

```
[In [1]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import plotly.express as px
from plotly.subplots import make_subplots
from datetime import datetime

In [2]: covid_df = pd.read_csv("Downloads/covid_19_india.csv")

In [3]: covid_df.head(10)

Out[3]:
   Sno  Date      Time      StateUnionTerritory  ConfirmedIndianNational  ConfirmedForeignNational  Cured  Deaths  Confirmed
0  18075  8/1/2021  8:00 AM      Andaman and Nicobar Islands              -                    -              7412      129      7548
1  18076  8/1/2021  8:00 AM                        Andhra Pradesh              -                    -              1952736      13564      195182
2  18077  8/1/2021  8:00 AM                        Arunachal Pradesh              -                    -              47821      248      50605
3  18078  8/1/2021  8:00 AM                        Assam              -                    -              559684      5420      576149
4  18079  8/1/2021  8:00 AM                        Bihar              -                    -              715352      9646      725279
5  18080  8/1/2021  8:00 AM                        Chattisgarh              -                    -              61150      811      61992
6  18081  8/1/2021  8:00 AM                        Chhattisgarh              -                    -              988189      13544      1003356
7  18082  8/1/2021  8:00 AM      Dadra and Nagar Haveli and Daman and Diu              -                    -              10646      4      10654
8  18083  8/1/2021  8:00 AM                        Delhi              -                    -              1411280      25068      1436952
9  18084  8/1/2021  8:00 AM                        Goa              -                    -              167978      3164      172085

In [4]: covid_df.info()
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 18110 entries, 0 to 18109
Data columns (total 9 columns):
 #   Column              Non-Null Count  Dtype
---  --
0   Sno                 18110 non-null  int64
1   Date               18110 non-null  object
2   Time               18110 non-null  object
3   State/UnionTerritory 18110 non-null  object
4   ConfirmedIndianNational 18110 non-null  object
5   ConfirmedForeignNational 18110 non-null  object
6   Cured              18110 non-null  int64
7   Deaths            18110 non-null  int64
8   Confirmed          18110 non-null  int64
dtypes: int64(4), object(5)
memory usage: 1.2+ MB

In [5]: covid_df.describe()

Out[5]:
      Sno      Cured      Deaths      Confirmed
count  18110.000000  1.811000e+04  1.8110.000000  1.811000e+04
mean    9055.500000  2.786375e+05    4052.402264  3.102134e+05
std     5278.261023  6.140909e+05    10919.076411  6.561409e+05
min       1.000000  0.000000e+00    0.000000  0.000000e+00
25%    4528.250000  3.360250e+03    32.000000  4.376750e+03
50%    9055.500000  3.336400e+04    588.000000  3.977350e+04
75%    13582.750000  2.788698e+05    3643.750000  3.001498e+05
max    18110.000000  6.159676e+06   134201.000000  6.363442e+06

In [6]: vaccine_df = pd.read_csv("Downloads/covid_vaccine_statewise.csv")

In [7]: vaccine_df.head(7)

Out[7]:
   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)
0  16/01/2021  India      48276.0      3455.0      2957.0      48276.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
1  17/01/2021  India      58604.0      8532.0      4954.0      58604.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
2  18/01/2021  India      99449.0      13611.0      6583.0      99449.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
3  19/01/2021  India      195525.0      17855.0      7951.0      195525.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
4  20/01/2021  India      251280.0      25472.0      10504.0      251280.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
5  21/01/2021  India      365955.0      32226.0      12600.0      365955.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
6  22/01/2021  India      549381.0      36980.0      14115.0      549381.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
7 rows x 14 columns

In [8]: covid_df.drop(["Sno", "Time", "ConfirmedIndianNational", "ConfirmedForeignNational", inplace = True, axis = 1])

In [9]: covid_df.head()

Out[9]:
   Date      StateUnionTerritory  Cured  Deaths  Confirmed
0  8/1/2021  Andaman and Nicobar Islands      7412      129      7548
1  8/1/2021                        Andhra Pradesh      1952736      13564      195182
2  8/1/2021      Arunachal Pradesh      47821      248      50605
3  8/1/2021                        Assam      559684      5420      576149
4  8/1/2021                        Bihar      715352      9646      725279

In [10]: # Active Cases
covid_df['Active_Cases'] = covid_df['Confirmed'] - (covid_df['Cured'] + covid_df['Deaths'])
covid_df.tail()

Out[10]:
   Date      StateUnionTerritory  Cured  Deaths  Confirmed  Active_Cases
18105  2/2/2020      Kerala      0      0      3      3
18106  2/2/2020      Kerala      0      0      3      3
18107  2/1/2020      Kerala      0      0      2      2
18108  1/31/2020      Kerala      0      0      1      1
18109  1/30/2020      Kerala      0      0      1      1

In [11]: statewise = pd.pivot_table(covid_df, values=["Confirmed", "Deaths", "Cured"], index="State/UnionTerritory", aggfunc=max)

In [12]: statewise['Recovery Rate'] = statewise['Cured']/statewise['Confirmed']

In [13]: statewise['Mortality Rate'] = statewise["Deaths"]*100/statewise['Confirmed']

In [14]: statewise = statewise.sort_values(by='Confirmed', ascending=False)

In [15]: statewise.style.background_gradient(cmap = "BuPu")

Out[15]:
   Confirmed  Cured  Deaths  Recovery Rate  Mortality Rate
State/UnionTerritory
Maharashtra      6363442  6159676  134201  96.797865  2.108937
Maharashtra***  6229596  6000911  130753  96.329056  2.099900
Kerala      3586863  3396194  18004  94.688450  0.501967
Karnataka      2921049  2861499  36846  97.961349  1.261465
Karnataka      2863239  2621491  36197  97.796891  1.254569
Tamil Nadu      2579130  2524400  34367  97.877907  1.335504
Andhra Pradesh  1985182  1952736  13564  98.365309  0.683262
Uttar Pradesh  1708812  1685492  22775  98.635309  1.332797
West Bengal  1534999  1506532  18252  98.145471  1.189566
Delhi      1436852  1411280  25068  98.220276  1.744547
Chhattisgarh  1003356  988189  13544  98.483373  1.349670
Odisha      988997  972710  6565  98.353180  0.663804
Rajasthan      953851  944700  8954  99.040626  0.938721
Gujarat      825085  814802  10077  98.753704  1.221339
Madhya Pradesh  791980  781330  10514  98.655269  1.327659
Madhya Pradesh***  791656  780735  10506  98.620487  1.327992
Haryana      770114  759790  9652  98.659419  1.253231
Bihar      725279  715352  9646  98.631285  1.329971
Bihar***      715730  701294  9452  97.946655  1.520810
Telangana      680353  638410  3831  98.163813  0.569965
Punjab      599573  582791  16322  97.201008  2.722271
Assam      576149  559684  5420  97.142232  0.940729
Telangana      443360  362160  2312  81.685312  0.521472
Jharkhand      347440  342102  5130  98.463620  1.476514
Uttarakhand      342462  334650  7368  97.717871  2.151480
Jammu and Kashmir  322771  317081  4392  98.237140  1.360717
Himachal Pradesh  208616  202761  3537  97.191408  1.695460
Himanchal Pradesh  204516  200040  3507  97.811418  1.714780
Goa      172085  167978  3164  97.613399  1.838625
Puducherry      121766  119115  1800  97.822973  1.478455
Manipur      105424  96776  1664  91.798934  1.579388
Tripura      80660  77811  773  96.467890  0.959344
Meghalaya      69769  64157  1385  91.956913  1.688462
Chandigarh      61992  61150  811  98.641760  1.308233
Arunachal Pradesh  50605  47821  248  94.498567  0.490070
Mizoram      46320  33722  171  72.802245  0.369171
Nagaland      28811  26852  585  93.200514  2.030474
Sikkim      28018  25095  356  89.567421  1.270612
Ladakh      20411  20130  207  98.623911  1.037545
Dadra and Nagar Haveli and Daman and Diu  10654  10646  4  99.924911  0.037545
Dadra and Nagar Haveli  10377  10261  4  98.821143  0.038547
Lakshadweep      10263  10165  51  99.045114  0.496931
Cases being reassigned to states      9265  0  0  0.000000  0.000000
Andaman and Nicobar Islands      7548  7412  129  98.190191  1.709062
Unassigned      77  0  0  0.000000  0.000000
Daman & Diu      2  0  0  0.000000  0.000000

In [16]: # Top 10 Active Cases
Top_10_active = covid_df.groupby(by="State/UnionTerritory").max()[["Active_Cases", "Date"]].sort_values(by = ["Active_Cases"], ascending = False).reset_index()

In [17]: fig = plt.figure(figsize=(16,9))
<Figure size 1152x648 with 0 Axes>

In [18]: plt.title("Top 10 states with most active cases in India", size = 25)
Text(0.5, 1.0, 'Top 10 states with most active cases in India')

Out[18]:
Top 10 states with most active cases in india

0.8
0.6
0.4
0.2
0.0
0.0 0.2 0.4 0.6 0.8 1.0

In [19]: ax = sns.barplot(data=Top_10_active.iloc[:10], y="Active_Cases", x="State/UnionTerritory", linewidth=2, edgecolor='red')

Active_Cases
700000
600000
500000
400000
300000
200000
100000
0
MaharashtraKarnatakaKeralaTamil NaduUttar PradeshRajasthanAndhra PradeshGujaratWest BengalChhattisgarh
State/UnionTerritory

In [20]: Top_10_active = covid_df.groupby(by="State/UnionTerritory").max()[["Active_Cases", "Date"]].sort_values(by = ["Active_Cases"], ascending = False).reset_index()
fig = plt.figure(figsize=(16,9))
fig2 = plt.figure(figsize=(16,5))
ax = sns.lineplot(data=covid_df, x="State/UnionTerritory", y="Active_Cases", x="Date", size = 25)
ax.set_xlabel("States")
ax.set_ylabel("Total Active Cases")
plt.show()

Text(0, 0.5, 'Total Active Cases')

Out[20]:
Top 10 states with most active cases in india

700000
600000
500000
400000
300000
200000
100000
0
MaharashtraKarnatakaKeralaTamil NaduUttar PradeshRajasthanAndhra PradeshGujaratWest BengalChhattisgarh
States

In [21]: # Top States with highest deaths
Top_10_deaths = covid_df.groupby(by="State/UnionTerritory").max()[["Deaths", "Date"]].sort_values(by=["Deaths"], ascending=False).reset_index()
fig2 = plt.figure(figsize=(16,5))
plt.title("Top 10 states with most Deaths")
ax = sns.barplot(data=Top_10_deaths.iloc[:10], y="Deaths", x="State/UnionTerritory", linewidth=2, edgecolor='black')
plt.xlabel("States")
plt.ylabel("Total Deaths Cases")
plt.show()

Top 10 states with most Deaths

140000
120000
100000
80000
60000
40000
20000
0
MaharashtraMaharashtra***KarnatakaKarnatakaTamil NaduDelhiUttar PradeshWest BengalKeralaPunjabAndhra PradeshChhattisgarh
States

In [22]: # Growth Trend
fig2 = plt.figure(figsize=(12,6))
fig2 = 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 = 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")
SyntaxError: invalid syntax

In [23]: vaccine_df.head()

Out[23]:
   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)
0  16/01/2021  India      48276.0      3455.0      2957.0      48276.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
1  17/01/2021  India      58604.0      8532.0      4954.0      58604.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
2  18/01/2021  India      99449.0      13611.0      6583.0      99449.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
3  19/01/2021  India      195525.0      17855.0      7951.0      195525.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
4  20/01/2021  India      251280.0      25472.0      10504.0      251280.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
5 rows x 14 columns

In [24]: # rename column
vaccine_df.rename(columns={'Updated On': 'Vaccine_Date'}, inplace=True)

In [25]: vaccine_df.head(18)

Out[25]:
   Vaccine_Date  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)
0  16/01/2021  India      48276.0      3455.0      2957.0      48276.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
1  17/01/2021  India      58604.0      8532.0      4954.0      58604.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
2  18/01/2021  India      99449.0      13611.0      6583.0      99449.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
3  19/01/2021  India      195525.0      17855.0      7951.0      195525.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
4  20/01/2021  India      251280.0      25472.0      10504.0      251280.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
5  21/01/2021  India      365955.0      32226.0      12600.0      365955.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
6  22/01/2021  India      549381.0      37080.0      14115.0      549381.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
7  23/01/2021  India      759000.0      43076.0      15605.0      759000.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
8  24/01/2021  India      835050.0      49851.0      18111.0      835050.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
9  25/01/2021  India      1277104.0      55151.0      19882.0      1277104.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
10 rows x 14 columns

In [26]: vaccine_df.info()
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 7845 entries, 0 to 7844
Data columns (total 14 columns):
 #   Column              Non-Null Count  Dtype
---  --
0   Vaccine_Date        7845 non-null  object
1   State               7845 non-null  object
2   Total Doses Administered 7845 non-null  float64
3   Sessions            7845 non-null  float64
4   Sites               7845 non-null  float64
5   First Dose Administered 7845 non-null  float64
6   Second Dose Administered 7845 non-null  float64
7   Male (Doses Administered) 7845 non-null  float64
8   Female (Doses Administered) 7845 non-null  float64
9   Transgender (Doses Administered) 7845 non-null  float64
10  Covaxin (Doses Administered) 7845 non-null  float64
11  CovShield (Doses Administered) 7845 non-null  float64
12  Sputnik V (Doses Administered) 2995 non-null  float64
13  AEFI                 5438 non-null  float64
14  18-44 Years (Doses Administered) 1782 non-null  float64
15  45-60 Years (Doses Administered) 1782 non-null  float64
16  60+ Years (Doses Administered) 1782 non-null  float64
17  18-44 Years (Individuals Vaccinated) 3739 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) 169 non-null  float64
21  Female (Individuals Vaccinated) 169 non-null  float64
22  Transgender (Individuals Vaccinated) 169 non-null  float64
23  Total Individuals Vaccinated 5919 non-null  float64
dtypes: float64(22), object(2)
memory usage: 1.4+ MB

In [27]: vaccine_df.isnull().sum()

Out[27]:
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
CovShield (Doses Administered) 224
Sputnik V (Doses Administered) 4850
AEFI              2487
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) 4113
60+ Years (Individuals Vaccinated) 4113
Male (Individuals Vaccinated) 7685
Female (Individuals Vaccinated) 7685
Transgender (Individuals Vaccinated) 7685
Total Individuals Vaccinated 1926
dtype: int64

In [31]: vaccine = vaccine_df.drop(columns=['Sputnik V (Doses Administered)', 'AEFI', '18-44 Years (Doses Administered)', '45-60 Years (Doses Administered)', '60+ Years (Doses Administered)'])

In [32]: vaccination.head()

Out[32]:
   Vaccine_Date  State  Total Doses Administered  Sessions  Sites  First Dose Administered  Second Dose Administered  Male (Doses Administered)  Female (Doses Administered)  Transgender (Doses Administered)  Covaxin (Doses Administered)  CovShield (Doses Administered)  18-44 Years (Individuals Vaccinated)  45-60 Years (Individuals Vaccinated)  60+ Years (Individuals Vaccinated)  18-44 Years/Individuals Vaccinated)
0  16/01/2021  India      48276.0      3455.0      2957.0      48276.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
1  17/01/2021  India      58604.0      8532.0      4954.0      58604.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
2  18/01/2021  India      99449.0      13611.0      6583.0      99449.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
3  19/01/2021  India      195525.0      17855.0      7951.0      195525.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
4  20/01/2021  India      251280.0      25472.0      10504.0      251280.0      0.0      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
5 rows x 14 columns

In [33]: # 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

47%
53%
Male
Female

In [34]: # Remove rows where state = India
vaccine = vaccine_df[vaccine_df.State != 'India']
vaccination

Out[34]:
   Vaccine_Date  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)
212  16/01/2021  Andaman and Nicobar Islands      23.0      2.0      2.0      23.0      0.0      12.0      11.0      0.0      ...      NaN      NaN      NaN      NaN
213  17/01/2021  Andaman and Nicobar Islands      23.0      2.0      2.0      23.0      0.0      12.0      11.0      0.0      ...      NaN      NaN      NaN      NaN
214  18/01/2021  Andaman and Nicobar Islands      42.0      9.0      2.0      42.0      0.0      29.0      13.0      0.0      ...      NaN      NaN      NaN      NaN
215  19/01/2021  Andaman and Nicobar Islands      89.0      12.0      2.0      89.0      0.0      53.0      36.0      0.0      ...      NaN      NaN      NaN      NaN
216  20/01/2021  Andaman and Nicobar Islands      124.0      16.0      3.0      124.0      0.0      67.0      57.0      0.0      ...      NaN      NaN      NaN      NaN
...  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...  ...
7840  11/8/2021  West Bengal      NaN      NaN      NaN      NaN      NaN      NaN      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
7841  12/8/2021  West Bengal      NaN      NaN      NaN      NaN      NaN      NaN      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
7842  13/8/2021  West Bengal      NaN      NaN      NaN      NaN      NaN      NaN      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
7843  14/8/2021  West Bengal      NaN      NaN      NaN      NaN      NaN      NaN      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
7844  15/8/2021  West Bengal      NaN      NaN      NaN      NaN      NaN      NaN      NaN      NaN      NaN      ...      NaN      NaN      NaN      NaN
7633 rows x 14 columns

In [35]: vaccine.rename(columns={"Total Individuals Vaccinated" : 'Total'}, inplace=True)
vaccination.head()
C:\Users\aleman\AppData\Local\Temp\ipykernel_2832\2097798838.py:1: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame
See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy

Out[35]:
   Vaccine_Date  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)
212  16/01/2021  Andaman and Nicobar Islands      23.0      2.0      2.0      23.0      0.0      12.0      11.0      0.0      ...      NaN      NaN      NaN      NaN
213  17/01/2021  Andaman and Nicobar Islands      23.0      2.0      2.0      23.0      0.0      12.0      11.0      0.0      ...      NaN      NaN      NaN      NaN
214  18/01/2021  Andaman and Nicobar Islands      42.0      9.0      2.0      42.0      0.0      29.0      13.0      0.0      ...      NaN      NaN      NaN      NaN
215  19/01/2021  Andaman and Nicobar Islands      89.0      12.0      2.0      89.0      0.0      53.0      36.0      0.0      ...      NaN      NaN      NaN      NaN
216  20/01/2021  Andaman and Nicobar Islands      124.0      16.0      3.0      124.0      0.0      67.0      57.0      0.0      ...      NaN      NaN      NaN      NaN
5 rows x 14 columns

In [36]: # Most Vaccinated State
max_vac = vaccination.groupby(['State'])['Total'].sum().to_frame('Total')
x = sns.barplot(data=max_vac, x=max_vac.index, y=max_vac.Total, xmax=max_vac.index, linewidth=2, edgecolor='black')
plt.xlabel("State")
plt.ylabel("Vaccination")
plt.show()

Top 10 Vaccinated State in India

1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
MaharashtraUttar PradeshRajasthanWest BengalKarnatakaMadhya PradeshBiharKeralaAndhra Pradesh
State
Vaccination

In [37]:
```