```
import pandas as pd

import numpy as np

import matplotlib.pyplot as plt

import seaborn as sns

import warnings

warnings.filterwarnings("ignore")

df= pd.read_csv("country_vaccinations.csv")

df.head()
```

```
In [1]: runcell(0, 'C:/Users/muham/.spyder-py3/sidphase4.py')
Out[1]:
       country iso_code  ...                source_name            source_website
0  Afghanistan      AFG  ...  World Health Organization  https://covid19.who.int/
1  Afghanistan      AFG  ...  World Health Organization  https://covid19.who.int/
2  Afghanistan      AFG  ...  World Health Organization  https://covid19.who.int/
3  Afghanistan      AFG  ...  World Health Organization  https://covid19.who.int/
4  Afghanistan      AFG  ...  World Health Organization  https://covid19.who.int/

[5 rows x 15 columns]
```

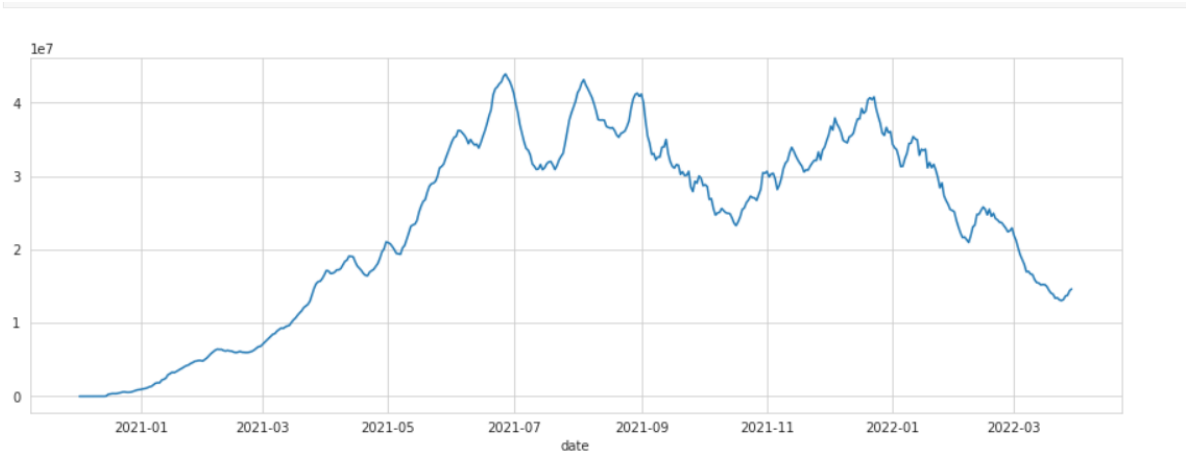
```
df.describe()
```

```
In [2]: runcell(0, 'C:/Users/muham/.spyder-py3/sidphase4.py')
Out[2]:
       total_vaccinations  ...  daily_vaccinations_per_million
count        4.360700e+04  ...                    86213.000000
mean         4.592964e+07  ...                     3257.049157
std          2.246004e+08  ...                     3934.312440
min          0.000000e+00  ...                        0.000000
25%          5.264100e+05  ...                      636.000000
50%          3.590096e+06  ...                     2050.000000
75%          1.701230e+07  ...                     4682.000000
max          3.263129e+09  ...                   117497.000000
```

```
df.dtypes
```

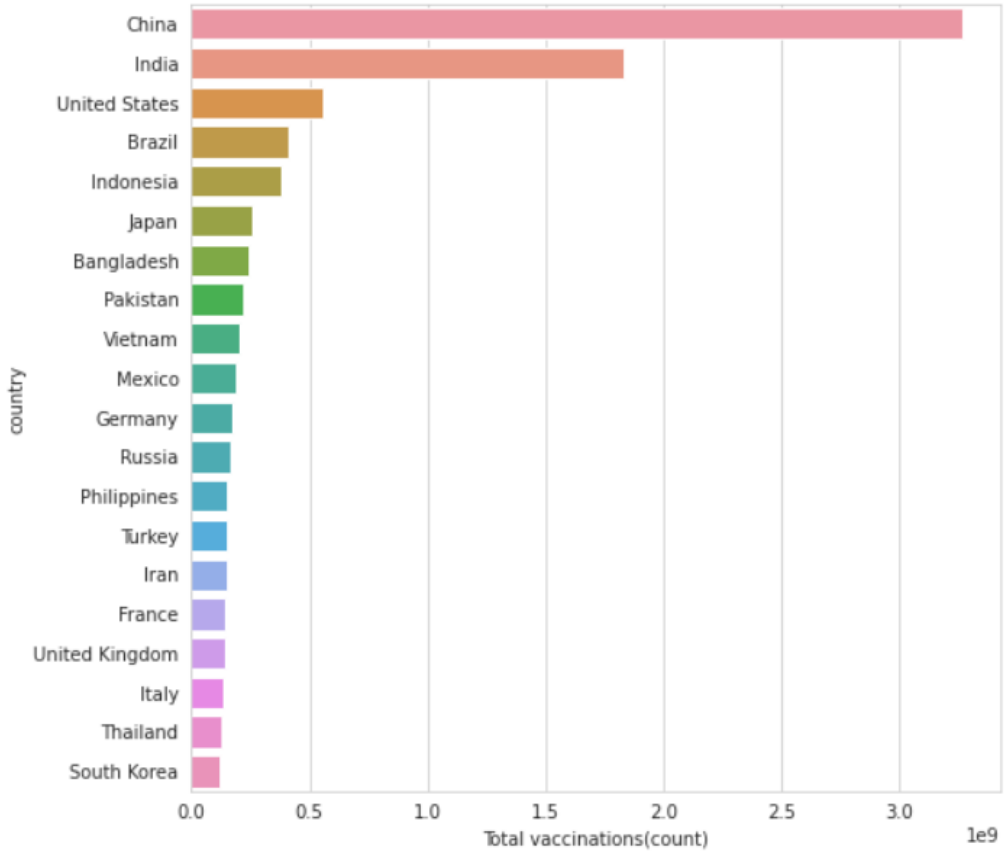
```
In [3]: runcell(0, 'C:/Users/muham/.spyder-py3/sidphase4.py')
Out[3]:
country                                object
iso_code                               object
date                                   object
total_vaccinations                    float64
people_vaccinated                     float64
people_fully_vaccinated               float64
daily_vaccinations_raw                float64
daily_vaccinations                    float64
total_vaccinations_per_hundred        float64
people_vaccinated_per_hundred         float64
people_fully_vaccinated_per_hundred   float64
daily_vaccinations_per_million        float64
vaccines                               object
source_name                            object
source_website                         object
dtype: object
```

```
df["date"]= pd.to_datetime(df.date)

x= df.groupby("date").daily_vaccinations.sum()

plt.figure(figsize= (15,5))

sns.lineplot(x.index,x.values)

plt.show()
```

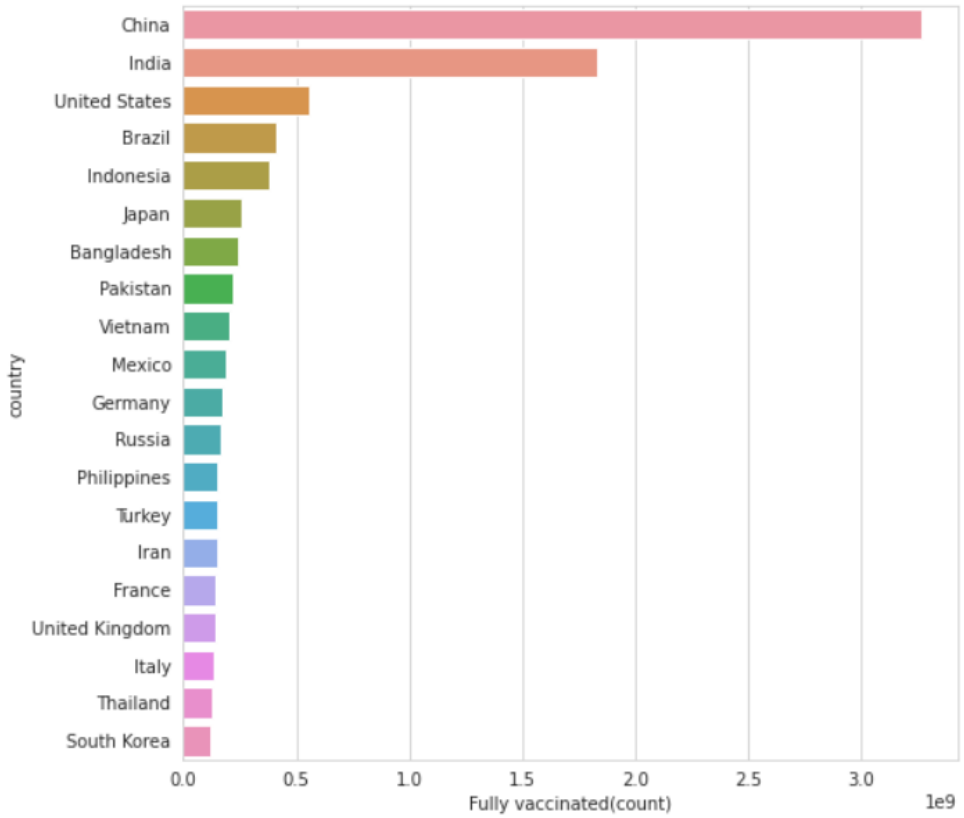



```
df["Total_vaccinations(count)"]= df.groupby("country").total_vaccinations.tail(1)

df.groupby("country")["Total_vaccinations(count)"].mean().sort_values(ascending= False).head(20)

x= df.groupby("country")["Total_vaccinations(count)"].mean().sort_values(ascending=
False).head(20)

sns.set_style("whitegrid")

plt.figure(figsize= (8,8))
```

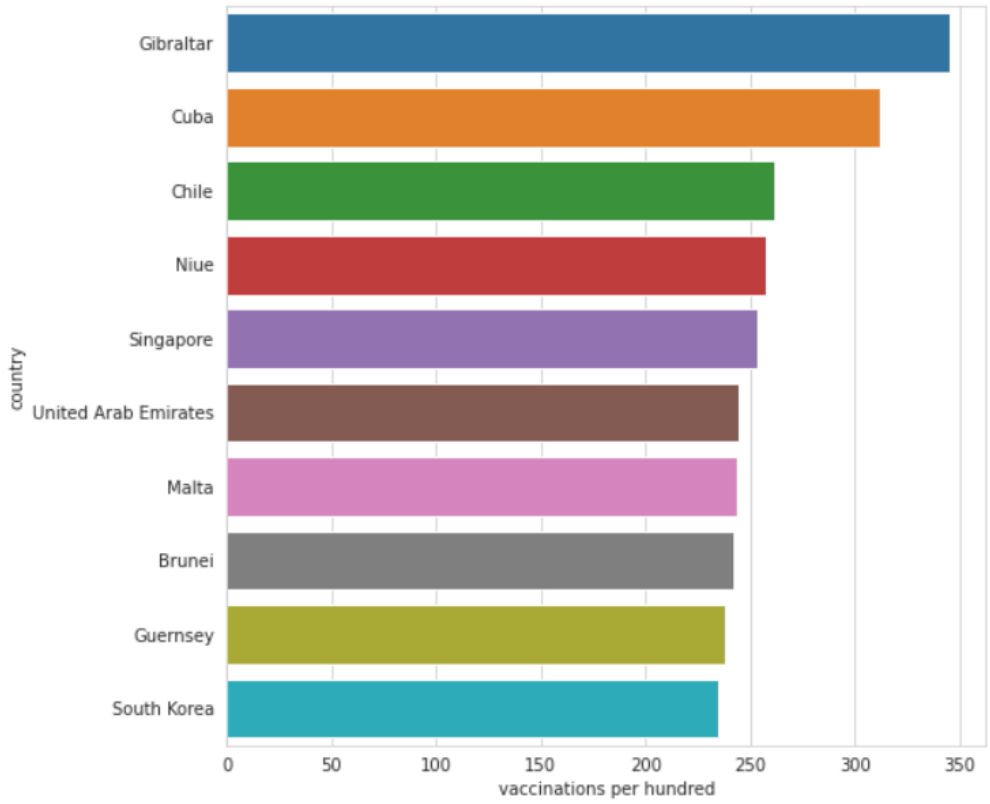
```
ax= sns.barplot(x.values,x.index)
ax.set_xlabel("Total vaccinations(count)")
plt.show()
```




```
df["Full_vaccinations(count)"]= df.groupby("country").people_fully_vaccinated.tail(1)
df.groupby("country")["Full_vaccinations(count)"].mean().sort_values(ascending= False).head(20)
sns.set_style("whitegrid")
plt.figure(figsize= (8,8))
ax= sns.barplot(x.values,x.index)
ax.set_xlabel("Fully vaccinated(count)")
plt.show()
```




```
x= df.groupby("country").daily_vaccinations.mean().sort_values(ascending= False).head(20)
x
plt.figure(figsize= (8,8))
ax= sns.barplot(x.values,x.index)
ax.set_xlabel("daily vaccinations(avg)")
plt.show()
```



Done by

SIDHARTH N

3rd year CSBS

JCT COLLEGE OF ENGINEERING AND TECHNOLOGY