 Years (Doses Administered)      1702
45-60 Years (Doses Administered)      1702
60+ Years (Doses Administered)        1702
18-44 Years(Individuals Vaccinated)   3733
45-60 Years(Individuals Vaccinated)   3734
60+ Years(Individuals Vaccinated)     3734
Male(Individuals Vaccinated)           160
Female(Individuals Vaccinated)         160
Transgender(Individuals Vaccinated)    160
Total Individuals Vaccinated          5919
dtype: int64
```

In [6]:
```
print("\nThe head of dataset is\n")
print(df.head())
```

The head of dataset is

	Updated On	State	Total Doses Administered	Sessions	Sites	First Dose Administered	Second Dose Administered	Male (Doses Administered)	Female (Doses Administered)	Transgender (Doses Administered)	...	18-44 Years (Doses Administered)	45-60 Years (Doses Administered)	60+ Years (Doses Administered)	18-44 Years(Individuals Vaccinated)	45-60 Years(Individuals Vaccinated)	60+ Years(Individuals Vaccinated)	Male(Individuals Vaccinated)	Female(Individuals Vaccinated)	Transgender(Individuals Vaccinated)	Total Individuals Vaccinated
0	16/01/2021	India	48276.0	3455.0	2957.0	48276.0	0.0	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN	NaN	23757.0	24517.0	2.0	48276.0
1	17/01/2021	India	58604.0	8532.0	4954.0	58604.0	0.0	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN	NaN	27348.0	31252.0	4.0	58604.0
2	18/01/2021	India	99449.0	13611.0	6583.0	99449.0	0.0	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN	NaN	41361.0	58083.0	5.0	99449.0
3	19/01/2021	India	195525.0	17855.0	7951.0	195525.0	0.0	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN	NaN	81901.0	113613.0	11.0	195525.0
4	20/01/2021	India	251280.0	25472.0	10504.0	251280.0	0.0	NaN	NaN	NaN	...	NaN	NaN	NaN	NaN	NaN	NaN	98111.0	153145.0	24.0	251280.0

```
[5 rows x 24 columns]
```

In [8]:
```
# Grouping dataset state wise
# Take user input as state from user
state = input("Enter the state name you want to search for first dose: ")
print("\n")
df1 = df.groupby('State').get_group(state)
print(df1)
```

```
Enter the state name you want to search for first dose: Maharashtra


      Updated On        State  Total Doses Administered  Sessions   Sites   \
4453  16/01/2021  Maharashtra                    5726.0     179.0    174.0
4454  17/01/2021  Maharashtra                    6521.0     269.0    216.0
4455  18/01/2021  Maharashtra                    6151.0     772.0    320.0
4456  19/01/2021  Maharashtra                   13699.0    1196.0    340.0
4457  20/01/2021  Maharashtra                   23880.0    1547.0    347.0
...          ...          ...                       ...       ...      ...
4660  11/08/2021  Maharashtra                       NaN       NaN      NaN
4661  12/08/2021  Maharashtra                       NaN       NaN      NaN
4662  13/08/2021  Maharashtra                       NaN       NaN      NaN
4663  14/08/2021  Maharashtra                       NaN       NaN      NaN
4664  15/08/2021  Maharashtra                       NaN       NaN      NaN

      First Dose Administered  Second Dose Administered  \
4453                   5726.0                       0.0
4454                   6521.0                       0.0
4455                   6151.0                       0.0
4456                  13699.0                       0.0
4457                  23880.0                       0.0
...                       ...                       ...
4660                      NaN                       NaN
4661                      NaN                       NaN
4662                      NaN                       NaN
4663                      NaN                       NaN
4664                      NaN                       NaN

      Male (Doses Administered)  Female (Doses Administered)  \
4453                     3668.0                       2057.0
4454                     3953.0                       2566.0
4455                     3569.0                       2581.0
4456                     6328.0                       7367.0
4457                     9658.0                      14205.0
...                         ...                          ...
4660                       NaN                          NaN
4661                       NaN                          NaN
4662                       NaN                          NaN
4663                       NaN                          NaN
4664                       NaN                          NaN

      Transgender (Doses Administered)  ...  18-44 Years (Doses Administered)  \
4453                               1.0  ...                                NaN
4454                               2.0  ...                                NaN
4455                               1.0  ...                                NaN
4456                               4.0  ...                                NaN
4457                              17.0  ...                                NaN
...                                ...  ...                                ...
4660                               NaN  ...                                NaN
4661                               NaN  ...                                NaN
4662                               NaN  ...                                NaN
4663                               NaN  ...                                NaN
4664                               NaN  ...                                NaN

      45-60 Years (Doses Administered)  60+ Years (Doses Administered)  \
4453                               NaN                             NaN
4454                               NaN                             NaN
4455                               NaN                             NaN
4456                               NaN                             NaN
4457                               NaN                             NaN
...                                ...                             ...
4660                               NaN                             NaN
4661                               NaN                             NaN
```

```
4662                                NaN                                NaN
4663                                NaN                                NaN
4664                                NaN                                NaN

      18-44 Years(Individuals Vaccinated)  \
4453                                  NaN
4454                                  NaN
4455                                  NaN
4456                                  NaN
4457                                  NaN
...                                   ...
4660                                  NaN
4661                                  NaN
4662                                  NaN
4663                                  NaN
4664                                  NaN

      45-60 Years(Individuals Vaccinated)  60+ Years(Individuals Vaccinated)  \
4453                                  NaN                                NaN
4454                                  NaN                                NaN
4455                                  NaN                                NaN
4456                                  NaN                                NaN
4457                                  NaN                                NaN
...                                   ...                                ...
4660                                  NaN                                NaN
4661                                  NaN                                NaN
4662                                  NaN                                NaN
4663                                  NaN                                NaN
4664                                  NaN                                NaN

      Male(Individuals Vaccinated)  Female(Individuals Vaccinated)  \
4453                           NaN                             NaN
4454                           NaN                             NaN
4455                           NaN                             NaN
4456                           NaN                             NaN
4457                           NaN                             NaN
...                            ...                             ...
4660                           NaN                             NaN
4661                           NaN                             NaN
4662                           NaN                             NaN
4663                           NaN                             NaN
4664                           NaN                             NaN

      Transgender(Individuals Vaccinated)  Total Individuals Vaccinated
4453                                  NaN                        5726.0
4454                                  NaN                        6521.0
4455                                  NaN                        6151.0
4456                                  NaN                       13699.0
4457                                  NaN                       23880.0
...                                   ...                           ...
4660                                  NaN                           NaN
4661                                  NaN                           NaN
4662                                  NaN                           NaN
4663                                  NaN                           NaN
4664                                  NaN                           NaN

[212 rows x 24 columns]
```

In [9]:

```
if (state in df['State'].values):
 # Printing total first doses in user entered state
 firstSum = df1['First Dose Administered'].sum()
 print("Total first doses in state " + state + " are", firstSum, "\n")
 # Printing total second doses in user entered state
 secondSum = df1['Second Dose Administered'].sum()
```

```
 print("Total second doses in state " + state + " are", secondSum, "\n")
else:
 print("Invalid State Name")
```

```
Total first doses in state Maharashtra are 2784364331.0

Total second doses in state Maharashtra are 712881086.0
```

In [10]:

```
# Printing total male doses administered
malesDoses = df1['Male (Doses Administered)'].sum()
print("Total male doses are:", malesDoses, "\n")
# Printing total female doses administered
femaleDoses = df1['Female (Doses Administered)'].sum()
print("Total female doses are:", femaleDoses)
```

```
Total male doses are: 1728077050.0

Total female doses are: 1470241329.0
```

In [ ]: