COVID-19 Vaccines Analysis

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Course Name-Applied data science

Phase-IV

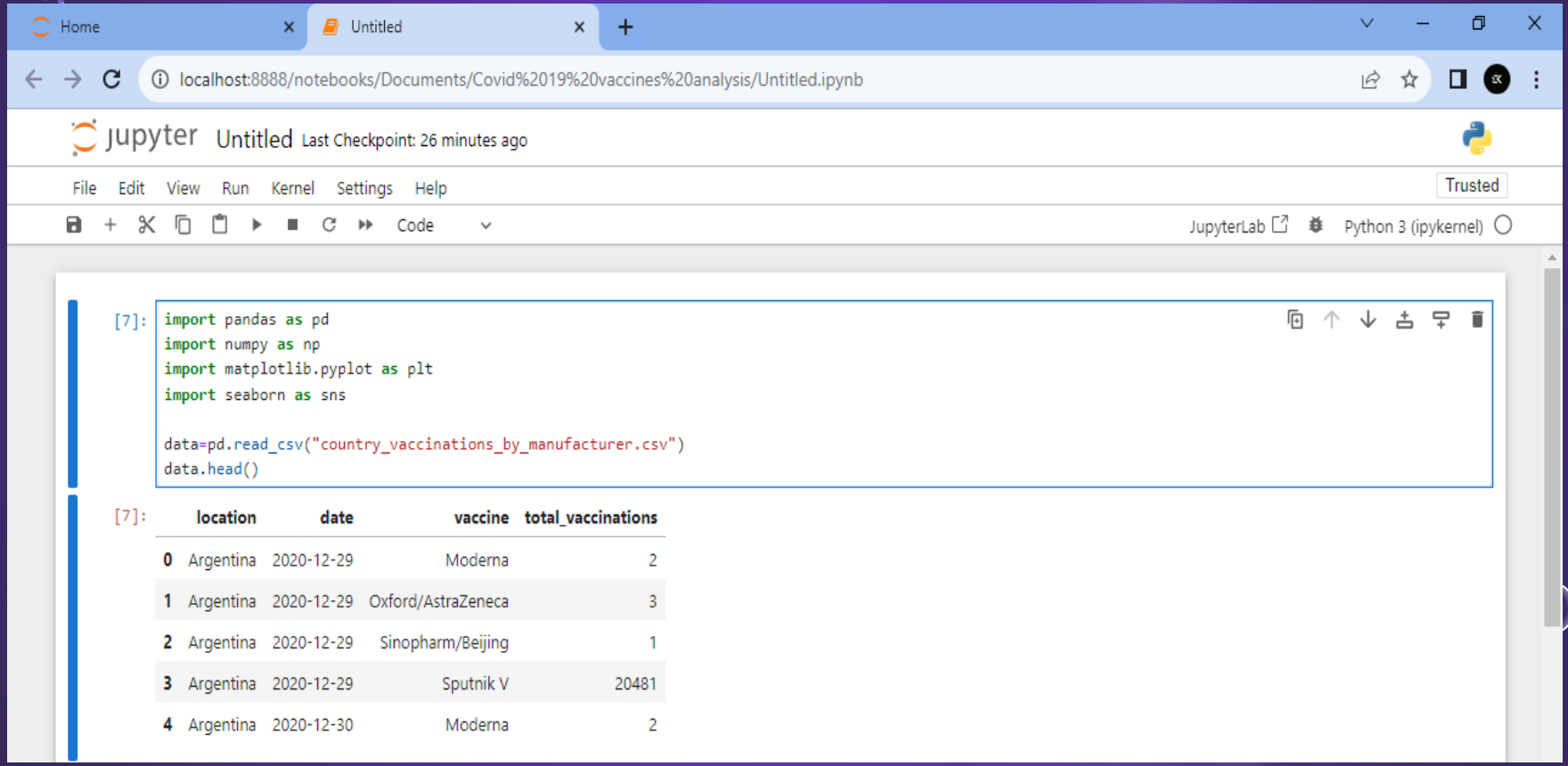
Phase 4: Development Part 2

In this part you will continue building your project.

Continue conducting the Covid-19 vaccines analysis by:

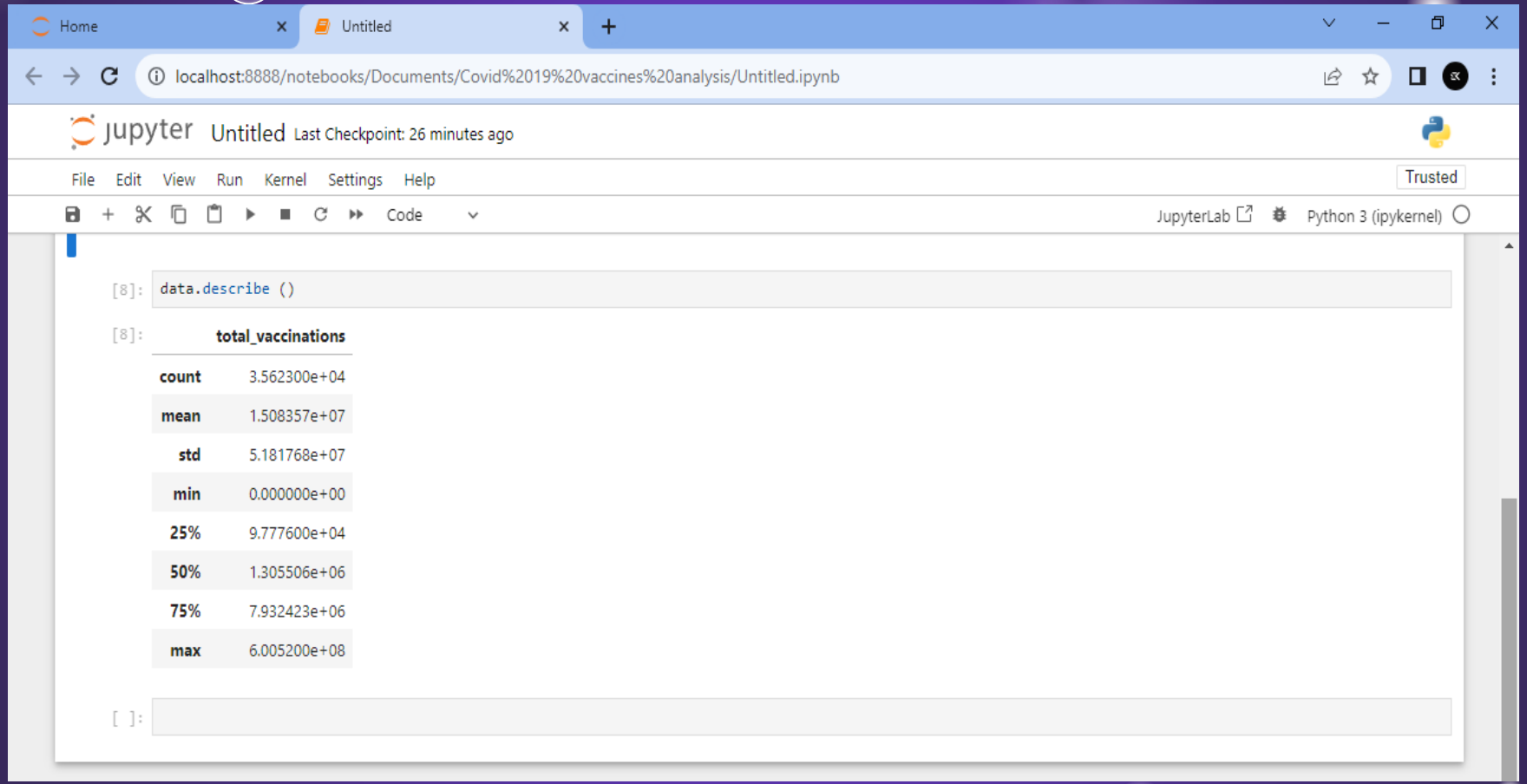
- ❑ Performing exploratory data analysis
- ❑ Statistical analysis
- ❑ Visualization.

Performing exploratory data analysis



	location	date	vaccine	total_vaccinations
0	Argentina	2020-12-29	Moderna	2
1	Argentina	2020-12-29	Oxford/AstraZeneca	3
2	Argentina	2020-12-29	Sinopharm/Beijing	1
3	Argentina	2020-12-29	Sputnik V	20481
4	Argentina	2020-12-30	Moderna	2

Data describe



	total_vaccinations
count	3.562300e+04
mean	1.508357e+07
std	5.181768e+07
min	0.000000e+00
25%	9.777600e+04
50%	1.305506e+06
75%	7.932423e+06
max	6.005200e+08

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Code

JupyterLab Python 3 (ipykernel)

2	Argentina	2020-12-29	Sinopharm/Beijing	1
3	Argentina	2020-12-29	Sputnik V	20481
4	Argentina	2020-12-30	Moderna	2

[16]:
```
df=data["location"]
df.head()
```

[16]:
```
0    Argentina
1    Argentina
2    Argentina
3    Argentina
4    Argentina
Name: location, dtype: object
```

[ ]:

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Code

JupyterLab Python 3 (ipykernel)

1	Argentina	2020-12-29	Oxford/AstraZeneca	3
2	Argentina	2020-12-29	Sinopharm/Beijing	1
3	Argentina	2020-12-29	Sputnik V	20481
4	Argentina	2020-12-30	Moderna	2

[20]:
```
df=data["date"]
df.head()
```

[20]:
```
0    2020-12-29
1    2020-12-29
2    2020-12-29
3    2020-12-29
4    2020-12-30
Name: date, dtype: object
```

[ ]:

Click to add a cell.

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Code

JupyterLab Python 3 (ipykernel)

[20]:
```
df=data["date"]
df.head()
```

[20]:
```
0    2020-12-29
1    2020-12-29
2    2020-12-29
3    2020-12-29
4    2020-12-30
Name: date, dtype: object
```

[21]:
```
df=data["vaccine"]
df.head()
```

[21]:
```
0             Moderna
1    Oxford/AstraZeneca
2     Sinopharm/Beijing
3             Sputnik V
4             Moderna
Name: vaccine, dtype: object
```

[ ]:

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Code

JupyterLab Python 3 (ipykernel)

[20]:
```
df=data["date"]
df.head()
```

[20]:
```
0    2020-12-29
1    2020-12-29
2    2020-12-29
3    2020-12-29
4    2020-12-30
Name: date, dtype: object
```

[28]:
```
df=data[["vaccine","total_vaccinations"]]
df.head()
```

[28]:

	vaccine	total_vaccinations
0	Moderna	2
1	Oxford/AstraZeneca	3
2	Sinopharm/Beijing	1
3	Sputnik V	20481
4	Moderna	2

[ ]:

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Code

JupyterLab Python 3 (ipykernel)

3	Sputnik V	20481
4	Moderna	2

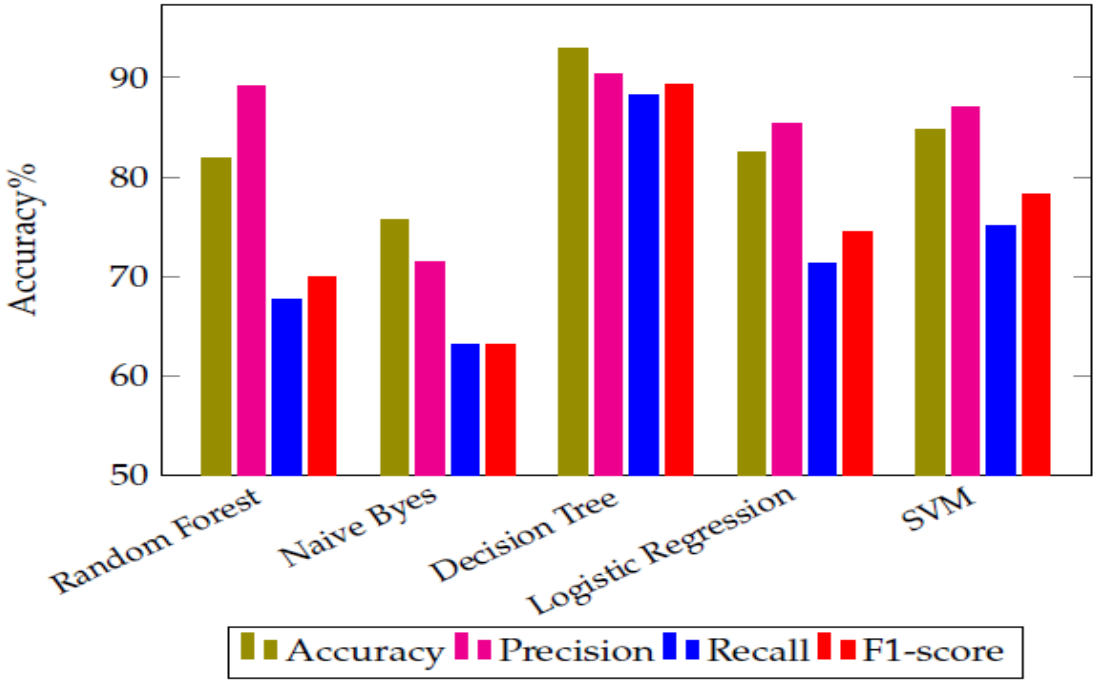
[29]:
```
df=data[["location","date"]]
df.head()
```

[29]:

	location	date
0	Argentina	2020-12-29
1	Argentina	2020-12-29
2	Argentina	2020-12-29
3	Argentina	2020-12-29
4	Argentina	2020-12-30

[ ]:

Statistical analysis



Bar chart
Statistical analysis

Line graph for statistical analysis

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localhost:8888/notebooks/Documents%2FCovid%2019%20vaccines%20analysis%2FCovid%2019%20vaccines%20analysis.ipynb#Describe-the-Data

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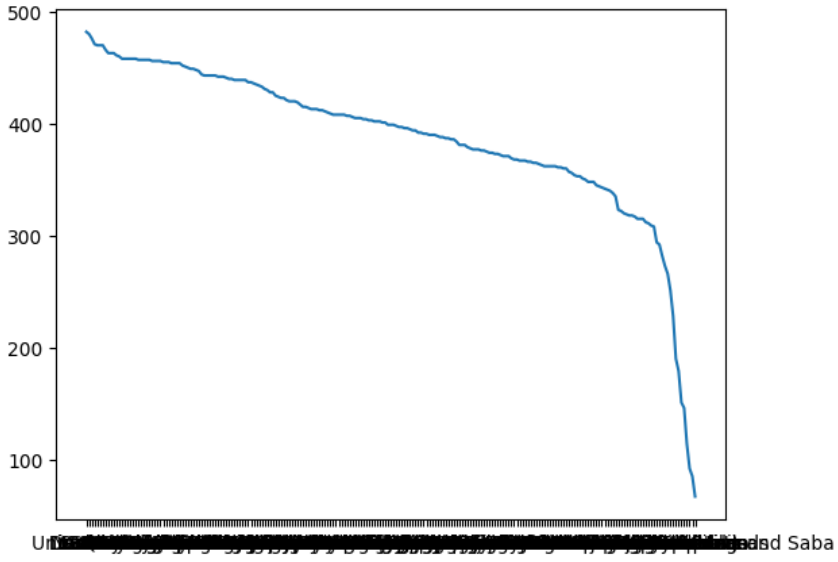
Code

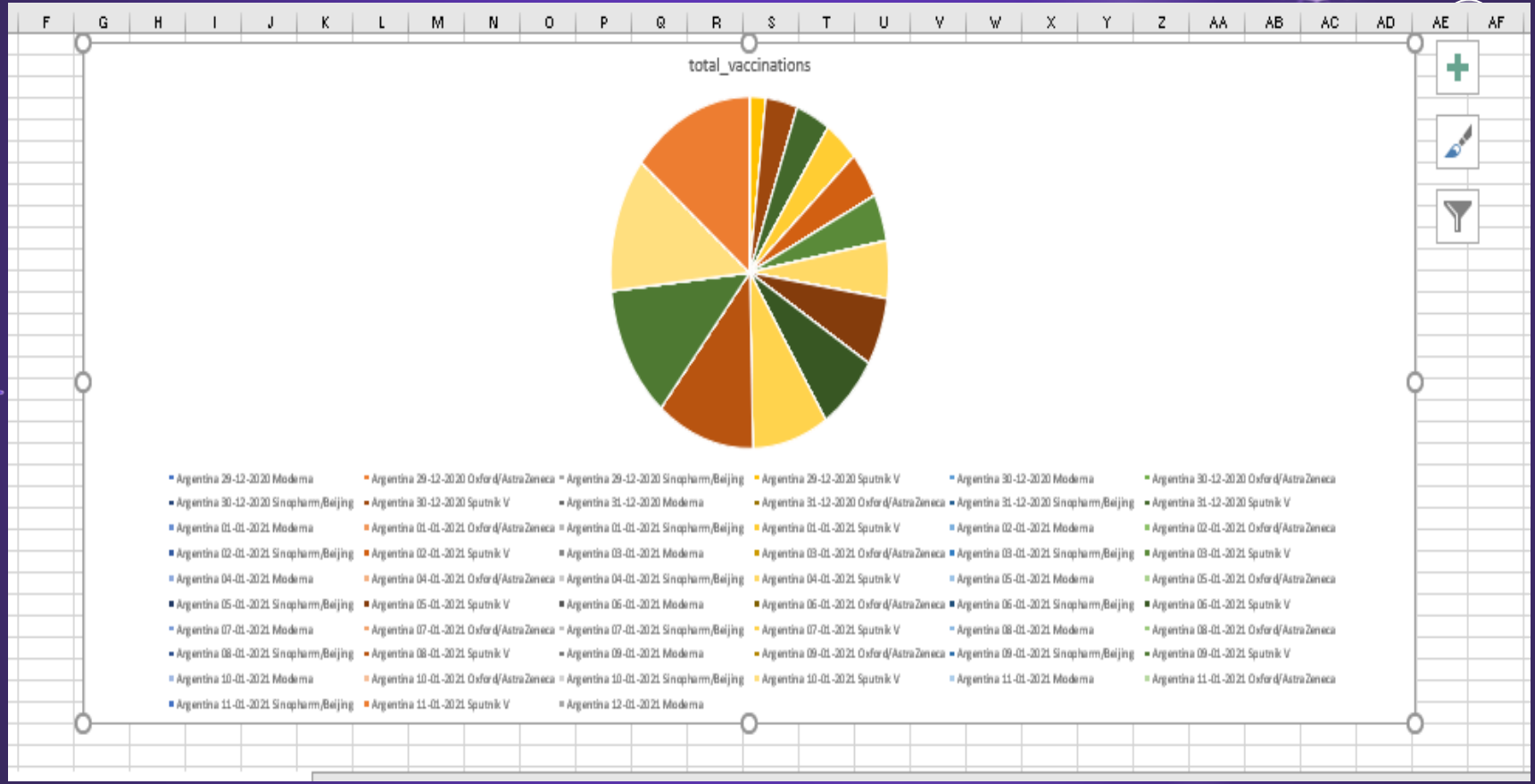
JupyterLab Python 3 (ipykernel)

[22]:
```
plt.plot(data.country.value_counts())
```

[22]:
```
[<matplotlib.lines.Line2D at 0x2de8f7d4cd0>]
```



Pie chart for statistical analysis



Line plot for statistical analysis

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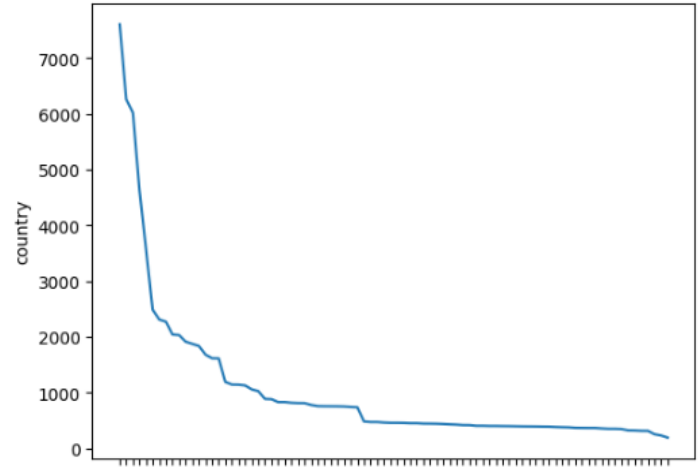
Code

JupyterLab Python 3 (ipykernel)

[34]:
```
plt.xlabel("vaccines")
plt.ylabel("country")
plt.plot(data.vaccines.value_counts())
plt.show()
```



Visualization

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Run Code

In [16]:
```
import plotly.express as px
import plotly.offline as py

v_map=px.choropleth(data, locations='iso_code', color='vaccines')
v_map.update_layout(height=500)

v_map.show()
```

Qazvac, Sinopharm/Hayatvax, Sputnik V
Johnson&Johnson, Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing, Sinovac, Sputnik V
Johnson&Johnson, Moderna, Oxford/AstraZeneca, Pfizer/BioNTech, Sinovac, Sputnik V
Pfizer/BioNTech, Sinopharm/Beijing
Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing
CanSino, Johnson&Johnson, Oxford/AstraZeneca, Pfizer/BioNTech, Sinovac, Sputnik V
Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing, Sinovac, Sputnik V
CanSino, Oxford/AstraZeneca, Sinopharm/Beijing, Sinovac, Sputnik V
Moderna, Oxford/AstraZeneca, Pfizer/BioNTech, Sputnik V
Covaxin, Oxford/AstraZeneca, Sinopharm/Beijing, Sinovac, Sputnik V
EpiVacCorona, Sputnik V
Pfizer/BioNTech, Sputnik V
Moderna, Pfizer/BioNTech, Sinovac
Moderna, Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing, Sputnik V
EpiVacCorona, Oxford/AstraZeneca, Sinopharm/Beijing, Sputnik V
Moderna, Oxford/AstraZeneca, Pfizer/BioNTech, Sinovac
Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing, Sinopharm/Wuhan, Sputnik V
Oxford/AstraZeneca, RBD-Dimer, Sputnik V
Sinopharm/Beijing, Sinovac, Sputnik V

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Run | Code

Oxford/AstraZeneca, Pfizer/BioNTech, Sinovac, Sputnik V
Sputnik V
Oxford/AstraZeneca, Pfizer/BioNTech
Oxford/AstraZeneca
Oxford/AstraZeneca, Sinopharm/Beijing, Sputnik V
Oxford/AstraZeneca, Sinovac, Sputnik V
Pfizer/BioNTech
Johnson&Johnson, Moderna, Oxford/AstraZeneca, Pfizer/BioNTech
Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing, Sputnik V
Moderna, Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing
Sinopharm/Beijing, Sputnik V
Oxford/AstraZeneca, Sinopharm/Beijing
Oxford/AstraZeneca, Sinovac
Moderna, Oxford/AstraZeneca, Pfizer/BioNTech
Moderna, Pfizer/BioNTech
Johnson&Johnson, Oxford/AstraZeneca, Pfizer/BioNTech, Sinovac
Oxford/AstraZeneca, Sinopharm/Beijing, Sinovac
Covaxin, Oxford/AstraZeneca
Sinopharm/Beijing
CanSino, Oxford/AstraZeneca, Pfizer/BioNTech, Sinovac
CanSino, Sinopharm/Beijing, Sinopharm/Wuhan, Sinovac
Oxford/AstraZeneca, Pfizer/BioNTech, Sinovac
Covaxin, Oxford/AstraZeneca, Sinopharm/Beijing
Moderna, Oxford/AstraZeneca, Sinopharm/Beijing, Sputnik V
Abdala, Soberana02
Johnson&Johnson, Moderna, Pfizer/BioNTech
Oxford/AstraZeneca, Sinopharm/Beijing, Sinovac, Sputnik V
Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing, Sinovac
Johnson&Johnson, Pfizer/BioNTech

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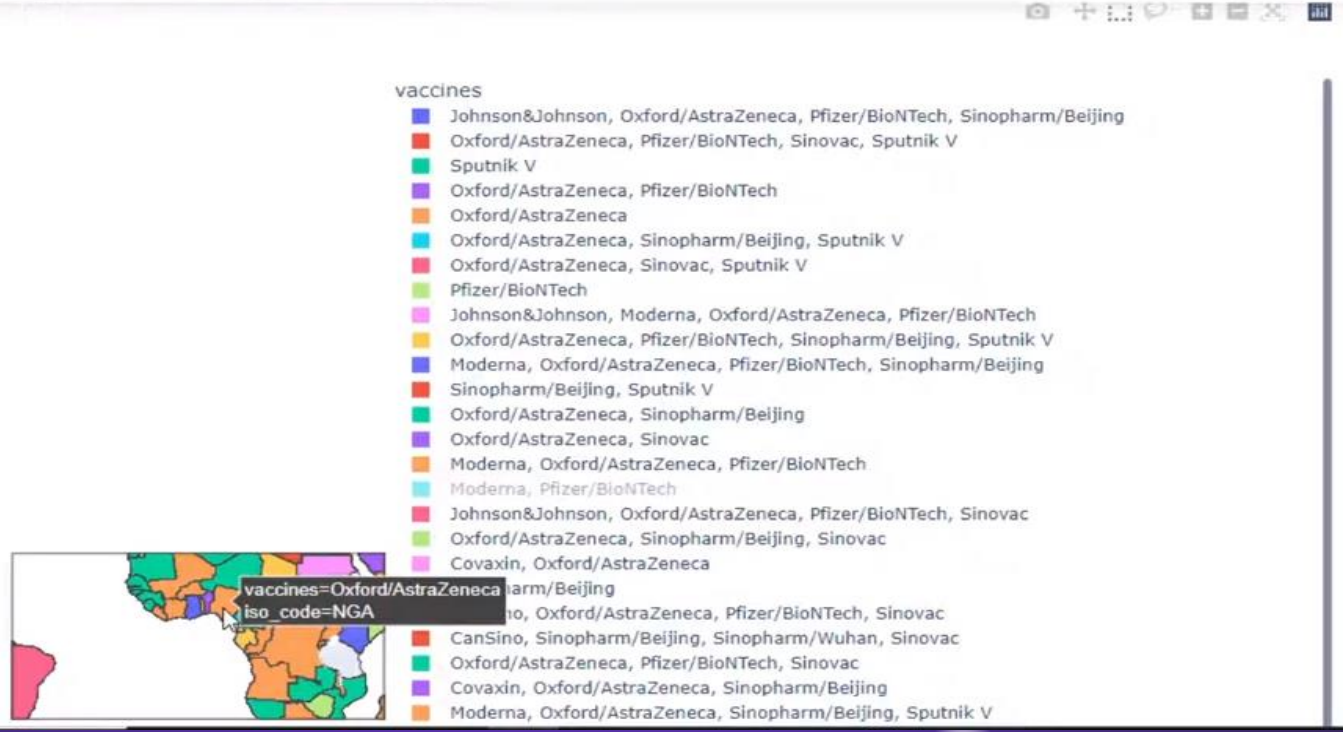

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Run | Code

Qazvac, Sinopharm/Hayatvax, Sputnik V
Johnson&Johnson, Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing, Sinovac, Sputnik V
Johnson&Johnson, Moderna, Oxford/AstraZeneca, Pfizer/BioNTech, Sinovac, Sputnik V
Pfizer/BioNTech, Sinopharm/Beijing
Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing
CanSino, Johnson&Johnson, Oxford/AstraZeneca, Pfizer/BioNTech, Sinovac, Sputnik V
Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing, Sinovac, Sputnik V
CanSino, Oxford/AstraZeneca, Sinopharm/Beijing, Sinovac, Sputnik V
Moderna, Oxford/AstraZeneca, Pfizer/BioNTech, Sputnik V
Covaxin, Oxford/AstraZeneca, Sinopharm/Beijing, Sinovac, Sputnik V
EpiVacCorona, Sputnik V
Pfizer/BioNTech, Sputnik V
Moderna, Pfizer/BioNTech, Sinovac
Moderna, Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing, Sputnik V
EpiVacCorona, Oxford/AstraZeneca, Sinopharm/Beijing, Sputnik V
Moderna, Oxford/AstraZeneca, Pfizer/BioNTech, Sinovac
Oxford/AstraZeneca, Pfizer/BioNTech, Sinopharm/Beijing, Sinopharm/Wuhan, Sputnik V
Oxford/AstraZeneca, RBD-Dimer, Sputnik V
Sinopharm/Beijing, Sinovac, Sputnik V

- [x] Performing exploratory data analysis
- [x] Statistical analysis
- [x] Visualization

So these all are Covid-19 vaccines is analyzed.