Covid Data Analysis

```python
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import plotly.express as px
import datetime

# Load Covid-19 India data
covid_df = pd.read_csv("/Users/anjalikumari/Downloads/covid
dataset/covid_19_india.csv")

# Load Covid Vaccine Statewise data
vaccine_df = pd.read_csv("/Users/anjalikumari/Downloads/covid
dataset/covid_vaccine_statewise.csv")

covid_df.head(10)
```

```
    Sno        Date      Time State/UnionTerritory
ConfirmedIndianNational  \
0   1.0  2020-01-30  6:00 PM                  Kerala
1
1   2.0  2020-01-31  6:00 PM                  Kerala
1
2   3.0  2020-02-01  6:00 PM                  Kerala
2
3   4.0  2020-02-02  6:00 PM                  Kerala
3
4   5.0  2020-02-03  6:00 PM                  Kerala
3
5   6.0  2020-02-04  6:00 PM                  Kerala
3
6   7.0  2020-02-05  6:00 PM                  Kerala
3
7   8.0  2020-02-06  6:00 PM                  Kerala
3
8   9.0  2020-02-07  6:00 PM                  Kerala
3
9  10.0  2020-02-08  6:00 PM                  Kerala
3


   ConfirmedForeignNational  Cured  Deaths  Confirmed
0                         0    0.0     0.0        1.0
1                         0    0.0     0.0        1.0
2                         0    0.0     0.0        2.0
3                         0    0.0     0.0        3.0
4                         0    0.0     0.0        3.0
```

```
5                                        0     0.0     0.0        3.0
6                                        0     0.0     0.0        3.0
7                                        0     0.0     0.0        3.0
8                                        0     0.0     0.0        3.0
9                                        0     0.0     0.0        3.0
```

```python
# Display info of covid_df
covid_df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 15114 entries, 0 to 15113
Data columns (total 5 columns):
 #   Column                 Non-Null Count  Dtype
---  ------                 --------------  -----
 0   Date                   15086 non-null  object
 1   State/UnionTerritory   15086 non-null  object
 2   Cured                  15086 non-null  float64
 3   Deaths                 15086 non-null  float64
 4   Confirmed              15086 non-null  float64
dtypes: float64(3), object(2)
memory usage: 590.5+ KB
```

```python
# Display descriptive statistics of covid_df
covid_df.describe()
```

```
                Cured          Deaths       Confirmed
count   1.508600e+04    15086.000000    1.508600e+04
mean    1.747937e+05     2721.084449    1.942820e+05
std     3.648330e+05     7182.672358    4.095184e+05
min     0.000000e+00        0.000000    0.000000e+00
25%     1.685000e+03       12.000000    2.935500e+03
50%     1.964700e+04      364.000000    2.608150e+04
75%     2.087552e+05     2170.000000    2.216012e+05
max     4.927480e+06    83777.000000    5.433506e+06
```

```python
# Display first 7 rows of vaccine_df
vaccine_df.head(7)
```

```
   Updated On   State  Total Doses Administered   Sessions     Sites   \
0  16/01/2021   India                   48276.0     3455.0    2957.0
1  17/01/2021   India                   58604.0     8532.0    4954.0
2  18/01/2021   India                   99449.0    13611.0    6583.0
3  19/01/2021   India                  195525.0    17855.0    7951.0
4  20/01/2021   India                  251280.0    25472.0   10504.0
5  21/01/2021   India                  365965.0    32226.0   12600.0
6  22/01/2021   India                  549381.0    36988.0   14115.0

   First Dose Administered   Second Dose Administered   \
0                 48276.0                        0.0
1                 58604.0                        0.0
```

```
2                   99449.0                     0.0
3                  195525.0                     0.0
4                  251280.0                     0.0
5                  365965.0                     0.0
6                  549381.0                     0.0

   Male (Doses Administered)  Female (Doses Administered)  \
0                        NaN                          NaN
1                        NaN                          NaN
2                        NaN                          NaN
3                        NaN                          NaN
4                        NaN                          NaN
5                        NaN                          NaN
6                        NaN                          NaN

   Transgender (Doses Administered)  ...  18-44 Years (Doses
Administered)  \
0                               NaN  ...
NaN
1                               NaN  ...
NaN
2                               NaN  ...
NaN
3                               NaN  ...
NaN
4                               NaN  ...
NaN
5                               NaN  ...
NaN
6                               NaN  ...
NaN

   45-60 Years (Doses Administered)  60+ Years (Doses Administered)  \
0                               NaN                             NaN
1                               NaN                             NaN
2                               NaN                             NaN
3                               NaN                             NaN
4                               NaN                             NaN
5                               NaN                             NaN
6                               NaN                             NaN

   18-44 Years(Individuals Vaccinated)  45-60 Years(Individuals
Vaccinated)  \
0                                   NaN
NaN
1                                   NaN
NaN
2                                   NaN
NaN
3                                   NaN
```

```
NaN
4                                         NaN
NaN
5                                         NaN
NaN
6                                         NaN
NaN

   60+ Years(Individuals Vaccinated)  Male(Individuals Vaccinated)  \
0                                NaN                        23757.0
1                                NaN                        27348.0
2                                NaN                        41361.0
3                                NaN                        81901.0
4                                NaN                        98111.0
5                                NaN                       132784.0
6                                NaN                       193899.0

   Female(Individuals Vaccinated)  Transgender(Individuals Vaccinated)
\
0                         24517.0                                  2.0

1                         31252.0                                  4.0

2                         58083.0                                  5.0

3                        113613.0                                 11.0

4                        153145.0                                 24.0

5                        233143.0                                 38.0

6                        355402.0                                 80.0


   Total Individuals Vaccinated
0                       48276.0
1                       58604.0
2                       99449.0
3                      195525.0
4                      251280.0
5                      365965.0
6                      549381.0

[7 rows x 24 columns]
```

```python
# Display first 7 rows of vaccine_df
vaccine_df.head(7)
```

```
   Updated On  State  Total Doses Administered  Sessions   Sites   \
0  16/01/2021  India                   48276.0    3455.0  2957.0
```

```
1  17/01/2021  India                    58604.0   8532.0   4954.0
2  18/01/2021  India                    99449.0  13611.0   6583.0
3  19/01/2021  India                   195525.0  17855.0   7951.0
4  20/01/2021  India                   251280.0  25472.0  10504.0
5  21/01/2021  India                   365965.0  32226.0  12600.0
6  22/01/2021  India                   549381.0  36988.0  14115.0

   First Dose Administered  Second Dose Administered  \
0                  48276.0                       0.0
1                  58604.0                       0.0
2                  99449.0                       0.0
3                 195525.0                       0.0
4                 251280.0                       0.0
5                 365965.0                       0.0
6                 549381.0                       0.0

   Male (Doses Administered)  Female (Doses Administered)  \
0                        NaN                          NaN
1                        NaN                          NaN
2                        NaN                          NaN
3                        NaN                          NaN
4                        NaN                          NaN
5                        NaN                          NaN
6                        NaN                          NaN

   Transgender (Doses Administered)   ...   18-44 Years (Doses
Administered)  \
0                                NaN  ...
NaN
1                                NaN  ...
NaN
2                                NaN  ...
NaN
3                                NaN  ...
NaN
4                                NaN  ...
NaN
5                                NaN  ...
NaN
6                                NaN  ...
NaN

   45-60 Years (Doses Administered)  60+ Years (Doses Administered)  \
0                               NaN                             NaN
1                               NaN                             NaN
2                               NaN                             NaN
3                               NaN                             NaN
4                               NaN                             NaN
5                               NaN                             NaN
6                               NaN                             NaN
```

```
   18-44 Years(Individuals Vaccinated)  45-60 Years(Individuals
Vaccinated)  \
0                                  NaN
NaN
1                                  NaN
NaN
2                                  NaN
NaN
3                                  NaN
NaN
4                                  NaN
NaN
5                                  NaN
NaN
6                                  NaN
NaN

   60+ Years(Individuals Vaccinated)  Male(Individuals Vaccinated)  \
0                                 NaN                       23757.0
1                                 NaN                       27348.0
2                                 NaN                       41361.0
3                                 NaN                       81901.0
4                                 NaN                       98111.0
5                                 NaN                      132784.0
6                                 NaN                      193899.0

   Female(Individuals Vaccinated)  Transgender(Individuals Vaccinated)
\
0                         24517.0                                  2.0

1                         31252.0                                  4.0

2                         58083.0                                  5.0

3                        113613.0                                 11.0

4                        153145.0                                 24.0

5                        233143.0                                 38.0

6                        355402.0                                 80.0

   Total Individuals Vaccinated
0                       48276.0
1                       58604.0
2                       99449.0
3                      195525.0
4                      251280.0
```

```
5                              365965.0
6                              549381.0

[7 rows x 24 columns]
```

```
# Drop unnecessary columns from covid_df
covid_df.drop(['Sno', 'Time', 'ConfirmedIndianNational',
'ConfirmedForeignNational'], inplace=True, axis=1)

covid_df.head()
```

```
        Date State/UnionTerritory  Cured  Deaths  Confirmed
0  2020-01-30                Kerala    0.0     0.0        1.0
1  2020-01-31                Kerala    0.0     0.0        1.0
2  2020-02-01                Kerala    0.0     0.0        2.0
3  2020-02-02                Kerala    0.0     0.0        3.0
4  2020-02-03                Kerala    0.0     0.0        3.0
```

```
covid_df['Date'] = pd.to_datetime(covid_df['Date'], format = '%Y-%m-
%d')

covid_df.head()
```

```
       Date State/UnionTerritory  Cured  Deaths  Confirmed
0 2020-01-30               Kerala    0.0     0.0        1.0
1 2020-01-31               Kerala    0.0     0.0        1.0
2 2020-02-01               Kerala    0.0     0.0        2.0
3 2020-02-02               Kerala    0.0     0.0        3.0
4 2020-02-03               Kerala    0.0     0.0        3.0
```

```
covid_df['Active_Cases'] = covid_df['Confirmed'] - (covid_df['Cured']
+ covid_df['Deaths'])
covid_df.tail()
```

```
      Date State/UnionTerritory  Cured  Deaths  Confirmed
Active_Cases
15109  NaT                      NaN    NaN     NaN        NaN
NaN
15110  NaT                      NaN    NaN     NaN        NaN
NaN
15111  NaT                      NaN    NaN     NaN        NaN
NaN
15112  NaT                      NaN    NaN     NaN        NaN
NaN
15113  NaT                      NaN    NaN     NaN        NaN
NaN
```

```
statewise = pd.pivot_table(covid_df, values=['Confirmed', 'Deaths',
'Cured'],
```

```
                                  index='State/UnionTerritory',
aggfunc='max')

statewise['Recovery Rate'] = statewise['Cured'] * 100 /
statewise['Confirmed']


statewise['Mortality Rate'] = statewise['Deaths'] * 100 /
statewise['Confirmed']

statewise = statewise.sort_values(by='Confirmed', ascending=False)

statewise.style.background_gradient(cmap='cubehelix')

<pandas.io.formats.style.Styler at 0x14a581160>

# Top 10 active cases states
top_10_active_cases = covid_df.groupby('State/UnionTerritory').max(
).sort_values(by=['Active_Cases'], ascending=False).reset_index()


fig = plt.figure(figsize=(16, 9))
plt.title("Top 10 States with Most Active Cases in India", size=25)
ax = sns.barplot(data=top_10_active_cases.iloc[:10], y='Active_Cases',
x='State/UnionTerritory',
                 linewidth=2, edgecolor='red')
plt.xlabel("States")
plt.ylabel("Total Active Cases")
plt.show()
```
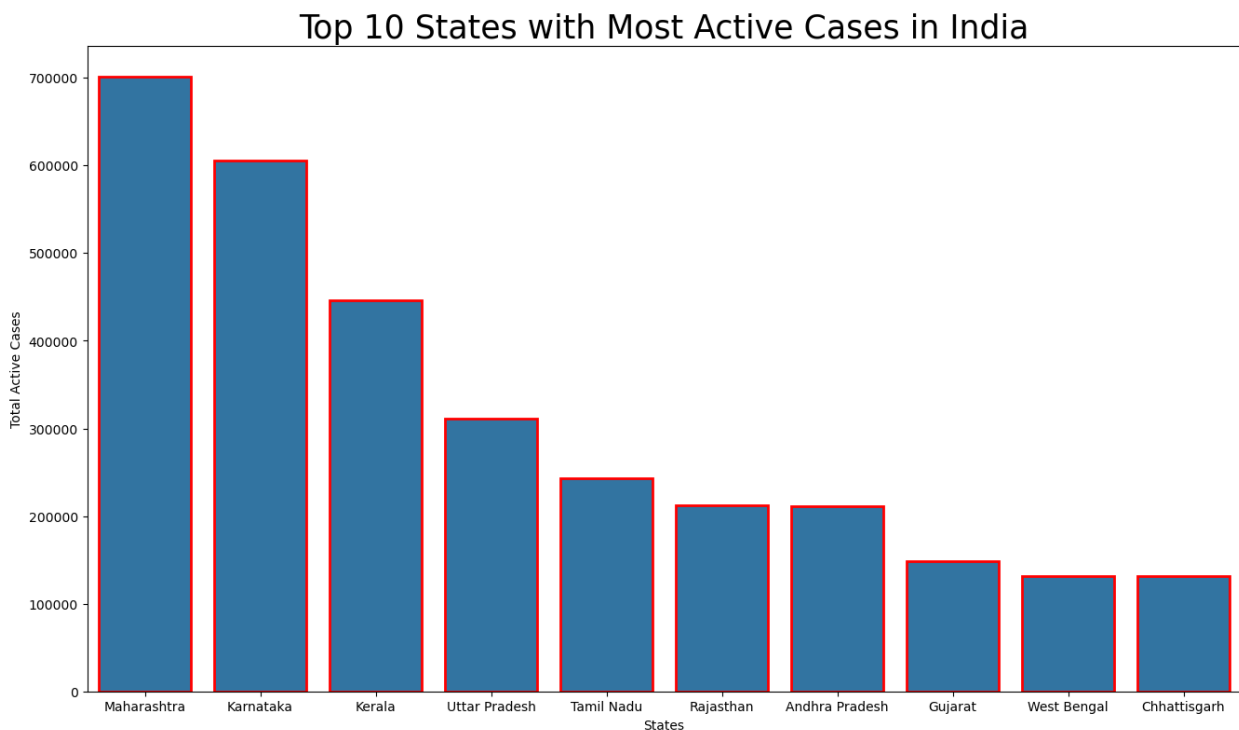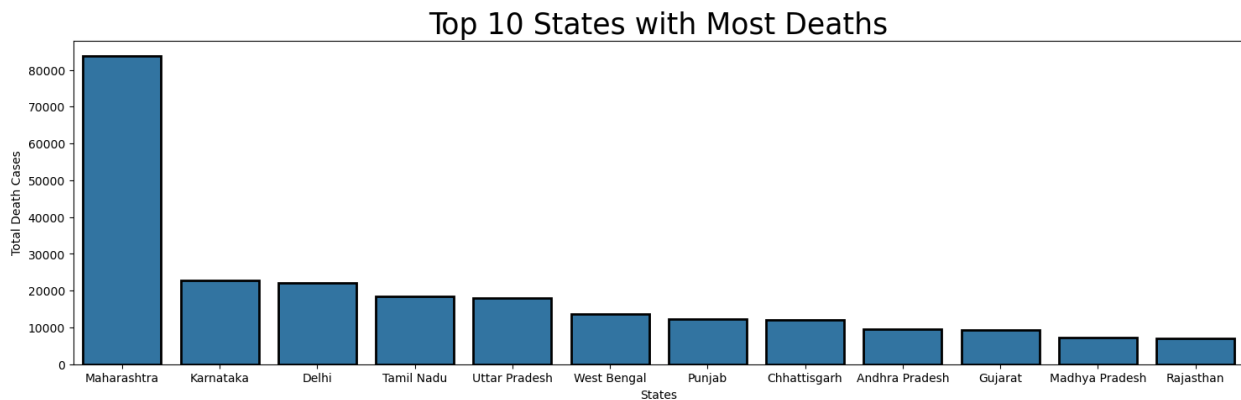

Top 10 States with Most Active Cases in India

```python
# Top states with highest deaths
top_10_deaths = covid_df.groupby('State/UnionTerritory').max(
).sort_values(by=['Deaths'], ascending=False).reset_index()

# Plotting the bar plot
plt.figure(figsize=(18, 5))
plt.title("Top 10 States with Most Deaths", size=25)
ax = sns.barplot(data=top_10_deaths.iloc[:12], y='Deaths',
x='State/UnionTerritory',
                 linewidth=2, edgecolor='black')
plt.xlabel("States")
plt.ylabel("Total Death Cases")
plt.show()
```
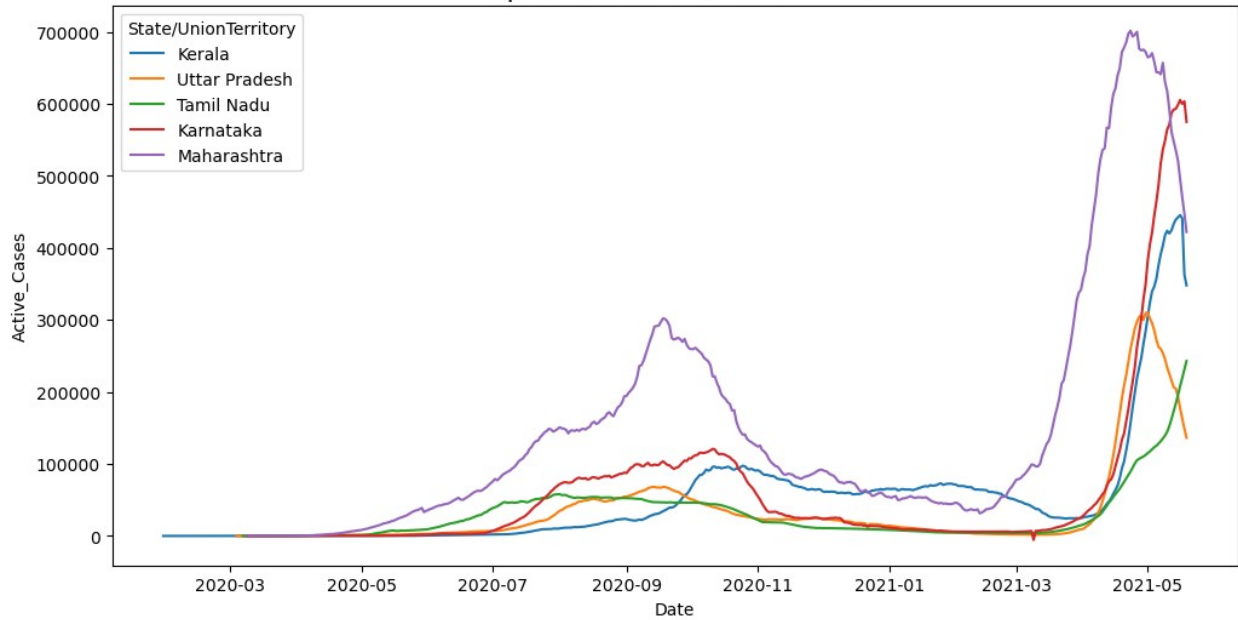

Top 10 States with Most Deaths

```python
# Growth trend
plt.figure(figsize=(12, 6))
ax = sns.lineplot(data=covid_df[covid_df['State/UnionTerritory'].isin(
    ['Maharashtra', 'Karnataka', 'Kerala', 'Tamil Nadu', 'Uttar
Pradesh'])],
                  x='Date', y='Active_Cases',
hue='State/UnionTerritory')
ax.set_title("Top 5 Affected States in India", size=16)
plt.show()
```

Top 5 Affected States in India

```
vaccine_df.head()

   Updated On  State  Total Doses Administered  Sessions   Sites   \
0  16/01/2021  India                   48276.0    3455.0   2957.0
1  17/01/2021  India                   58604.0    8532.0   4954.0
2  18/01/2021  India                   99449.0   13611.0   6583.0
3  19/01/2021  India                  195525.0   17855.0   7951.0
4  20/01/2021  India                  251280.0   25472.0  10504.0

   First Dose Administered  Second Dose Administered  \
0                  48276.0                       0.0
1                  58604.0                       0.0
2                  99449.0                       0.0
3                 195525.0                       0.0
4                 251280.0                       0.0

   Male (Doses Administered)  Female (Doses Administered)  \
0                        NaN                          NaN
1                        NaN                          NaN
2                        NaN                          NaN
3                        NaN                          NaN
4                        NaN                          NaN

   Transgender (Doses Administered)  ...  18-44 Years (Doses
Administered)  \
0                               NaN  ...
NaN
1                               NaN  ...
NaN
2                               NaN  ...
```

```
NaN
3                                NaN  ...
NaN
4                                NaN  ...
NaN

   45-60 Years (Doses Administered)  60+ Years (Doses Administered)  \
0                              NaN                             NaN
1                              NaN                             NaN
2                              NaN                             NaN
3                              NaN                             NaN
4                              NaN                             NaN

   18-44 Years(Individuals Vaccinated)  45-60 Years(Individuals
Vaccinated)  \
0                                  NaN
NaN
1                                  NaN
NaN
2                                  NaN
NaN
3                                  NaN
NaN
4                                  NaN
NaN

   60+ Years(Individuals Vaccinated)  Male(Individuals Vaccinated)  \
0                                NaN                       23757.0
1                                NaN                       27348.0
2                                NaN                       41361.0
3                                NaN                       81901.0
4                                NaN                       98111.0

   Female(Individuals Vaccinated)  Transgender(Individuals Vaccinated)
\
0                         24517.0                                  2.0

1                         31252.0                                  4.0

2                         58083.0                                  5.0

3                        113613.0                                 11.0

4                        153145.0                                 24.0


   Total Individuals Vaccinated
0                     48276.0
1                     58604.0
2                     99449.0
```

```
3                              195525.0
4                              251280.0

[5 rows x 24 columns]

vaccine_df.rename(columns={'Updated On': 'Vaccine_Date'},
inplace=True)

vaccine_df.head(10)

  Vaccine_Date   State  Total Doses Administered   Sessions    Sites   \
0   16/01/2021   India                   48276.0     3455.0    2957.0
1   17/01/2021   India                   58604.0     8532.0    4954.0
2   18/01/2021   India                   99449.0    13611.0    6583.0
3   19/01/2021   India                  195525.0    17855.0    7951.0
4   20/01/2021   India                  251280.0    25472.0   10504.0
5   21/01/2021   India                  365965.0    32226.0   12600.0
6   22/01/2021   India                  549381.0    36988.0   14115.0
7   23/01/2021   India                  759008.0    43076.0   15605.0
8   24/01/2021   India                  835058.0    49851.0   18111.0
9   25/01/2021   India                 1277104.0    55151.0   19682.0

    First Dose Administered   Second Dose Administered   \
0                   48276.0                        0.0
1                   58604.0                        0.0
2                   99449.0                        0.0
3                  195525.0                        0.0
4                  251280.0                        0.0
5                  365965.0                        0.0
6                  549381.0                        0.0
7                  759008.0                        0.0
8                  835058.0                        0.0
9                 1277104.0                        0.0

    Male (Doses Administered)   Female (Doses Administered)   \
0                         NaN                           NaN
1                         NaN                           NaN
2                         NaN                           NaN
3                         NaN                           NaN
4                         NaN                           NaN
5                         NaN                           NaN
6                         NaN                           NaN
7                         NaN                           NaN
8                         NaN                           NaN
9                         NaN                           NaN

    Transgender (Doses Administered)   ...   18-44 Years (Doses
Administered)   \
0                                NaN   ...
NaN
```

```
1                          NaN  ...
NaN
2                          NaN  ...
NaN
3                          NaN  ...
NaN
4                          NaN  ...
NaN
5                          NaN  ...
NaN
6                          NaN  ...
NaN
7                          NaN  ...
NaN
8                          NaN  ...
NaN
9                          NaN  ...
NaN

   45-60 Years (Doses Administered)  60+ Years (Doses Administered)  \
0                               NaN                             NaN
1                               NaN                             NaN
2                               NaN                             NaN
3                               NaN                             NaN
4                               NaN                             NaN
5                               NaN                             NaN
6                               NaN                             NaN
7                               NaN                             NaN
8                               NaN                             NaN
9                               NaN                             NaN

   18-44 Years(Individuals Vaccinated)  45-60 Years(Individuals
Vaccinated)  \
0                                  NaN
NaN
1                                  NaN
NaN
2                                  NaN
NaN
3                                  NaN
NaN
4                                  NaN
NaN
5                                  NaN
NaN
6                                  NaN
NaN
7                                  NaN
NaN
```

```
8                                    NaN
NaN
9                                    NaN
NaN

   60+ Years(Individuals Vaccinated)  Male(Individuals Vaccinated)  \
0                              NaN                          23757.0
1                              NaN                          27348.0
2                              NaN                          41361.0
3                              NaN                          81901.0
4                              NaN                          98111.0
5                              NaN                         132784.0
6                              NaN                         193899.0
7                              NaN                         267856.0
8                              NaN                         296283.0
9                              NaN                         444137.0

   Female(Individuals Vaccinated)  Transgender(Individuals Vaccinated)
\
0                        24517.0                                  2.0

1                        31252.0                                  4.0

2                        58083.0                                  5.0

3                       113613.0                                 11.0

4                       153145.0                                 24.0

5                       233143.0                                 38.0

6                       355402.0                                 80.0

7                       491049.0                                103.0

8                       538647.0                                128.0

9                       832766.0                                201.0


   Total Individuals Vaccinated
0                      48276.0
1                      58604.0
2                      99449.0
3                     195525.0
4                     251280.0
5                     365965.0
6                     549381.0
7                     759008.0
8                     835058.0
9                    1277104.0
```

```
[10 rows x 24 columns]

vaccine_df.info()

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 7845 entries, 0 to 7844
Data columns (total 24 columns):
 #   Column                              Non-Null Count  Dtype
---  ------                              --------------  -----
 0   Vaccine_Date                        7845 non-null   object
 1   State                               7845 non-null   object
 2   Total Doses Administered            7621 non-null   float64
 3   Sessions                            7621 non-null   float64
 4    Sites                              7621 non-null   float64
 5   First Dose Administered             7621 non-null   float64
 6   Second Dose Administered            7621 non-null   float64
 7   Male (Doses Administered)           7461 non-null   float64
 8   Female (Doses Administered)         7461 non-null   float64
 9   Transgender (Doses Administered)    7461 non-null   float64
 10   Covaxin (Doses Administered)       7621 non-null   float64
 11  CoviShield (Doses Administered)     7621 non-null   float64
 12  Sputnik V (Doses Administered)      2995 non-null   float64
 13  AEFI                                5438 non-null   float64
 14  18-44 Years (Doses Administered)    1702 non-null   float64
 15  45-60 Years (Doses Administered)    1702 non-null   float64
 16  60+ Years (Doses Administered)      1702 non-null   float64
 17  18-44 Years(Individuals Vaccinated) 3733 non-null   float64
 18  45-60 Years(Individuals Vaccinated) 3734 non-null   float64
 19  60+ Years(Individuals Vaccinated)   3734 non-null   float64
 20  Male(Individuals Vaccinated)        160 non-null    float64
 21  Female(Individuals Vaccinated)      160 non-null    float64
 22  Transgender(Individuals Vaccinated) 160 non-null    float64
 23  Total Individuals Vaccinated        5919 non-null   float64
dtypes: float64(22), object(2)
memory usage: 1.4+ MB

vaccine_df.isnull().sum()

Vaccine_Date                         0
State                                0
Total Doses Administered             224
Sessions                             224
 Sites                               224
First Dose Administered              224
Second Dose Administered             224
Male (Doses Administered)            384
Female (Doses Administered)          384
Transgender (Doses Administered)     384
 Covaxin (Doses Administered)        224
```

```
CoviShield (Doses Administered)              224
Sputnik V (Doses Administered)              4850
AEFI                                        2407
18-44 Years (Doses Administered)            6143
45-60 Years (Doses Administered)            6143
60+ Years (Doses Administered)              6143
18-44 Years(Individuals Vaccinated)         4112
45-60 Years(Individuals Vaccinated)         4111
60+ Years(Individuals Vaccinated)           4111
Male(Individuals Vaccinated)                7685
Female(Individuals Vaccinated)              7685
Transgender(Individuals Vaccinated)         7685
Total Individuals Vaccinated                1926
dtype: int64
```

```python
vaccination = vaccine_df.drop(columns=[
    'Sputnik V (Doses Administered)', 'AEFI', '18-44 Years (Doses
Administered)',
    '45-60 Years (Doses Administered)', '60+ Years (Doses
Administered)'
], axis=1)
```

```python
vaccination.head()
```

```
  Vaccine_Date   State   Total Doses Administered   Sessions    Sites    \
0   16/01/2021   India                    48276.0     3455.0    2957.0
1   17/01/2021   India                    58604.0     8532.0    4954.0
2   18/01/2021   India                    99449.0    13611.0    6583.0
3   19/01/2021   India                   195525.0    17855.0    7951.0
4   20/01/2021   India                   251280.0    25472.0   10504.0

   First Dose Administered   Second Dose Administered  \
0                 48276.0                        0.0
1                 58604.0                        0.0
2                 99449.0                        0.0
3                195525.0                        0.0
4                251280.0                        0.0

   Male (Doses Administered)   Female (Doses Administered)  \
0                       NaN                           NaN
1                       NaN                           NaN
2                       NaN                           NaN
3                       NaN                           NaN
4                       NaN                           NaN

   Transgender (Doses Administered)   Covaxin (Doses Administered)  \
0                              NaN                          579.0
1                              NaN                          635.0
2                              NaN                         1299.0
3                              NaN                         3017.0
```

```
4                                    NaN                                    3946.0

   CoviShield (Doses Administered)  18-44 Years(Individuals
Vaccinated)  \
0                            47697.0
NaN
1                            57969.0
NaN
2                            98150.0
NaN
3                           192508.0
NaN
4                           247334.0
NaN

   45-60 Years(Individuals Vaccinated)  60+ Years(Individuals
Vaccinated)  \
0                                   NaN
NaN
1                                   NaN
NaN
2                                   NaN
NaN
3                                   NaN
NaN
4                                   NaN
NaN

   Male(Individuals Vaccinated)  Female(Individuals Vaccinated)  \
0                       23757.0                          24517.0
1                       27348.0                          31252.0
2                       41361.0                          58083.0
3                       81901.0                         113613.0
4                       98111.0                         153145.0

   Transgender(Individuals Vaccinated)  Total Individuals Vaccinated
0                                   2.0                       48276.0
1                                   4.0                       58604.0
2                                   5.0                       99449.0
3                                  11.0                      195525.0
4                                  24.0                      251280.0
```

```python
# Male vs Female vaccination

male = vaccination["Male(Individuals Vaccinated)"]. sum()
female = vaccination["Female(Individuals Vaccinated)"]. sum()
px.pie(names=["Male", "Female"], values=[male, female], title = "Male
and Female Vaccination")
```

Male and Female Vaccination

| | Male |
| | Female |

```
max_vac = vaccine.groupby('State')
['Total'].sum().to_frame('Total').sort_values('Total',
ascending=False)
max_vac = max_vac.iloc[:5]
max_vac
```

```
                       Total
State
Maharashtra      1.403075e+09
Uttar Pradesh    1.200575e+09
Rajasthan        1.141163e+09
Gujarat          1.078261e+09
West Bengal      9.250227e+08
```

```
# Plotting the bar plot
plt.figure(figsize=(10, 5))
plt.title("Top 5 Vaccinated States in India", size=20)
x = sns.barplot(data=max_vac.iloc[:10], y=max_vac.Total,
x=max_vac.index,
              linewidth=2, edgecolor='blue')
plt.xlabel("States")
plt.ylabel("Vaccination")
plt.show()
```

Top 5 Vaccinated States in India