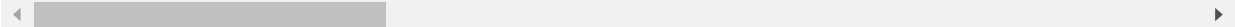


```
In [1]: import pandas as pd
import pylab as pl
import numpy as np
```

```
In [8]: COVID19NA = pd.read_csv('COVID-19_World.csv')
COVID19NA.head()
```

```
Out[8]:
```

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	REPORT_DATE	CON'
0	NaN	167	New Brunswick	2020-07-14	
1	NaN	36	Prince Edward Island	2020-07-14	
2	NaN	5	Northwest Territories	2020-07-14	
3	NaN	11	Yukon	2020-07-14	
4	NaN	314	Manitoba	2020-07-08	



```
In [9]: print(COVID19NA['COUNTRY_SHORT_NAME'].values)

['Canada' 'Canada' 'Canada' ... 'United States' 'United States'
 'United States']
```

```
In [10]: COVID19NA.shape
```

```
Out[10]: (609958, 13)
```

```
In [11]: COVID19NA.isnull().sum()
```

```
Out[11]: COUNTY_NAME          42182
PEOPLE_POSITIVE_CASES_COUNT      0
PROVINCE_STATE_NAME          40194
REPORT_DATE                     0
CONTINENT_NAME                  0
DATA_SOURCE_NAME                0
PEOPLE_DEATH_NEW_COUNT           0
COUNTY_FIPS_NUMBER            51862
COUNTRY_ALPHA_3_CODE             0
COUNTRY_SHORT_NAME               0
COUNTRY_ALPHA_2_CODE            198
PEOPLE_POSITIVE_NEW_CASES_COUNT   0
PEOPLE_DEATH_COUNT               0
dtype: int64
```

```
In [12]: #Deleteing/dropping some columns with NA/null cells
columns_to_delete = ['COUNTY_FIPS_NUMBER', 'COUNTRY_ALPHA_2_CODE']
COVID19NA.drop(columns_to_delete, inplace=True, axis=1)
COVID19NA.head()
```

```
Out[12]:
```

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	REPORT_DATE	CON
0	NaN	167	New Brunswick	2020-07-14	
1	NaN	36	Prince Edward Island	2020-07-14	
2	NaN	5	Northwest Territories	2020-07-14	
3	NaN	11	Yukon	2020-07-14	
4	NaN	314	Manitoba	2020-07-08	

```
In [13]: COVID19NA.dtypes
```

```
Out[13]: COUNTY_NAME                object
PEOPLE_POSITIVE_CASES_COUNT        int64
PROVINCE_STATE_NAME                object
REPORT_DATE                        object
CONTINENT_NAME                     object
DATA_SOURCE_NAME                   object
PEOPLE_DEATH_NEW_COUNT              int64
COUNTRY_ALPHA_3_CODE               object
COUNTRY_SHORT_NAME                  object
PEOPLE_POSITIVE_NEW_CASES_COUNT     int64
PEOPLE_DEATH_COUNT                  int64
dtype: object
```

```
In [14]: COVID19NA['REPORT_DATE'].head()
```

```
Out[14]: 0    2020-07-14
1    2020-07-14
2    2020-07-14
3    2020-07-14
4    2020-07-08
Name: REPORT_DATE, dtype: object
```

```
In [15]: #converting the report_dat to datetime stamp datatype
COVID19NA['REPORT_DATE'] = pd.to_datetime(COVID19NA['REPORT_DATE'])
COVID19NA['REPORT_DATE'].head()
```

```
Out[15]: 0    2020-07-14
1    2020-07-14
2    2020-07-14
3    2020-07-14
4    2020-07-08
Name: REPORT_DATE, dtype: datetime64[ns]
```

```
In [16]: #confirming the change  
COVID19NA.dtypes
```

```
Out[16]: COUNTY_NAME                object  
PEOPLE_POSITIVE_CASES_COUNT        int64  
PROVINCE_STATE_NAME                object  
REPORT_DATE                        datetime64[ns]  
CONTINENT_NAME                     object  
DATA_SOURCE_NAME                   object  
PEOPLE_DEATH_NEW_COUNT              int64  
COUNTRY_ALPHA_3_CODE               object  
COUNTRY_SHORT_NAME                 object  
PEOPLE_POSITIVE_NEW_CASES_COUNT     int64  
PEOPLE_DEATH_COUNT                 int64  
dtype: object
```

```
In [17]: #Checking the datestamp  
mask = (COVID19NA['REPORT_DATE'] > '2019-12-31') & (COVID19NA['REPORT_DATE'] <= '20  
20-12-31')  
COVID19NA.loc[mask].shape
```

```
Out[17]: (609755, 11)
```

```
In [18]: #drop duplicate rows  
#COVID19NA.drop_duplicates(inplace=True)  
#don't need to drop duplicate rows  
COVID19NA.shape
```

```
Out[18]: (609958, 11)
```

```
In [19]: COVID19NA.isnull().sum()
```

```
Out[19]: COUNTY_NAME                42182  
PEOPLE_POSITIVE_CASES_COUNT         0  
PROVINCE_STATE_NAME                40194  
REPORT_DATE                        0  
CONTINENT_NAME                     0  
DATA_SOURCE_NAME                   0  
PEOPLE_DEATH_NEW_COUNT              0  
COUNTRY_ALPHA_3_CODE               0  
COUNTRY_SHORT_NAME                 0  
PEOPLE_POSITIVE_NEW_CASES_COUNT     0  
PEOPLE_DEATH_COUNT                 0  
dtype: int64
```

```
In [20]: COVID19NA.describe()
```

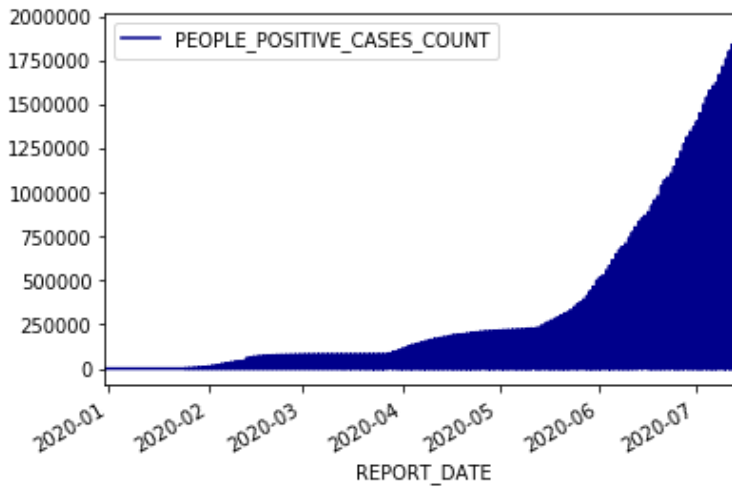
```
Out[20]:
```

	PEOPLE_POSITIVE_CASES_COUNT	PEOPLE_DEATH_NEW_COUNT	PEOPLE_POSITIVE_NEW_CASE
count	6.099580e+05	609958.000000	609958.000000
mean	1.033965e+03	0.947364	0.947364
std	1.579638e+04	19.331018	19.331018
min	0.000000e+00	-1918.000000	-1918.000000
25%	0.000000e+00	0.000000	0.000000
50%	4.000000e+00	0.000000	0.000000
75%	5.900000e+01	0.000000	0.000000
max	1.926824e+06	2004.000000	2004.000000

Visualization

```
In [21]: import matplotlib.pyplot as plt
```

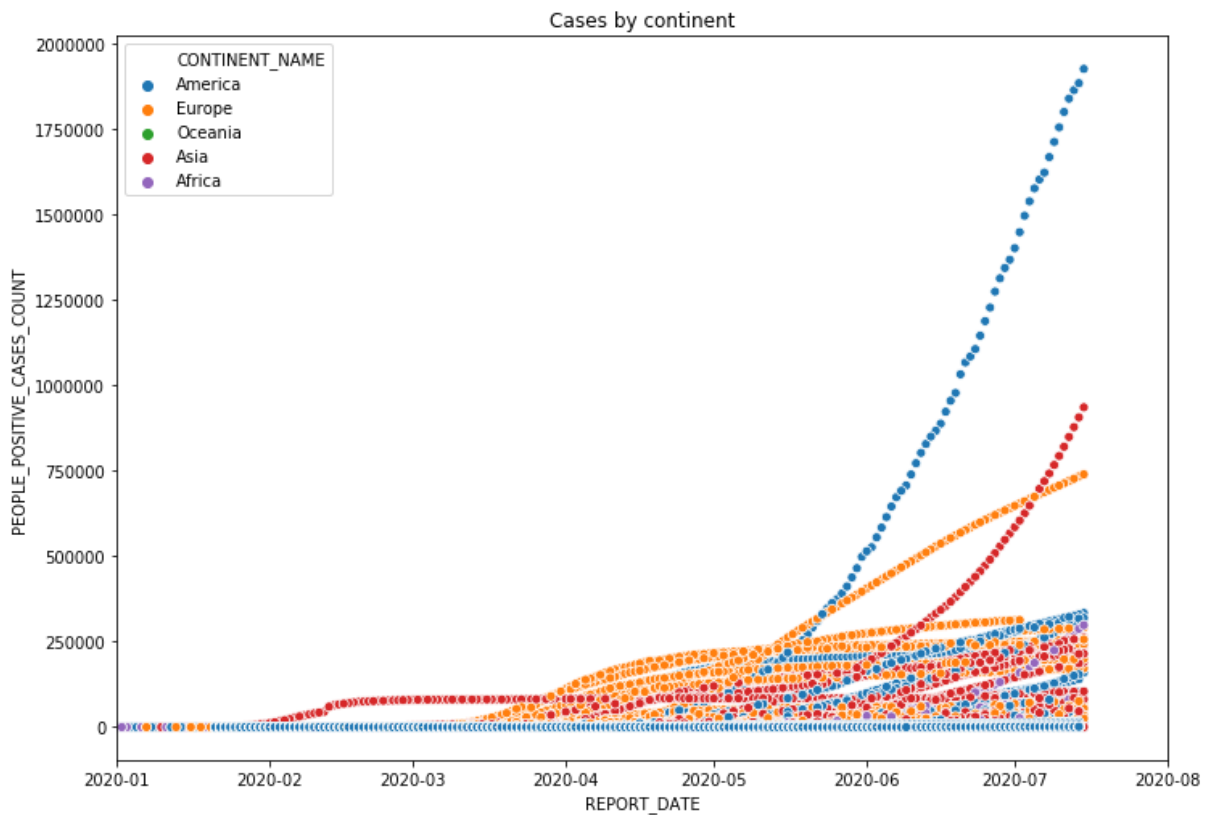
```
In [22]: plot1 = COVID19NA.plot(x='REPORT_DATE',  
                                y='PEOPLE_POSITIVE_CASES_COUNT',  
                                c='DarkBlue')
```



```
In [23]: import seaborn as sns
```

```
In [24]: #plot by country
fig, ax = plt.subplots()
#size of A4 paper
fig.set_size_inches(11.7, 8.27)
sns.scatterplot(data=COVID19NA, x="REPORT_DATE", y="PEOPLE_POSITIVE_CASES_COUNT", hue="CONTINENT_NAME", ax=ax)
#palette='nipy_spectral')
#set limit of the report date on x axis
ax.set(xlim=('2020-01', '2020-08'))
#setting the title of the figure
ax.set(title=("COVID-19 cases by continent"))

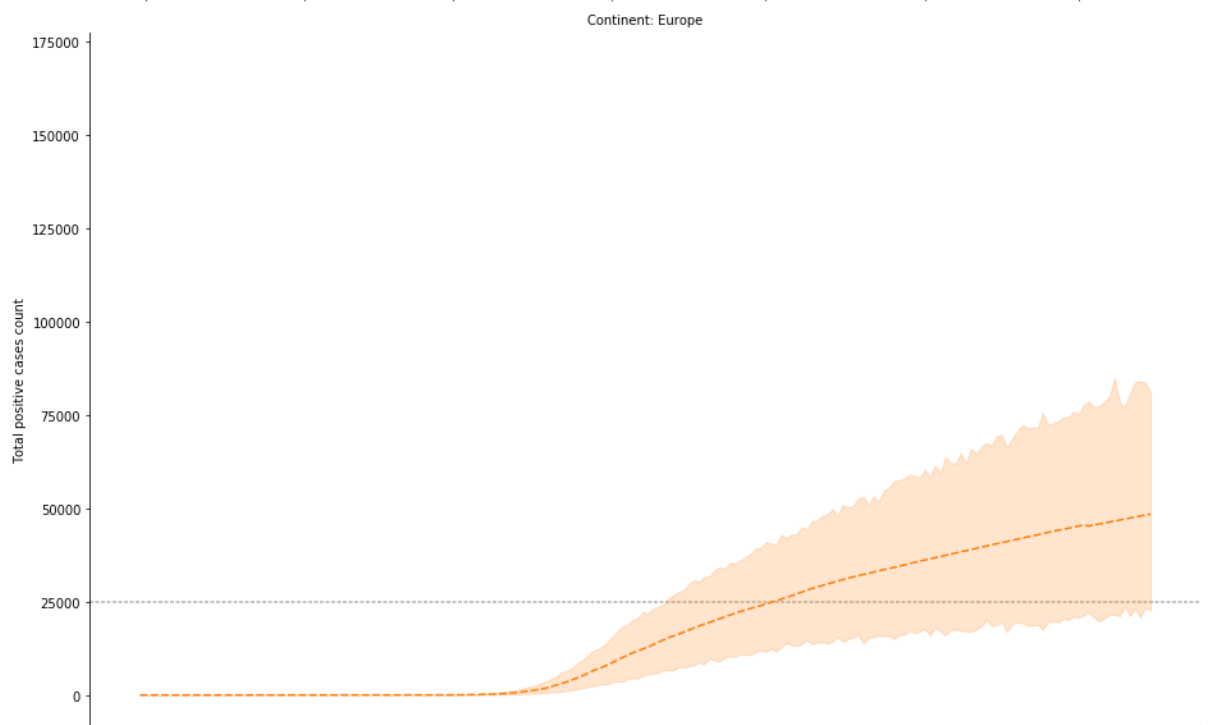
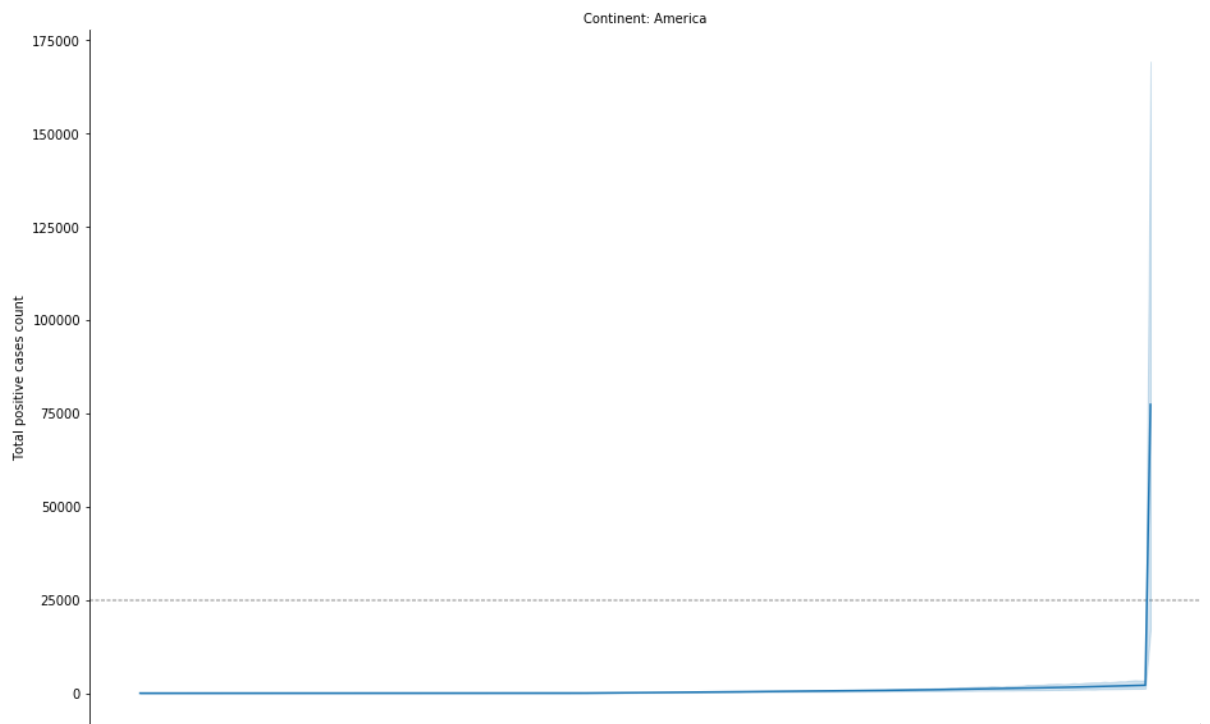
#save file and image, remember to rename file name otherwise, it will rewrite
plt.savefig('COVID_19_1.png')
plt.show()
```



```
In [25]: countries = sorted(COVID19NA['COUNTRY_SHORT_NAME'].unique())
print(len(countries))
```

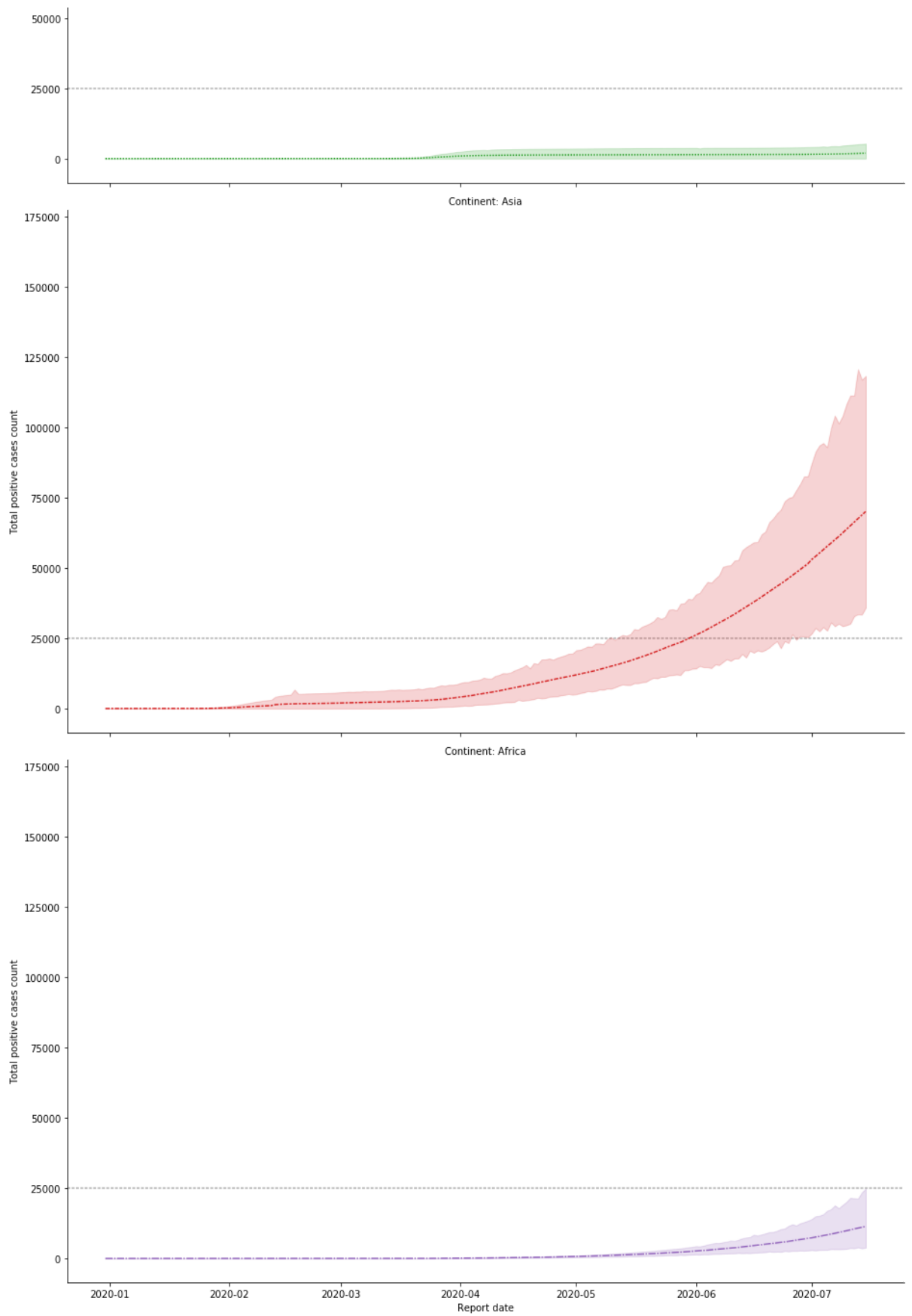
205

```
In [26]: #Plot total positive case count by continent
P2=sns.relplot(data=COVID19NA, x="REPORT_DATE", y="PEOPLE_POSITIVE_CASES_COUNT", hue="CONTINENT_NAME", style="CONTINENT_NAME",
               col="CONTINENT_NAME", col_wrap=1, kind="line", height=8, aspect=1.4)
(P2.map(plt.axhline, y=25000, color=".7", dashes=(2, 1), zorder=0)
 .set_axis_labels("Report date", "Total positive COVID-19 cases count")
 .set_titles("Continent: {col_name}"))
plt.savefig('COVID_19_2.png')
```

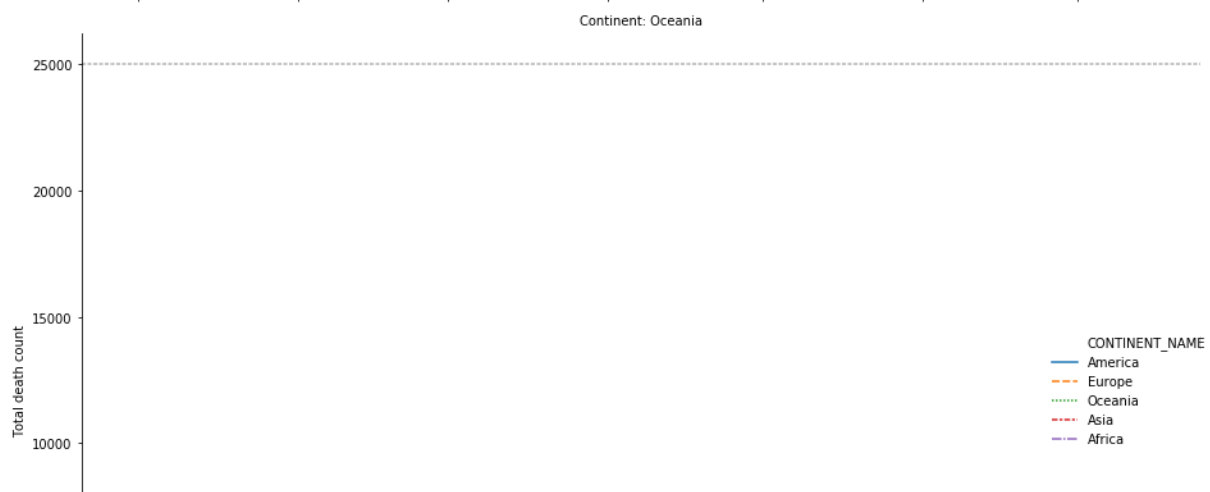
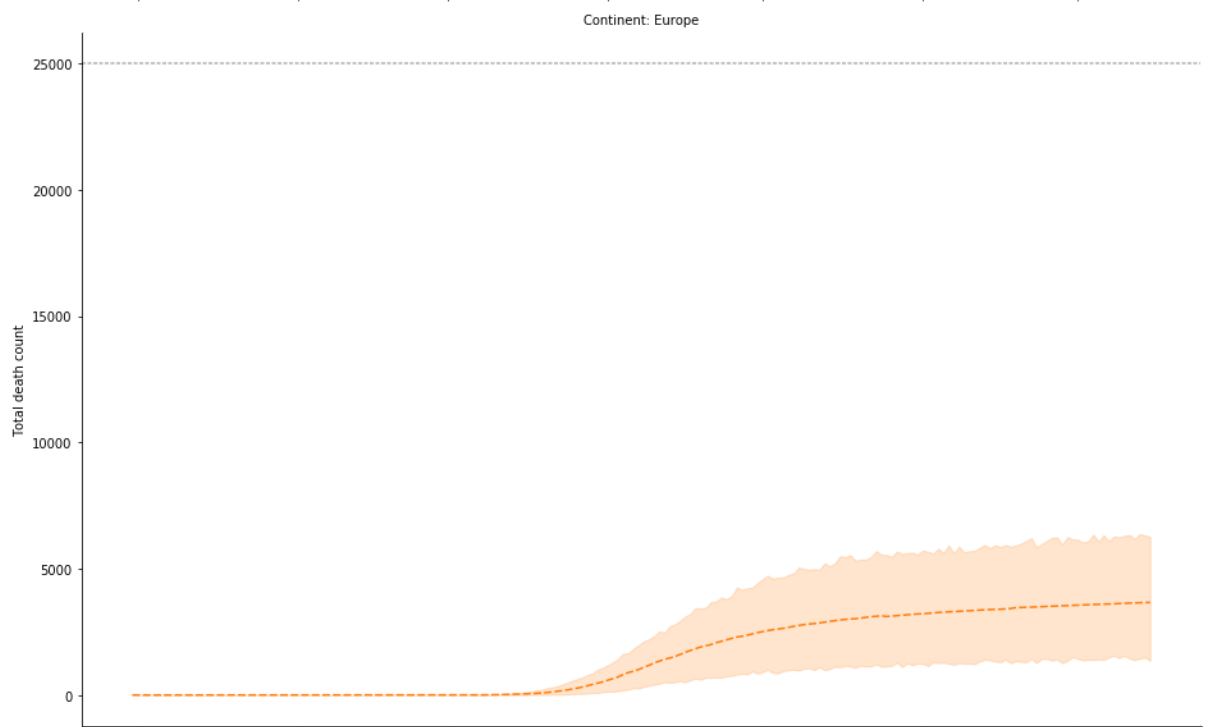
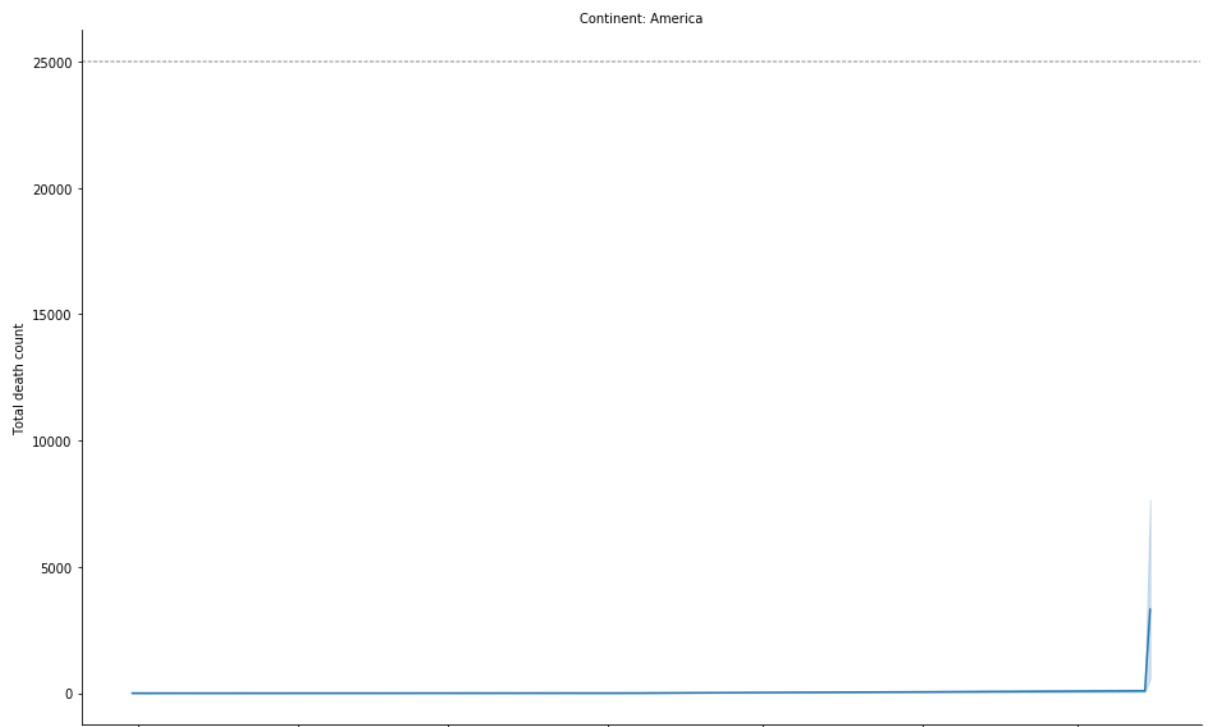


CONTINENT_NAME

- America
- Europe
- Oceania
- Asia
- Africa

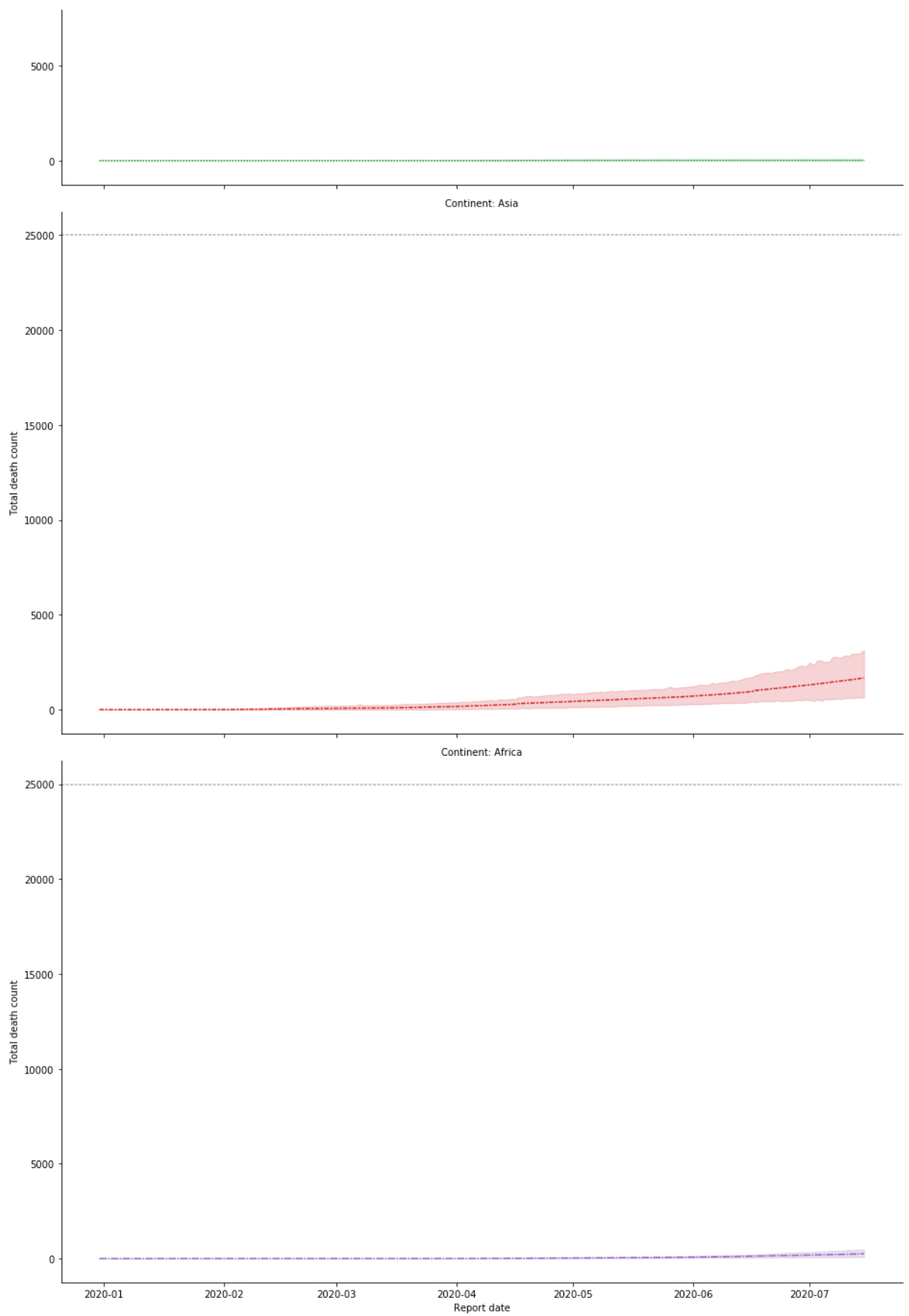



```
In [27]: #Plot total death count by continent
P2=sns.relplot(data=COVID19NA, x="REPORT_DATE", y="PEOPLE_DEATH_COUNT", hue="CONTINENT_NAME", style="CONTINENT_NAME",
               col="CONTINENT_NAME", col_wrap=1, kind="line", height=8, aspect=1.4)
(P2.map(plt.axhline, y=25000, color=".7", dashes=(2, 1), zorder=0)
 .set_axis_labels("Report date", "Total death count")
 .set_titles("Continent: {col_name}"))
plt.savefig('COVID_19_3.png')
```



CONTINENT_NAME

- America
- Europe
- Oceania
- Asia
- Africa



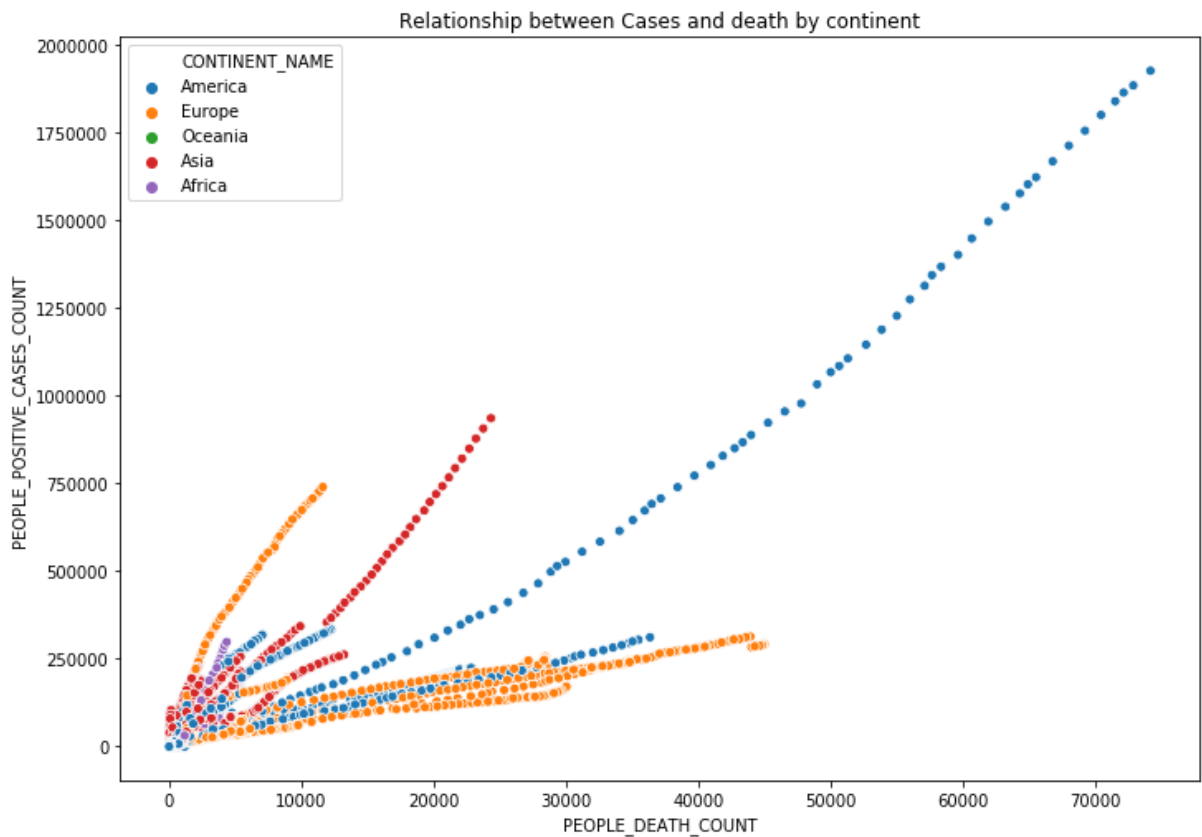
```

In [28]: #Linear regression between death and new positive cases using default
#plot by country
fig, ax = plt.subplots()
#size of A4 paper
fig.set_size_inches(11.7, 8.27)
sns.scatterplot(data=COVID19NA, x="PEOPLE_DEATH_COUNT", y="PEOPLE_POSITIVE_CASES_CO
UNT", hue="CONTINENT_NAME", ax=ax)

#setting the title of the figure
ax.set(title=("Relationship between Covid-19 cases and death by continent"))

#save file and image, remember to rename file name otherwise, it will rewrite
plt.savefig('COVID_19_4.png')
plt.show()

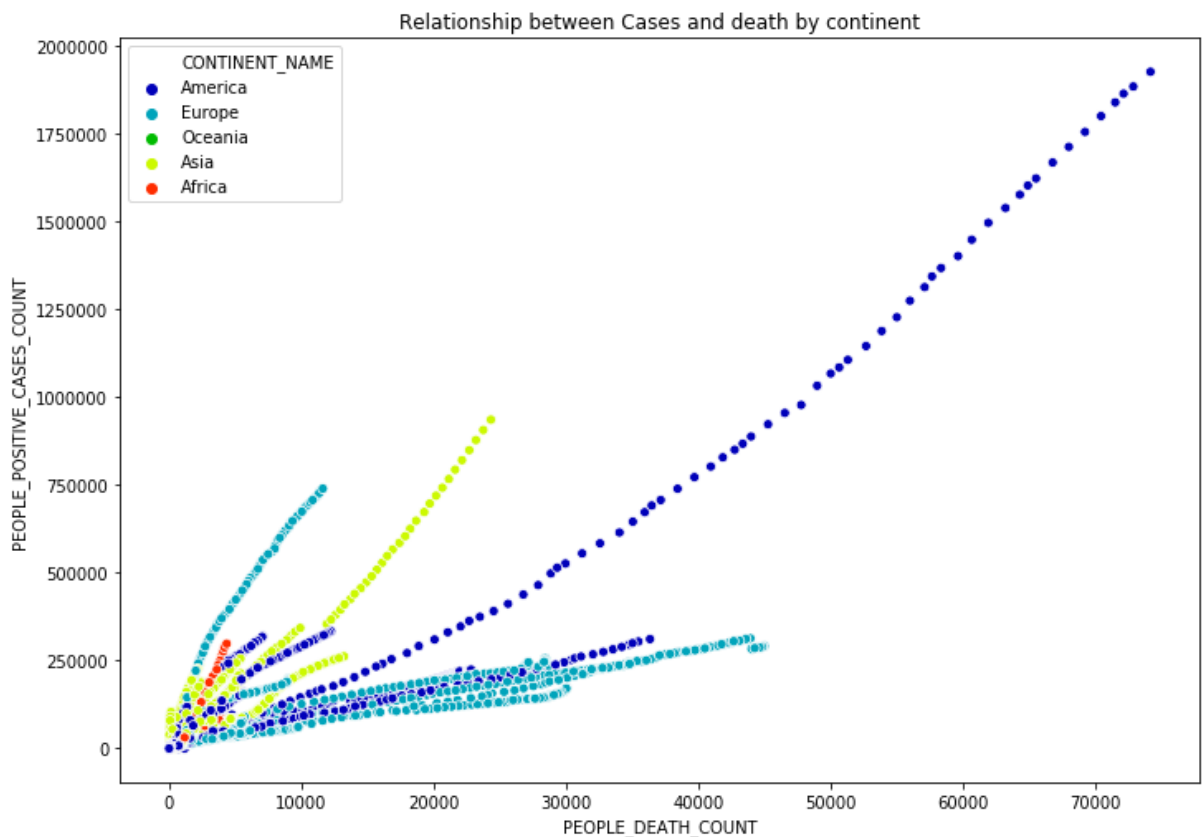
```



```
In [29]: #Linear regression bewtween death and new positive cases using nipy-spectral pattern
#plot by country
fig, ax = plt.subplots()
#size of A4 paper
fig.set_size_inches(11.7, 8.27)
sns.scatterplot(data=COVID19NA, x="PEOPLE_DEATH_COUNT", y="PEOPLE_POSITIVE_CASES_COUNT", hue="CONTINENT_NAME", ax=ax, palette='nipy_spectral')

#setting the title of the figure
ax.set(title=("Relationship between COVID-19 cases and death by continent"))

#save file and image, remember to rename file name otherwise, it will rewrite
plt.savefig('COVID_19_5.png')
plt.show()
```



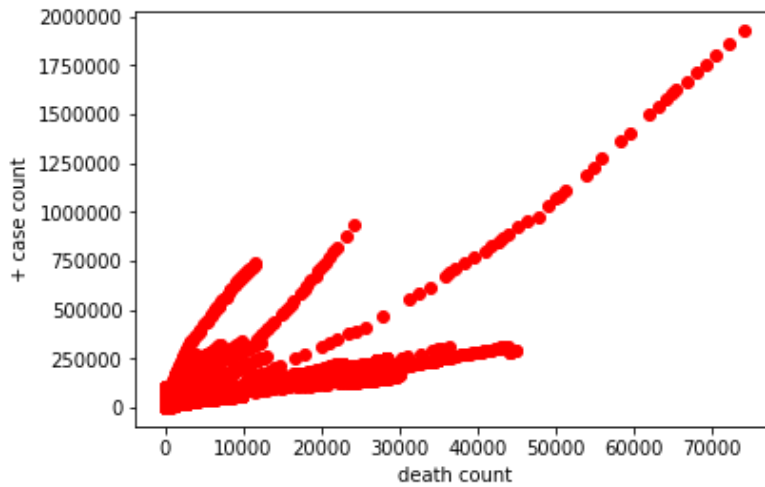
Looks like there maybe a linear relationship between the death count and new cases.

Splitting data into training and test.

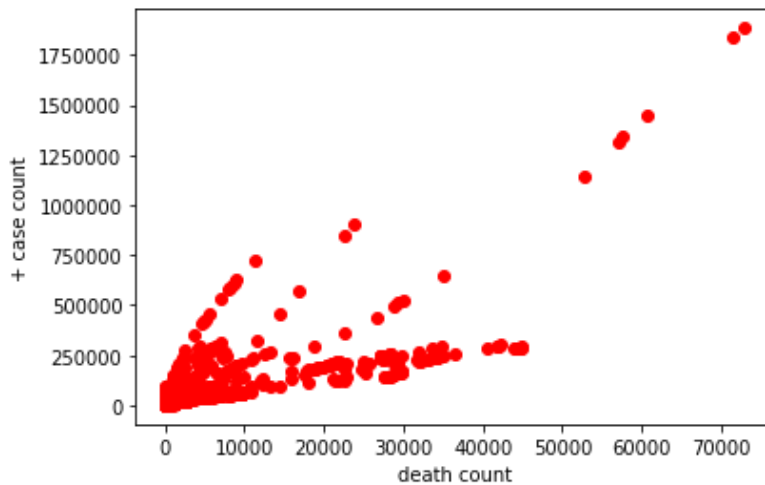
```
In [30]: #Splitting data into testing and training data for a linear regression model
#I'm splitting data by the ratio of 80:20 (Train : Test) based on the Pareto principle.

splt = np.random.rand(len(COVID19NA)) < 0.8
trainC19 = COVID19NA[splt]
testC19 = COVID19NA[~splt]
```

```
In [31]: #Visualizing training data
plt.scatter(trainC19.PEOPLE_DEATH_COUNT, trainC19.PEOPLE_POSITIVE_CASES_COUNT, color='red')
plt.xlabel("COVID-19 death count")
plt.ylabel("+ COVID-19 case count")
plt.show()
```



```
In [32]: #Visualizing testing data
plt.scatter(testC19.PEOPLE_DEATH_COUNT, testC19.PEOPLE_POSITIVE_CASES_COUNT, color='red')
plt.xlabel("COVID-19 death count")
plt.ylabel("+ COVID-19 case count")
plt.show()
```



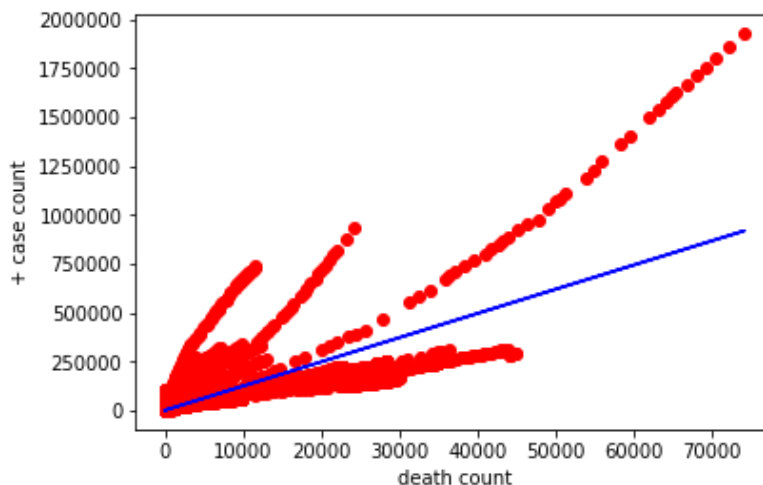
Running the linear regression on the training data

```
In [33]: #from sklearn.Linear_model import LinearRegression
from sklearn import linear_model
regr1 = linear_model.LinearRegression()
trainC19_x = np.asanyarray(trainC19[['PEOPLE_DEATH_COUNT']])
trainC19_y = np.asanyarray(trainC19[['PEOPLE_POSITIVE_CASES_COUNT']])
regr1.fit (trainC19_x, trainC19_y)
# The coefficients
print ('Coefficients: ', regr1.coef_)
print ('Intercept: ',regr1.intercept_)
```

```
Coefficients:  [[12.38329296]]
Intercept:  [322.93957219]
```

```
In [34]: #Visualizing the regression line
#Y=mX+b

plt.scatter(trainC19.PEOPLE_DEATH_COUNT, trainC19.PEOPLE_POSITIVE_CASES_COUNT, color='red')
plt.xlabel("COVID-19 death count")
plt.ylabel("+ COVID-19 case count")
plt.plot(trainC19_x, regr1.coef_[0][0]*trainC19_x + regr1.intercept_[0], '-b')
plt.savefig('COVID_19_6.png')
plt.show()
```



Running the model on the testing data to test the statistical power of the linear regression model based on the training data.

```
In [35]: #Calculate the R-square
from sklearn.metrics import r2_score

testC19_x = np.asanyarray(testC19[['PEOPLE_DEATH_COUNT']])
testC19_y = np.asanyarray(testC19[['PEOPLE_POSITIVE_CASES_COUNT']])
testC19_y_hat = regr1.predict(testC19_x)

print("The mean absolute error: %.2f" % np.mean(np.absolute(testC19_y_hat - testC19_y)))
print("The residual sum of squares (MSE): %.2f" % np.mean((testC19_y_hat - testC19_y) ** 2))
print("The R2-score: %.2f" % r2_score(testC19_y_hat , testC19_y) )
```

The mean absolute error: 812.19
The residual sum of squares (MSE): 89608618.52
The R2-score: 0.42

After running this model on the testing data to test the statistical power of the linear regression model is low with the R-squared (the coefficient of determination) of 0.42 which is far from 1.

I will focus on using this linear regression model on just data from specific countries instead of the whole world e.g United States, Canada, Italy etc. This is because, several factors known and unknown has lead to different pattern which is why there is a burst like positive slope between the linear relationship between the death and total cases variable.

Linear regression of COVID-19 cases in the United States

```
In [36]: #Let's begin by creating a dataframe of the data from just United States
groupUSA = COVID19NA.groupby(COVID19NA.COUNTRY_SHORT_NAME)

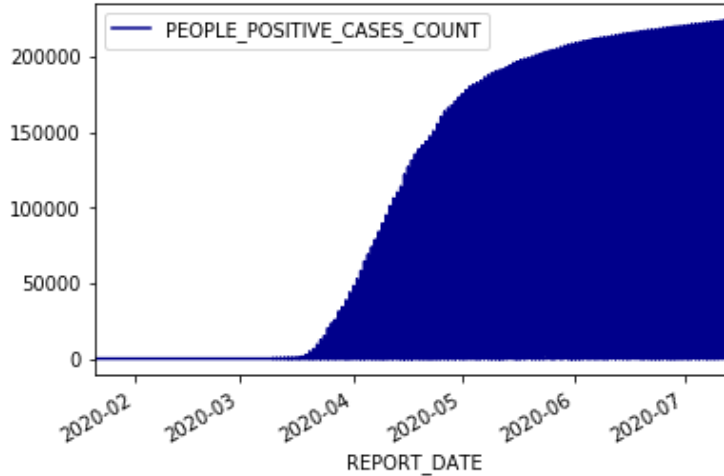
COVID19USA = groupUSA.get_group("United States")

COVID19USA.head()
```

Out[36]:

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	REPORT_DATE	C
1470	Autauga	0	Alabama	2020-01-21	
1471	Bullock	0	Alabama	2020-01-21	
1472	Butler	0	Alabama	2020-01-21	
1473	Cherokee	0	Alabama	2020-01-21	
1474	Chilton	0	Alabama	2020-01-21	


```
In [37]: #Let's plot the + cases_count in USA
plot_2 = COVID19USA.plot(x='REPORT_DATE',
                        y='PEOPLE_POSITIVE_CASES_COUNT',
                        c='DarkBlue')
```



```
In [38]: COVID19USA.dtypes
```

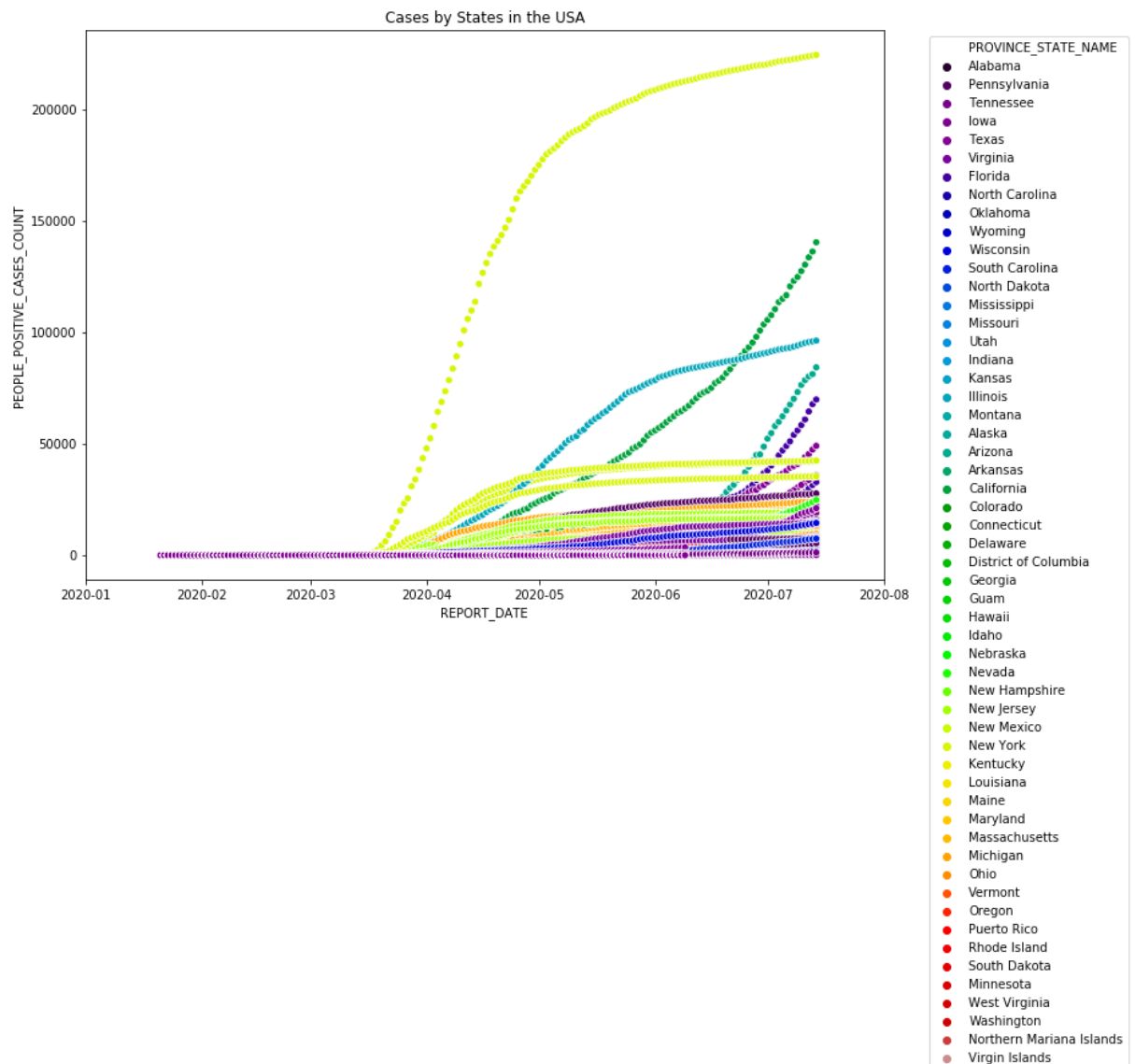
```
Out[38]: COUNTY_NAME                object
PEOPLE_POSITIVE_CASES_COUNT        int64
PROVINCE_STATE_NAME                object
REPORT_DATE                       datetime64[ns]
CONTINENT_NAME                    object
DATA_SOURCE_NAME                  object
PEOPLE_DEATH_NEW_COUNT             int64
COUNTRY_ALPHA_3_CODE              object
COUNTRY_SHORT_NAME                object
PEOPLE_POSITIVE_NEW_CASES_COUNT    int64
PEOPLE_DEATH_COUNT                int64
dtype: object
```

```
In [46]: #Checking that all 55 states are represented in the data
statesUSA = sorted(COVID19USA['PROVINCE_STATE_NAME'].unique())
print(len(statesUSA))
```

55

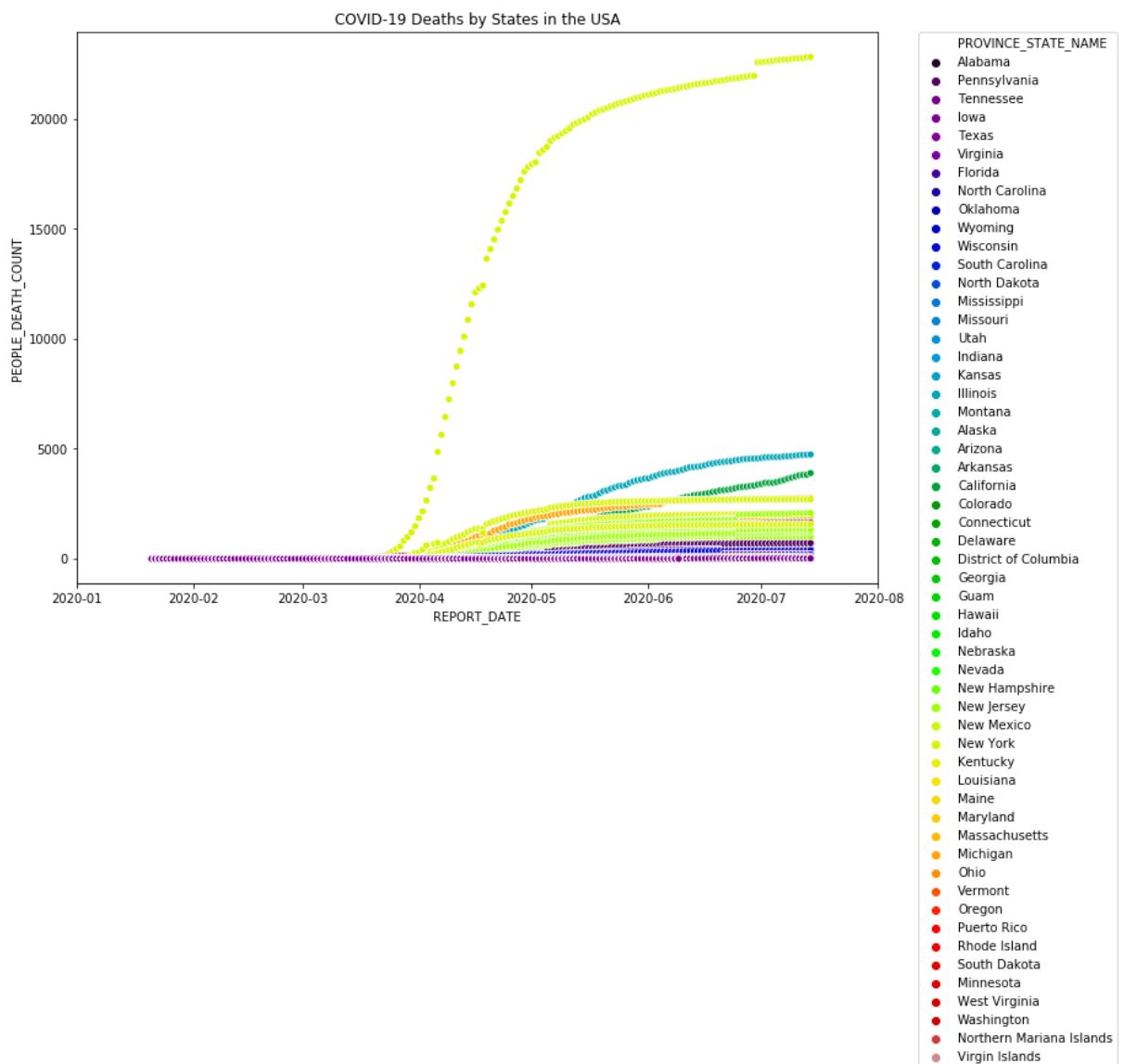
```
In [43]: #plot by state
fig, ax = plt.subplots()
#size of A4 paper
fig.set_size_inches(11.7, 8.27)
sns.scatterplot(data=COVID19USA, x="REPORT_DATE", y="PEOPLE_POSITIVE_CASES_COUNT",
hue="PROVINCE_STATE_NAME",
ax=ax, palette='nipy_spectral')
#set limit of the report date on x axis
ax.set(xlim=('2020-01', '2020-08'))
#setting the title of the figure
ax.set(title=("COVID-19 Cases by States in the USA"))
#place legend outside the plot
plt.legend(bbox_to_anchor=(1.05, 1), loc=2, borderaxespad=0.)

#save file and image, remember to rename file name otherwise, it will rewrite
plt.savefig('COVID_19USA_1.png')
plt.show()
```



```
In [54]: #plot death by state
fig, ax = plt.subplots()
#size of A4 paper
fig.set_size_inches(11.7, 8.27)
sns.scatterplot(data=COVID19USA, x="REPORT_DATE", y="PEOPLE_DEATH_COUNT", hue="PROVINCE_STATE_NAME",
                ax=ax, palette='nipy_spectral')
#set limit of the report date on x axis
ax.set(xlim=('2020-01', '2020-08'))
#setting the title of the figure
ax.set(title=("COVID-19 Deaths by States in the USA"))
#place legend outside the plot
plt.legend(bbox_to_anchor=(1.05, 1), loc=2, borderaxespad=0.)

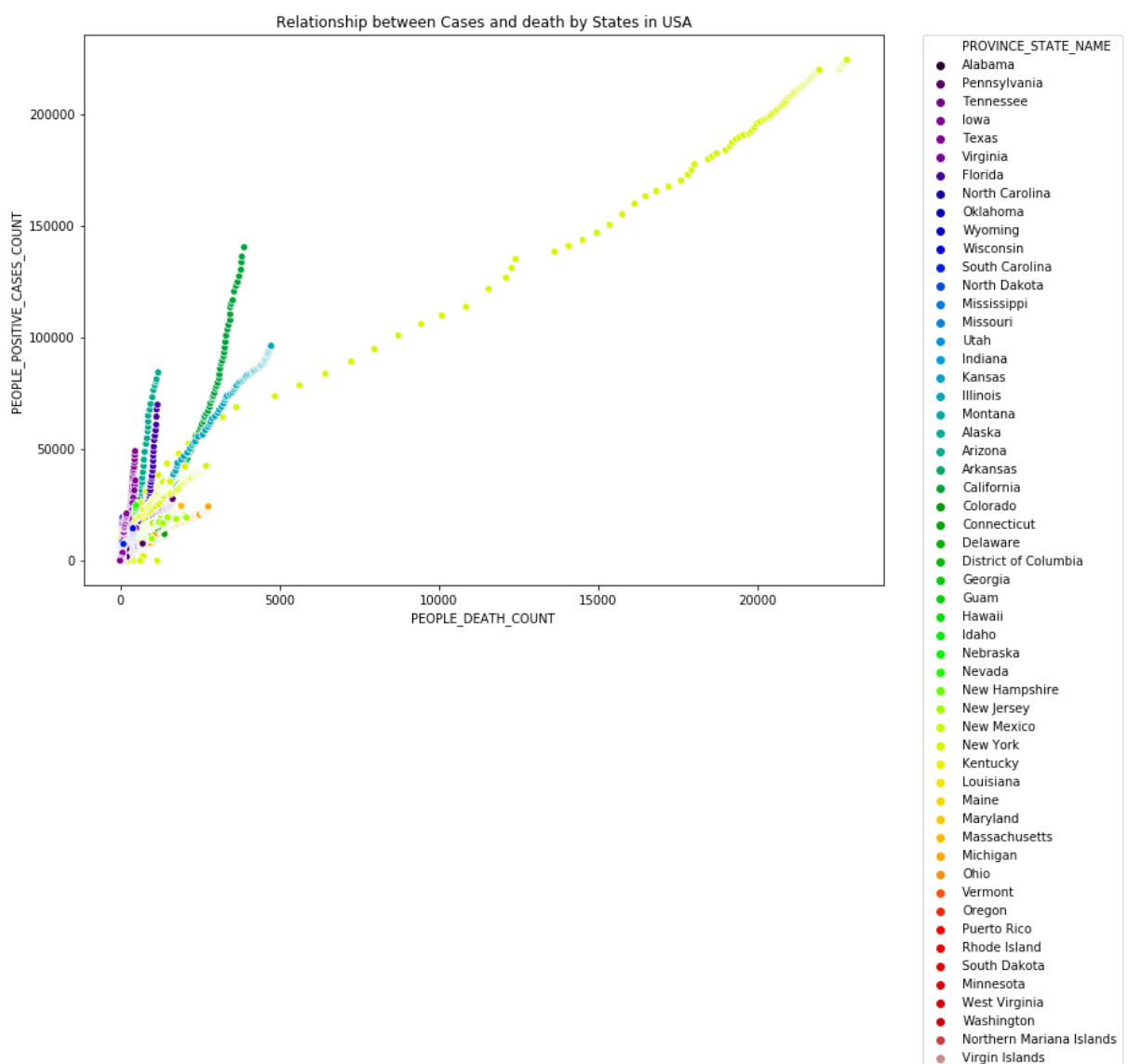
#save file and image, remember to rename file name otherwise, it will rewrite
plt.savefig('COVID_19USA_2.png')
plt.show()
```



```
In [56]: #Linear regression bewtween death and new positive cases using default
#plot by State
fig, ax = plt.subplots()
#size of A4 paper
fig.set_size_inches(11.7, 8.27)
sns.scatterplot(data=COVID19USA, x="PEOPLE_DEATH_COUNT", y="PEOPLE_POSITIVE_CASES_C
OUNT", hue="PROVINCE_STATE_NAME",
               ax=ax, palette='nipy_spectral')

#setting the title of the figure
ax.set(title=("Relationship between Cases and death by States in USA"))
plt.legend(bbox_to_anchor=(1.05, 1), loc=2, borderaxespad=0.)

#save file and image, remember to rename file name otherwise, it will rewrite
plt.savefig('COVID_19USA_3.png')
plt.show()
```



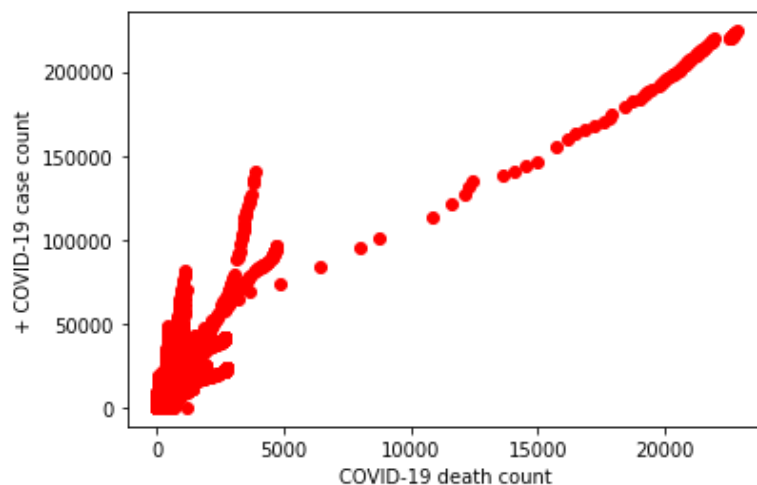
The plot like there maybe a linear relationship between the death count and new cases.

Splitting data into training and test.

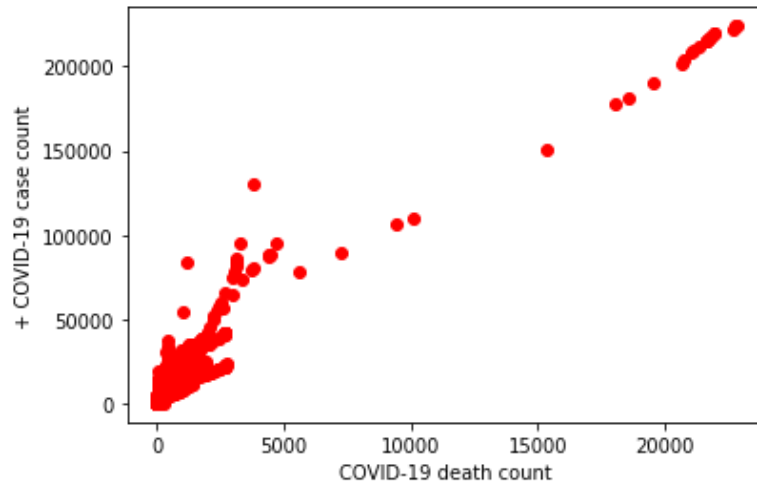
```
In [57]: #Splitting data into testing and training data for a Linear regression model
#I'm splitting data by the ratio of 80:20 (Train : Test) based on the Pareto principle.
```

```
splt = np.random.rand(len(COVID19USA)) < 0.8
trainC19_US = COVID19USA[splt]
testC19_US = COVID19USA[~splt]
```

```
In [58]: #Visualizing training data
plt.scatter(trainC19_US.PEOPLE_DEATH_COUNT, trainC19_US.PEOPLE_POSITIVE_CASES_COUNT,
            color='red')
plt.xlabel("COVID-19 death count")
plt.ylabel("+ COVID-19 case count")
plt.show()
```



```
In [59]: #Visualizing testing data
plt.scatter(testC19_US.PEOPLE_DEATH_COUNT, testC19_US.PEOPLE_POSITIVE_CASES_COUNT,
color='red')
plt.xlabel("COVID-19 death count")
plt.ylabel("+ COVID-19 case count")
plt.show()
```



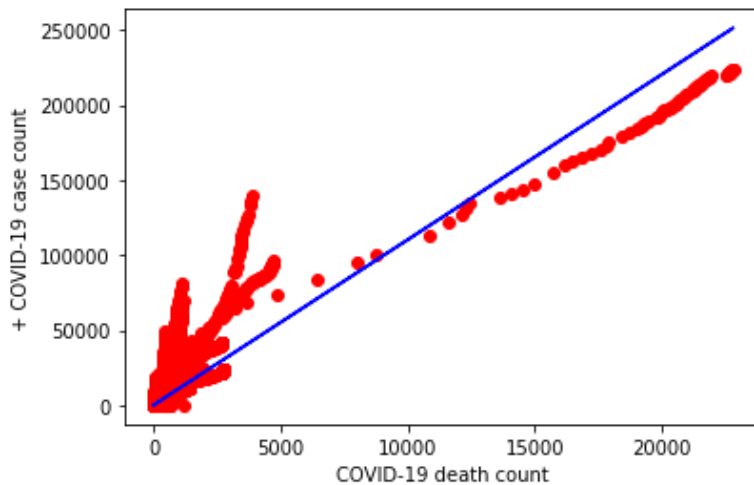
Running the linear regression on the training data

```
In [62]: #from sklearn.linear_model import LinearRegression
from sklearn import linear_model
regr2 = linear_model.LinearRegression()
trainC19_US_x = np.asanyarray(trainC19_US[['PEOPLE_DEATH_COUNT']])
trainC19_US_y = np.asanyarray(trainC19_US[['PEOPLE_POSITIVE_CASES_COUNT']])
regr2.fit (trainC19_US_x, trainC19_US_y)
# The coefficients
print ('Coefficients: ', regr2.coef_)
print ('Intercept: ',regr2.intercept_)
```

```
Coefficients: [[11.01346939]]
Intercept: [131.8281655]
```

```
In [63]: #Visualizing the regression line
#Y=mX+b

plt.scatter(trainC19_US.PEOPLE_DEATH_COUNT, trainC19_US.PEOPLE_POSITIVE_CASES_COUNT,
            color='red')
plt.xlabel("COVID-19 death count")
plt.ylabel("+ COVID-19 case count")
plt.plot(trainC19_US_x, regr2.coef_[0][0]*trainC19_US_x + regr2.intercept_[0], '-b'
)
plt.savefig('COVID_19USA_4.png')
plt.show()
```



The slope of the linear regression model on the training data looks really close to a 1

```
In [65]: #Calculate the R-square
from sklearn.metrics import r2_score

testC19_US_x = np.asanyarray(testC19_US[['PEOPLE_DEATH_COUNT']])
testC19_US_y = np.asanyarray(testC19_US[['PEOPLE_POSITIVE_CASES_COUNT']])
testC19_US_y_hat = regr2.predict(testC19_US_x)

print("The mean absolute error: %.2f" % np.mean(np.absolute(testC19_US_y_hat - testC19_US_y)))
print("The residual sum of squares (MSE): %.2f" % np.mean((testC19_US_y_hat - testC19_US_y) ** 2))
print("The R2-score: %.2f" % r2_score(testC19_US_y_hat, testC19_US_y))
```

```
The mean absolute error: 229.43
The residual sum of squares (MSE): 1130264.08
The R2-score: 0.90
```

Great! After running this simple linear regression model on the testing data to test the statistical power of the linear relationship between positive COVID-19 cases and COVID-19 deaths, the R-squared, the coefficient of determination, generated is 0.90. This indicates that 90% of the COVID-19 data in the USA and the positive (+) direction of the slopeline explains that there is a positive corealtion between the number of COVID-19 death count and the number COVID-19 total case count. This means that in the USA due to the unknown and known factors in the country as the number of COVID-19 total case count increases, the number of COVID-19 death count increases as well.

The next step will be to make this model automatically perform this analysis on every country in the COVID19NA.csv on using this simple linear regression model on just data from specific coutries instead of the whole world e.g United States, Canada, Italy etc. This is because, several factors known and unknown has lead to different pattern which is why there is a burst like positive slope between the linear relationship between the death and total cases variable.

Linear regression of COVID-19 cases in different countries in the world


```
In [80]: countries = sorted(COVID19NA['COUNTRY_SHORT_NAME'].unique())
print(countries)
```

```
['Afghanistan', 'Albania', 'Algeria', 'Andorra', 'Angola', 'Anguilla', 'Antigua and Barbuda', 'Argentina', 'Armenia', 'Aruba', 'Australia', 'Austria', 'Azerbaijan', 'Bahamas', 'Bahrain', 'Bangladesh', 'Barbados', 'Belarus', 'Belgium', 'Belize', 'Benin', 'Bermuda', 'Bhutan', 'Bolivia', 'Bonaire, Saint Eustatius and Saba', 'Bosnia and Herzegovina', 'Botswana', 'Brazil', 'British Virgin Islands', 'Brunei Darussalam', 'Bulgaria', 'Burkina Faso', 'Burundi', 'Cambodia', 'Cameroon', 'Canada', 'Cape Verde', 'Cayman Islands', 'Central African Republic', 'Chad', 'Chile', 'China', 'Colombia', 'Comoros', 'Congo', 'Costa Rica', 'Cote d'Ivoire', 'Croatia', 'Cuba', 'Curaçao', 'Cyprus', 'Czechia', 'Democratic Republic of the Congo', 'Denmark', 'Djibouti', 'Dominica', 'Dominican Republic', 'Ecuador', 'Egypt', 'El Salvador', 'Equatorial Guinea', 'Eritrea', 'Estonia', 'Eswatini', 'Ethiopia', 'Falkland Islands (Malvinas)', 'Faroe Islands', 'Fiji', 'Finland', 'France', 'French Polynesia', 'Gabon', 'Gambia', 'Georgia', 'Germany', 'Ghana', 'Gibraltar', 'Greece', 'Greenland', 'Grenada', 'Guatemala', 'Guernsey', 'Guinea', 'Guinea Bissau', 'Guyana', 'Haiti', 'Holy See', 'Honduras', 'Hungary', 'Iceland', 'India', 'Indonesia', 'Iran', 'Iraq', 'Ireland', 'Isle of Man', 'Israel', 'Italy', 'Jamaica', 'Japan', 'Jersey', 'Jordan', 'Kazakhstan', 'Kenya', 'Kosovo', 'Kuwait', 'Kyrgyzstan', 'Laos', 'Latvia', 'Lebanon', 'Lesotho', 'Liberia', 'Libya', 'Liechtenstein', 'Lithuania', 'Luxembourg', 'Madagascar', 'Malawi', 'Malaysia', 'Maldives', 'Mali', 'Malta', 'Mauritania', 'Mauritius', 'Mexico', 'Moldova', 'Monaco', 'Mongolia', 'Montenegro', 'Montserrat', 'Morocco', 'Mozambique', 'Myanmar', 'Namibia', 'Nepal', 'Netherlands', 'New Caledonia', 'New Zealand', 'Nicaragua', 'Niger', 'Nigeria', 'North Macedonia', 'Norway', 'Oman', 'Pakistan', 'Palestine', 'Panama', 'Papua New Guinea', 'Paraguay', 'Peru', 'Philippines', 'Poland', 'Portugal', 'Qatar', 'Romania', 'Russia', 'Rwanda', 'Saint Kitts and Nevis', 'Saint Lucia', 'Saint Vincent and the Grenadines', 'San Marino', 'Sao Tome and Principe', 'Saudi Arabia', 'Senegal', 'Serbia', 'Seychelles', 'Sierra Leone', 'Singapore', 'Sint Maarten', 'Slovakia', 'Slovenia', 'Somalia', 'South Africa', 'South Korea', 'South Sudan', 'Spain', 'Sri Lanka', 'Sudan', 'Suriname', 'Sweden', 'Switzerland', 'Syria', 'Taiwan', 'Tajikistan', 'Thailand', 'Timor Leste', 'Togo', 'Trinidad and Tobago', 'Tunisia', 'Turkey', 'Turks and Caicos islands', 'Uganda', 'Ukraine', 'United Arab Emirates', 'United Kingdom', 'United Republic of Tanzania', 'United States', 'Uruguay', 'Uzbekistan', 'Venezuela', 'Vietnam', 'Western Sahara', 'Yemen', 'Zambia', 'Zimbabwe']
```

```
In [82]: print(len(countries))
```

205

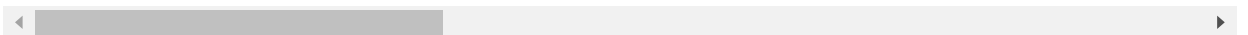
```
In [81]: #key and frame to get each country seperate into a df
country = [ frame for country, frame in COVID19NA.groupby('COUNTRY_SHORT_NAME')]
#Here is the one for country 1, country[0], Afganistan
country[0]
```

Out[81]:

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	REPORT_DATE	
	521609	NaN	34	NaN	2020-03-23
	521610	NaN	20917	NaN	2020-06-09
	521611	NaN	0	NaN	2020-02-21
	521612	NaN	0	NaN	2020-02-09
	521613	NaN	0	NaN	2020-02-03

	560314	NaN	2335	NaN	2020-05-02
	560315	NaN	7	NaN	2020-03-11
	560316	NaN	0	NaN	2020-01-11
	560318	NaN	521	NaN	2020-04-11
	560319	NaN	28833	NaN	2020-06-22

198 rows × 11 columns

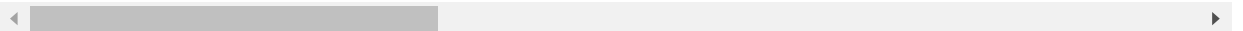


In [79]: *#Here is the one for country 205, country[204], Zimbabwe*
country[204]

Out[79]:

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	REPORT_DATE
522153	NaN	203	NaN	2020-06-02
522154	NaN	985	NaN	2020-07-13
522155	NaN	0	NaN	2020-03-09
522156	NaN	34	NaN	2020-05-06
522157	NaN	0	NaN	2020-02-19
...
559368	NaN	625	NaN	2020-07-04
560541	NaN	0	NaN	2020-03-17
560542	NaN	0	NaN	2020-02-13
560543	NaN	0	NaN	2020-01-22
560562	NaN	14	NaN	2020-04-13

198 rows × 11 columns



```
In [136]: from sklearn import linear_model
#def linRegC19_casesbydeath_percountry(COVID19NA):
country = [ frame for country, frame in COVID19NA.groupby('COUNTRY_SHORT_NAME')]
counter = 0
country[counter]
    #splitting the data for each country
spl = np.random.rand(len(country[counter])) < 0.8
train = country[counter][spl]
test = country[counter][~spl]
    #Visualizing training data
plt.scatter(train.PEOPLE_DEATH_COUNT, train.PEOPLE_POSITIVE_CASES_COUNT, color='red')
plt.xlabel("COVID-19 death count")
plt.ylabel("+ COVID-19 case count")
plt.show()
```

File "<ipython-input-136-09e2c0ccfee7>", line 8

train = country[counter][spl]

^

SyntaxError: invalid syntax

```
In [122]: #running the linear regression of the training data for each country
#regr[counter] = linear_model.LinearRegression(),
#train_x = np.asanyarray(trainC19_ 'country')[['PEOPLE_DEATH_COUNT']]
#trainC19_ 'country']['_y = np.asanyarray(trainC19_ 'country')[['PEOPLE_POSITIVE_
CASES_COUNT']]
#regr2[.].fit (trainC19_ 'country']['_x, trainC19_ 'country']['_y)
# The coefficients
#print ('Coefficients: ', regr[.].coef_)
#print ('Intercept: ',regr[.].intercept_)

#counter+=1,
```

NameError

Traceback (most recent call last)

<ipython-input-122-5e6a15ce28a5> in <module>

----> 1 train.shape

NameError: name 'train' is not defined

```
In [116]: counter=0
country[counter]
spl= np.random.rand(len(country[counter])) < 0.8,
train= country[counter][spl],
test= country[counter][~spl]

plt.scatter(train.PEOPLE_DEATH_COUNT, train.PEOPLE_POSITIVE_CASES_COUNT, color='red')
plt.xlabel("COVID-19 death count")
plt.ylabel("+ COVID-19 case count")
plt.show()
```

File "<ipython-input-116-842ceedaa8e0>", line 7

plt.scatter(train.PEOPLE_DEATH_COUNT, train.PEOPLE_POSITIVE_CASES_COUNT, color='red')

^

SyntaxError: invalid syntax

```
In [115]: import matplotlib.pyplot as plt
```

```
In [69]: COVID19NA.shape
```

```
Out[69]: (609958, 11)
```

```
In [83]: country[204].dtypes
```

```
Out[83]: COUNTY_NAME                object
PEOPLE_POSITIVE_CASES_COUNT         int64
PROVINCE_STATE_NAME                 object
REPORT_DATE                         datetime64[ns]
CONTINENT_NAME                      object
DATA_SOURCE_NAME                   object
PEOPLE_DEATH_NEW_COUNT              int64
COUNTRY_ALPHA_3_CODE               object
COUNTRY_SHORT_NAME                 object
PEOPLE_POSITIVE_NEW_CASES_COUNT     int64
PEOPLE_DEATH_COUNT                 int64
dtype: object
```

```
In [71]: for country, COVID_19_country in COVID19NA.groupby('COUNTRY_SHORT_NAME'):
          print(COVID_19_country)
```

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME \
521609	NaN	34	NaN
521610	NaN	20917	NaN
521611	NaN	0	NaN
521612	NaN	0	NaN
521613	NaN	0	NaN
...
560314	NaN	2335	NaN
560315	NaN	7	NaN
560316	NaN	0	NaN
560318	NaN	521	NaN
560319	NaN	28833	NaN

	REPORT_DATE	CONTINENT_NAME \
521609	2020-03-23	Asia
521610	2020-06-09	Asia
521611	2020-02-21	Asia
521612	2020-02-09	Asia
521613	2020-02-03	Asia
...
560314	2020-05-02	Asia
560315	2020-03-11	Asia
560316	2020-01-11	Asia
560318	2020-04-11	Asia
560319	2020-06-22	Asia

	DATA_SOURCE_NAME \
521609	European Centre for Disease Prevention and Con...
521610	European Centre for Disease Prevention and Con...
521611	European Centre for Disease Prevention and Con...
521612	European Centre for Disease Prevention and Con...
521613	European Centre for Disease Prevention and Con...
...	...
560314	European Centre for Disease Prevention and Con...
560315	European Centre for Disease Prevention and Con...
560316	European Centre for Disease Prevention and Con...
560318	European Centre for Disease Prevention and Con...
560319	European Centre for Disease Prevention and Con...

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME \
521609	0	AFG	Afghanistan
521610	12	AFG	Afghanistan
521611	0	AFG	Afghanistan
521612	0	AFG	Afghanistan
521613	0	AFG	Afghanistan
...
560314	4	AFG	Afghanistan
560315	0	AFG	Afghanistan
560316	0	AFG	Afghanistan
560318	0	AFG	Afghanistan
560319	12	AFG	Afghanistan

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521609	10	0
521610	575	369
521611	0	0
521612	0	0
521613	0	0
...
560314	164	68

560315	3	0
560316	0	0
560318	37	15
560319	409	581

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
521740	NaN	1590	NaN	
521741	NaN	789	NaN	
521742	NaN	663	NaN	
521743	NaN	243	NaN	
521744	NaN	0	NaN	
...	
560427	NaN	0	NaN	
560428	NaN	2047	NaN	
560429	NaN	361	NaN	
560430	NaN	383	NaN	
560431	NaN	712	NaN	

	REPORT_DATE	CONTINENT_NAME	\
521740	2020-06-16	Europe	
521741	2020-05-03	Europe	
521742	2020-04-24	Europe	
521743	2020-04-01	Europe	
521744	2020-03-08	Europe	
...	
560427	2020-02-28	Europe	
560428	2020-06-24	Europe	
560429	2020-04-06	Europe	
560430	2020-04-08	Europe	
560431	2020-04-26	Europe	

	DATA_SOURCE_NAME	\
521740	European Centre for Disease Prevention and Con...	
521741	European Centre for Disease Prevention and Con...	
521742	European Centre for Disease Prevention and Con...	
521743	European Centre for Disease Prevention and Con...	
521744	European Centre for Disease Prevention and Con...	
...	...	
560427	European Centre for Disease Prevention and Con...	
560428	European Centre for Disease Prevention and Con...	
560429	European Centre for Disease Prevention and Con...	
560430	European Centre for Disease Prevention and Con...	
560431	European Centre for Disease Prevention and Con...	

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
521740	0	ALB	Albania	
521741	0	ALB	Albania	
521742	0	ALB	Albania	
521743	3	ALB	Albania	
521744	0	ALB	Albania	
...	
560427	0	ALB	Albania	
560428	1	ALB	Albania	
560429	2	ALB	Albania	
560430	0	ALB	Albania	
560431	0	ALB	Albania	

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521740	69	36

521741	7	31
521742	29	27
521743	20	15
521744	0	0
...
560427	0	0
560428	52	45
560429	28	21
560430	6	22
560431	34	27

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME \
522378	NaN	15941	NaN
522379	NaN	0	NaN
522380	NaN	26	NaN
522381	NaN	4648	NaN
522382	NaN	0	NaN
...
559409	NaN	10698	NaN
560805	NaN	60	NaN
560806	NaN	0	NaN
560807	NaN	2070	NaN
560808	NaN	7728	NaN

	REPORT_DATE	CONTINENT_NAME \
522378	2020-07-06	Africa
522379	2020-02-12	Africa
522380	2020-03-14	Africa
522381	2020-05-05	Africa
522382	2020-01-28	Africa
...
559409	2020-06-13	Africa
560805	2020-03-18	Africa
560806	2020-02-16	Africa
560807	2020-04-15	Africa
560808	2020-05-22	Africa

	DATA_SOURCE_NAME \
522378	European Centre for Disease Prevention and Con...
522379	European Centre for Disease Prevention and Con...
522380	European Centre for Disease Prevention and Con...
522381	European Centre for Disease Prevention and Con...
522382	European Centre for Disease Prevention and Con...
...	...
559409	European Centre for Disease Prevention and Con...
560805	European Centre for Disease Prevention and Con...
560806	European Centre for Disease Prevention and Con...
560807	European Centre for Disease Prevention and Con...
560808	European Centre for Disease Prevention and Con...

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME \
522378	6	DZA	Algeria
522379	0	DZA	Algeria
522380	1	DZA	Algeria
522381	2	DZA	Algeria
522382	0	DZA	Algeria
...
559409	10	DZA	Algeria
560805	1	DZA	Algeria

560806	0	DZA	Algeria
560807	12	DZA	Algeria
560808	7	DZA	Algeria

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
522378	441	952
522379	0	0
522380	1	2
522381	174	465
522382	0	0
...
559409	109	751
560805	2	5
560806	0	0
560807	87	325
560808	186	575

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
521770	NaN	673	NaN	
522899	NaN	743	NaN	
522900	NaN	439	NaN	
522901	NaN	752	NaN	
522902	NaN	858	NaN	
...	
561025	NaN	762	NaN	
561026	NaN	0	NaN	
561027	NaN	852	NaN	
561028	NaN	0	NaN	
561029	NaN	0	NaN	

	REPORT_DATE	CONTINENT_NAME	\
521770	2020-04-16	Europe	
522899	2020-04-28	Europe	
522900	2020-04-04	Europe	
522901	2020-05-08	Europe	
522902	2020-07-14	Europe	
...	
561025	2020-05-23	Europe	
561026	2020-01-20	Europe	
561027	2020-06-09	Europe	
561028	2020-02-05	Europe	
561029	2020-01-12	Europe	

	DATA_SOURCE_NAME	\
521770	European Centre for Disease Prevention and Con...	
522899	European Centre for Disease Prevention and Con...	
522900	European Centre for Disease Prevention and Con...	
522901	European Centre for Disease Prevention and Con...	
522902	European Centre for Disease Prevention and Con...	
...	...	
561025	European Centre for Disease Prevention and Con...	
561026	European Centre for Disease Prevention and Con...	
561027	European Centre for Disease Prevention and Con...	
561028	European Centre for Disease Prevention and Con...	
561029	European Centre for Disease Prevention and Con...	

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
521770	2	AND	Andorra	
522899	0	AND	Andorra	

522900	1	AND	Andorra
522901	1	AND	Andorra
522902	0	AND	Andorra
...
561025	0	AND	Andorra
561026	0	AND	Andorra
561027	0	AND	Andorra
561028	0	AND	Andorra
561029	0	AND	Andorra

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521770	14	33
522899	3	40
522900	11	16
522901	1	47
522902	3	52
...
561025	0	51
561026	0	0
561027	0	51
561028	0	0
561029	0	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME \
522591	NaN	0	NaN
522592	NaN	0	NaN
522593	NaN	0	NaN
522594	NaN	0	NaN
522595	NaN	0	NaN
...
561538	NaN	0	NaN
561539	NaN	0	NaN
561540	NaN	19	NaN
561541	NaN	0	NaN
561542	NaN	0	NaN

	REPORT_DATE	CONTINENT_NAME \
522591	2020-02-24	Africa
522592	2020-02-18	Africa
522593	2020-03-21	Africa
522594	2020-03-03	Africa
522595	2020-01-06	Africa
...
561538	2020-02-16	Africa
561539	2020-01-25	Africa
561540	2020-04-16	Africa
561541	2020-03-17	Africa
561542	2020-01-02	Africa

	DATA_SOURCE_NAME \
522591	European Centre for Disease Prevention and Con...
522592	European Centre for Disease Prevention and Con...
522593	European Centre for Disease Prevention and Con...
522594	European Centre for Disease Prevention and Con...
522595	European Centre for Disease Prevention and Con...
...	...
561538	European Centre for Disease Prevention and Con...
561539	European Centre for Disease Prevention and Con...
561540	European Centre for Disease Prevention and Con...

561541 European Centre for Disease Prevention and Con...
 561542 European Centre for Disease Prevention and Con...

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME \
522591	0	AGO	Angola
522592	0	AGO	Angola
522593	0	AGO	Angola
522594	0	AGO	Angola
522595	0	AGO	Angola
...
561538	0	AGO	Angola
561539	0	AGO	Angola
561540	0	AGO	Angola
561541	0	AGO	Angola
561542	0	AGO	Angola

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
522591	0	0
522592	0	0
522593	0	0
522594	0	0
522595	0	0
...
561538	0	0
561539	0	0
561540	0	2
561541	0	0
561542	0	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME \
522235	NaN	0	NaN
522236	NaN	0	NaN
522237	NaN	0	NaN
523628	NaN	12	NaN
523629	NaN	12	NaN
...
559874	NaN	0	NaN
561143	NaN	12	NaN
561144	NaN	6	NaN
561145	NaN	0	NaN
561146	NaN	6	NaN

	REPORT_DATE	CONTINENT_NAME \
522235	2020-03-10	America
522236	2020-02-23	America
522237	2020-02-07	America
523628	2020-04-17	America
523629	2020-05-10	America
...
559874	2020-01-22	America
561143	2020-04-07	America
561144	2020-07-03	America
561145	2020-03-13	America
561146	2020-07-10	America

	DATA_SOURCE_NAME \
522235	European Centre for Disease Prevention and Con...
522236	European Centre for Disease Prevention and Con...
522237	European Centre for Disease Prevention and Con...

523628 European Centre for Disease Prevention and Con...
 523629 European Centre for Disease Prevention and Con...
 ...
 559874 European Centre for Disease Prevention and Con...
 561143 European Centre for Disease Prevention and Con...
 561144 European Centre for Disease Prevention and Con...
 561145 European Centre for Disease Prevention and Con...
 561146 European Centre for Disease Prevention and Con...

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME \
522235	0	AIA	Anguilla
522236	0	AIA	Anguilla
522237	0	AIA	Anguilla
523628	0	AIA	Anguilla
523629	0	AIA	Anguilla
...
559874	0	AIA	Anguilla
561143	0	AIA	Anguilla
561144	0	AIA	Anguilla
561145	0	AIA	Anguilla
561146	0	AIA	Anguilla

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
522235	0	0
522236	0	0
522237	0	0
523628	0	0
523629	0	0
...
559874	0	0
561143	0	0
561144	0	0
561145	0	0
561146	0	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME \
521556	NaN	24	NaN
521557	NaN	74	NaN
521558	NaN	25	NaN
521559	NaN	0	NaN
521574	NaN	0	NaN
...
561282	NaN	0	NaN
561283	NaN	0	NaN
561284	NaN	0	NaN
561285	NaN	0	NaN
561293	NaN	0	NaN

	REPORT_DATE	CONTINENT_NAME \
521556	2020-04-28	America
521557	2020-07-15	America
521558	2020-06-02	America
521559	2020-02-13	America
521574	2020-02-01	America
...
561282	2020-01-16	America
561283	2020-01-20	America
561284	2020-02-08	America
561285	2020-01-01	America

561293 2019-12-31 America

	DATA_SOURCE_NAME \
521556	European Centre for Disease Prevention and Con...
521557	European Centre for Disease Prevention and Con...
521558	European Centre for Disease Prevention and Con...
521559	European Centre for Disease Prevention and Con...
521574	European Centre for Disease Prevention and Con...
...	...
561282	European Centre for Disease Prevention and Con...
561283	European Centre for Disease Prevention and Con...
561284	European Centre for Disease Prevention and Con...
561285	European Centre for Disease Prevention and Con...
561293	European Centre for Disease Prevention and Con...

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME \
521556	0	ATG	Antigua and Barbuda
521557	0	ATG	Antigua and Barbuda
521558	0	ATG	Antigua and Barbuda
521559	0	ATG	Antigua and Barbuda
521574	0	ATG	Antigua and Barbuda
...
561282	0	ATG	Antigua and Barbuda
561283	0	ATG	Antigua and Barbuda
561284	0	ATG	Antigua and Barbuda
561285	0	ATG	Antigua and Barbuda
561293	0	ATG	Antigua and Barbuda

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521556	0	3
521557	0	3
521558	0	3
521559	0	0
521574	0	0
...
561282	0	0
561283	0	0
561284	0	0
561285	0	0
561293	0	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME \
521553	NaN	3990	NaN
521554	NaN	97	NaN
521555	NaN	1	NaN
521573	NaN	24748	NaN
523210	NaN	7466	NaN
...
561271	NaN	1795	NaN
561272	NaN	65	NaN
561273	NaN	0	NaN
561274	NaN	0	NaN
561275	NaN	0	NaN

	REPORT_DATE	CONTINENT_NAME \
521553	2020-04-28	America
521554	2020-03-19	America
521555	2020-03-05	America
521573	2020-06-10	America

523210	2020-05-16	America
...
561271	2020-04-09	America
561272	2020-03-17	America
561273	2020-01-28	America
561274	2020-01-06	America
561275	2020-01-08	America

	DATA_SOURCE_NAME	\
521553	European Centre for Disease Prevention and Con...	
521554	European Centre for Disease Prevention and Con...	
521555	European Centre for Disease Prevention and Con...	
521573	European Centre for Disease Prevention and Con...	
523210	European Centre for Disease Prevention and Con...	
...
561271	European Centre for Disease Prevention and Con...	
561272	European Centre for Disease Prevention and Con...	
561273	European Centre for Disease Prevention and Con...	
561274	European Centre for Disease Prevention and Con...	
561275	European Centre for Disease Prevention and Con...	

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
521553	11	ARG	Argentina	
521554	0	ARG	Argentina	
521555	0	ARG	Argentina	
521573	24	ARG	Argentina	
523210	3	ARG	Argentina	
...
561271	5	ARG	Argentina	
561272	0	ARG	Argentina	
561273	0	ARG	Argentina	
561274	0	ARG	Argentina	
561275	0	ARG	Argentina	

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521553	223	197
521554	18	2
521555	0	0
521573	1141	717
523210	345	356
...
561271	80	65
561272	9	2
561273	0	0
561274	0	0
561275	0	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
521401	NaN	190	NaN	
521402	NaN	32490	NaN	
521403	NaN	1201	NaN	
521404	NaN	5606	NaN	
521405	NaN	1	NaN	
...
560461	NaN	8927	NaN	
560462	NaN	13	NaN	
560463	NaN	0	NaN	
560464	NaN	0	NaN	
560465	NaN	3313	NaN	

	REPORT_DATE	CONTINENT_NAME	\
521401	2020-03-23	Europe	
521402	2020-07-15	Europe	
521403	2020-04-17	Europe	
521404	2020-05-22	Europe	
521405	2020-03-03	Europe	
...	
560461	2020-05-31	Europe	
560462	2020-03-14	Europe	
560463	2020-01-31	Europe	
560464	2020-01-14	Europe	
560465	2020-05-11	Europe	

	DATA_SOURCE_NAME	\
521401	European Centre for Disease Prevention and Con...	
521402	European Centre for Disease Prevention and Con...	
521403	European Centre for Disease Prevention and Con...	
521404	European Centre for Disease Prevention and Con...	
521405	European Centre for Disease Prevention and Con...	
...	...	
560461	European Centre for Disease Prevention and Con...	
560462	European Centre for Disease Prevention and Con...	
560463	European Centre for Disease Prevention and Con...	
560464	European Centre for Disease Prevention and Con...	
560465	European Centre for Disease Prevention and Con...	

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
521401	0	ARM	Armenia	
521402	8	ARM	Armenia	
521403	1	ARM	Armenia	
521404	3	ARM	Armenia	
521405	0	ARM	Armenia	
...	
560461	7	ARM	Armenia	
560462	0	ARM	Armenia	
560463	0	ARM	Armenia	
560464	0	ARM	Armenia	
560465	1	ARM	Armenia	

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521401	30	0
521402	339	581
521403	42	19
521404	335	70
521405	0	0
...
560461	251	127
560462	7	0
560463	0	0
560464	0	0
560465	138	45

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
521912	NaN	101	NaN	
521913	NaN	97	NaN	
521914	NaN	0	NaN	
521915	NaN	4	NaN	
521916	NaN	0	NaN	

...
561228	NaN	100	NaN
561229	NaN	0	NaN
561230	NaN	0	NaN
561231	NaN	0	NaN
561232	NaN	0	NaN

	REPORT_DATE	CONTINENT_NAME	\
521912	2020-05-16	America	
521913	2020-04-20	America	
521914	2020-03-11	America	
521915	2020-03-21	America	
521916	2020-02-09	America	
...	
561228	2020-04-26	America	
561229	2020-02-13	America	
561230	2020-02-03	America	
561231	2020-01-04	America	
561232	2020-01-12	America	

	DATA_SOURCE_NAME	\
521912	European Centre for Disease Prevention and Con...	
521913	European Centre for Disease Prevention and Con...	
521914	European Centre for Disease Prevention and Con...	
521915	European Centre for Disease Prevention and Con...	
521916	European Centre for Disease Prevention and Con...	
...	...	
561228	European Centre for Disease Prevention and Con...	
561229	European Centre for Disease Prevention and Con...	
561230	European Centre for Disease Prevention and Con...	
561231	European Centre for Disease Prevention and Con...	
561232	European Centre for Disease Prevention and Con...	

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
521912	0	ABW	Aruba	
521913	0	ABW	Aruba	
521914	0	ABW	Aruba	
521915	0	ABW	Aruba	
521916	0	ABW	Aruba	
...	
561228	0	ABW	Aruba	
561229	0	ABW	Aruba	
561230	0	ABW	Aruba	
561231	0	ABW	Aruba	
561232	0	ABW	Aruba	

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521912	0	3
521913	1	2
521914	0	0
521915	0	0
521916	0	0
...
561228	0	2
561229	0	0
561230	0	0
561231	0	0
561232	0	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
522327	NaN	7391	NaN	
522328	NaN	7302	NaN	
522329	NaN	7106	NaN	
522330	NaN	14	NaN	
522331	NaN	6322	NaN	
...	
561190	NaN	33	NaN	
561191	NaN	0	NaN	
561192	NaN	6	NaN	
561193	NaN	59	NaN	
561194	NaN	4	NaN	

	REPORT_DATE	CONTINENT_NAME	\
522327	2020-06-19	Oceania	
522328	2020-06-14	Oceania	
522329	2020-05-24	Oceania	
522330	2020-02-12	Oceania	
522331	2020-04-13	Oceania	
...	
561190	2020-03-03	Oceania	
561191	2020-01-23	Oceania	
561192	2020-01-30	Oceania	
561193	2020-03-06	Oceania	
561194	2020-01-26	Oceania	

	DATA_SOURCE_NAME	\
522327	European Centre for Disease Prevention and Con...	
522328	European Centre for Disease Prevention and Con...	
522329	European Centre for Disease Prevention and Con...	
522330	European Centre for Disease Prevention and Con...	
522331	European Centre for Disease Prevention and Con...	
...	...	
561190	European Centre for Disease Prevention and Con...	
561191	European Centre for Disease Prevention and Con...	
561192	European Centre for Disease Prevention and Con...	
561193	European Centre for Disease Prevention and Con...	
561194	European Centre for Disease Prevention and Con...	

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
522327	0	AUS	Australia	
522328	0	AUS	Australia	
522329	1	AUS	Australia	
522330	0	AUS	Australia	
522331	4	AUS	Australia	
...	
561190	0	AUS	Australia	
561191	0	AUS	Australia	
561192	0	AUS	Australia	
561193	0	AUS	Australia	
561194	0	AUS	Australia	

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
522327	21	102
522328	12	102
522329	11	102
522330	0	0
522331	33	61
...
561190	4	1

561191	0	0
561192	2	0
561193	7	2
561194	3	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
521355	NaN	19060	NaN	
521356	NaN	16257	NaN	
521357	NaN	16936	NaN	
521358	NaN	12640	NaN	
521361	NaN	504	NaN	
...	
560757	NaN	14234	NaN	
560758	NaN	16868	NaN	
560759	NaN	0	NaN	
560760	NaN	0	NaN	
560761	NaN	361	NaN	

	REPORT_DATE	CONTINENT_NAME	\
521355	2020-07-15	Europe	
521356	2020-05-20	Europe	
521357	2020-06-11	Europe	
521358	2020-04-08	Europe	
521361	2020-03-14	Europe	
...	
560757	2020-04-15	Europe	
560758	2020-06-08	Europe	
560759	2020-02-01	Europe	
560760	2020-01-26	Europe	
560761	2020-03-13	Europe	

	DATA_SOURCE_NAME	\
521355	European Centre for Disease Prevention and Con...	
521356	European Centre for Disease Prevention and Con...	
521357	European Centre for Disease Prevention and Con...	
521358	European Centre for Disease Prevention and Con...	
521361	European Centre for Disease Prevention and Con...	
...	...	
560757	European Centre for Disease Prevention and Con...	
560758	European Centre for Disease Prevention and Con...	
560759	European Centre for Disease Prevention and Con...	
560760	European Centre for Disease Prevention and Con...	
560761	European Centre for Disease Prevention and Con...	

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
521355	1	AUT	Austria	
521356	3	AUT	Austria	
521357	1	AUT	Austria	
521358	23	AUT	Austria	
521361	0	AUT	Austria	
...	
560757	16	AUT	Austria	
560758	0	AUT	Austria	
560759	0	AUT	Austria	
560760	0	AUT	Austria	
560761	1	AUT	Austria	

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521355	201	709

521356	78	632
521357	34	673
521358	343	243
521361	143	1
...
560757	191	384
560758	46	672
560759	0	0
560760	0	0
560761	115	1

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME \
522087	NaN	3982	NaN
522088	NaN	1645	NaN
522089	NaN	6	NaN
522090	NaN	1	NaN
522091	NaN	22464	NaN
...
559796	NaN	0	NaN
559797	NaN	0	NaN
561096	NaN	25113	NaN
561097	NaN	0	NaN
561098	NaN	5935	NaN

	REPORT_DATE	CONTINENT_NAME \
522087	2020-05-24	Europe
522088	2020-04-27	Europe
522089	2020-03-06	Europe
522090	2020-03-01	Europe
522091	2020-07-10	Europe
...
559796	2020-02-04	Europe
559797	2020-01-08	Europe
561096	2020-07-15	Europe
561097	2020-02-14	Europe
561098	2020-06-03	Europe

	DATA_SOURCE_NAME \
522087	European Centre for Disease Prevention and Con...
522088	European Centre for Disease Prevention and Con...
522089	European Centre for Disease Prevention and Con...
522090	European Centre for Disease Prevention and Con...
522091	European Centre for Disease Prevention and Con...
...	...
559796	European Centre for Disease Prevention and Con...
559797	European Centre for Disease Prevention and Con...
561096	European Centre for Disease Prevention and Con...
561097	European Centre for Disease Prevention and Con...
561098	European Centre for Disease Prevention and Con...

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME \
522087	3	AZE	Azerbaijan
522088	0	AZE	Azerbaijan
522089	0	AZE	Azerbaijan
522090	0	AZE	Azerbaijan
522091	10	AZE	Azerbaijan
...
559796	0	AZE	Azerbaijan
559797	0	AZE	Azerbaijan

561096	6	AZE	Azerbaijan
561097	0	AZE	Azerbaijan
561098	3	AZE	Azerbaijan

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
522087	127	49
522088	28	21
522089	3	0
522090	0	0
522091	548	284
...
559796	0	0
559797	0	0
561096	543	319
561097	0	0
561098	273	71

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
522158	NaN	104	NaN	
522159	NaN	111	NaN	
522160	NaN	42	NaN	
522161	NaN	0	NaN	
523424	NaN	96	NaN	
...	
560551	NaN	0	NaN	
560552	NaN	104	NaN	
560553	NaN	0	NaN	
560554	NaN	0	NaN	
560555	NaN	0	NaN	

	REPORT_DATE	CONTINENT_NAME	\
522158	2020-06-19	America	
522159	2020-07-13	America	
522160	2020-04-11	America	
522161	2020-02-21	America	
523424	2020-05-16	America	
...	
560551	2020-03-08	America	
560552	2020-06-22	America	
560553	2020-01-20	America	
560554	2020-01-23	America	
560555	2020-01-04	America	

	DATA_SOURCE_NAME	\
522158	European Centre for Disease Prevention and Con...	
522159	European Centre for Disease Prevention and Con...	
522160	European Centre for Disease Prevention and Con...	
522161	European Centre for Disease Prevention and Con...	
523424	European Centre for Disease Prevention and Con...	
...	...	
560551	European Centre for Disease Prevention and Con...	
560552	European Centre for Disease Prevention and Con...	
560553	European Centre for Disease Prevention and Con...	
560554	European Centre for Disease Prevention and Con...	
560555	European Centre for Disease Prevention and Con...	

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
522158	0	BHS	Bahamas	
522159	0	BHS	Bahamas	

522160	0	BHS	Bahamas
522161	0	BHS	Bahamas
523424	0	BHS	Bahamas
...
560551	0	BHS	Bahamas
560552	0	BHS	Bahamas
560553	0	BHS	Bahamas
560554	0	BHS	Bahamas
560555	0	BHS	Bahamas

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
522158	0	11
522159	0	11
522160	1	8
522161	0	0
523424	0	11
...
560551	0	0
560552	0	11
560553	0	0
560554	0	0
560555	0	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME \
522372	NaN	334	NaN
522373	NaN	30321	NaN
522374	NaN	1873	NaN
522375	NaN	7532	NaN
522376	NaN	0	NaN
...
560801	NaN	25267	NaN
560802	NaN	0	NaN
560803	NaN	0	NaN
560804	NaN	0	NaN
560853	NaN	32039	NaN

	REPORT_DATE	CONTINENT_NAME \
522372	2020-03-23	Asia
522373	2020-07-08	Asia
522374	2020-04-20	Asia
522375	2020-05-20	Asia
522376	2020-01-27	Asia
...
560801	2020-06-28	Asia
560802	2020-01-31	Asia
560803	2020-01-29	Asia
560804	2020-01-11	Asia
560853	2020-07-11	Asia

	DATA_SOURCE_NAME \
522372	European Centre for Disease Prevention and Con...
522373	European Centre for Disease Prevention and Con...
522374	European Centre for Disease Prevention and Con...
522375	European Centre for Disease Prevention and Con...
522376	European Centre for Disease Prevention and Con...
...	...
560801	European Centre for Disease Prevention and Con...
560802	European Centre for Disease Prevention and Con...
560803	European Centre for Disease Prevention and Con...

560804 European Centre for Disease Prevention and Con...
 560853 European Centre for Disease Prevention and Con...

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
522372	1	BHR	Bahrain	
522373	0	BHR	Bahrain	
522374	0	BHR	Bahrain	
522375	0	BHR	Bahrain	
522376	0	BHR	Bahrain	
...	
560801	0	BHR	Bahrain	
560802	0	BHR	Bahrain	
560803	0	BHR	Bahrain	
560804	0	BHR	Bahrain	
560853	1	BHR	Bahrain	

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
522372	28	2
522373	500	98
522374	100	7
522375	348	12
522376	0	0
...
560801	462	78
560802	0	0
560803	0	0
560804	0	0
560853	511	104

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
522206	NaN	165618	NaN	
522207	NaN	183795	NaN	
522208	NaN	3	NaN	
522209	NaN	482	NaN	
522210	NaN	13770	NaN	
...	
561117	NaN	5913	NaN	
561118	NaN	32078	NaN	
561119	NaN	98489	NaN	
561120	NaN	153277	NaN	
561121	NaN	175494	NaN	

	REPORT_DATE	CONTINENT_NAME	\
522206	2020-07-07	Asia	
522207	2020-07-13	Asia	
522208	2020-03-09	Asia	
522209	2020-04-12	Asia	
522210	2020-05-10	Asia	
...	
561117	2020-04-28	Asia	
561118	2020-05-24	Asia	
561119	2020-06-18	Asia	
561120	2020-07-03	Asia	
561121	2020-07-10	Asia	

	DATA_SOURCE_NAME	\
522206	European Centre for Disease Prevention and Con...	
522207	European Centre for Disease Prevention and Con...	
522208	European Centre for Disease Prevention and Con...	

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522209 European Centre for Disease Prevention and Con...
522210 European Centre for Disease Prevention and Con...
...
561117 European Centre for Disease Prevention and Con...
561118 European Centre for Disease Prevention and Con...
561119 European Centre for Disease Prevention and Con...
561120 European Centre for Disease Prevention and Con...
561121 European Centre for Disease Prevention and Con...

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	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
522206	44	BGD	Bangladesh	
522207	47	BGD	Bangladesh	
522208	0	BGD	Bangladesh	
522209	3	BGD	Bangladesh	
522210	8	BGD	Bangladesh	
...	
561117	7	BGD	Bangladesh	
561118	20	BGD	Bangladesh	
561119	43	BGD	Bangladesh	
561120	38	BGD	Bangladesh	
561121	41	BGD	Bangladesh	

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
522206	3201	2096
522207	2666	2352
522208	3	0
522209	58	30
522210	636	214
...
561117	497	152
561118	1873	452
561119	4008	1305
561120	4019	1926
561121	3360	2238

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
521372	NaN	96	NaN	
521373	NaN	0	NaN	
521374	NaN	56	NaN	
521375	NaN	63	NaN	
521376	NaN	0	NaN	
...	
559455	NaN	92	NaN	
560581	NaN	88	NaN	
560582	NaN	45	NaN	
560583	NaN	96	NaN	
560584	NaN	0	NaN	

	REPORT_DATE	CONTINENT_NAME	\
521372	2020-06-12	America	
521373	2020-03-17	America	
521374	2020-04-06	America	
521375	2020-04-08	America	
521376	2020-01-15	America	
...	
559455	2020-05-27	America	
560581	2020-05-18	America	
560582	2020-04-02	America	
560583	2020-06-13	America	

560584 2020-02-25 America

	DATA_SOURCE_NAME	\
521372	European Centre for Disease Prevention and Con...	
521373	European Centre for Disease Prevention and Con...	
521374	European Centre for Disease Prevention and Con...	
521375	European Centre for Disease Prevention and Con...	
521376	European Centre for Disease Prevention and Con...	
...	...	
559455	European Centre for Disease Prevention and Con...	
560581	European Centre for Disease Prevention and Con...	
560582	European Centre for Disease Prevention and Con...	
560583	European Centre for Disease Prevention and Con...	
560584	European Centre for Disease Prevention and Con...	

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
521372	0	BRB	Barbados	
521373	0	BRB	Barbados	
521374	1	BRB	Barbados	
521375	1	BRB	Barbados	
521376	0	BRB	Barbados	
...	
559455	0	BRB	Barbados	
560581	0	BRB	Barbados	
560582	0	BRB	Barbados	
560583	0	BRB	Barbados	
560584	0	BRB	Barbados	

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521372	0	7
521373	0	0
521374	5	1
521375	3	3
521376	0	0
...
559455	0	7
560581	2	7
560582	11	0
560583	0	7
560584	0	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
522061	NaN	0	NaN	
522062	NaN	21	NaN	
522063	NaN	564	NaN	
522064	NaN	152	NaN	
522065	NaN	254	NaN	
...	
559770	NaN	20168	NaN	
559771	NaN	1	NaN	
561068	NaN	6	NaN	
561069	NaN	3281	NaN	
561070	NaN	4	NaN	

	REPORT_DATE	CONTINENT_NAME	\
522061	2020-02-16	Europe	
522062	2020-03-14	Europe	
522063	2020-04-06	Europe	
522064	2020-04-02	Europe	

522065	2020-04-03	Europe
...
559770	2020-05-08	Europe
559771	2020-03-02	Europe
561068	2020-03-10	Europe
561069	2020-04-15	Europe
561070	2020-03-04	Europe

	DATA_SOURCE_NAME \
522061	European Centre for Disease Prevention and Con...
522062	European Centre for Disease Prevention and Con...
522063	European Centre for Disease Prevention and Con...
522064	European Centre for Disease Prevention and Con...
522065	European Centre for Disease Prevention and Con...
...	...
559770	European Centre for Disease Prevention and Con...
559771	European Centre for Disease Prevention and Con...
561068	European Centre for Disease Prevention and Con...
561069	European Centre for Disease Prevention and Con...
561070	European Centre for Disease Prevention and Con...

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME \
522061	0	BLR	Belarus
522062	0	BLR	Belarus
522063	3	BLR	Belarus
522064	0	BLR	Belarus
522065	4	BLR	Belarus
...
559770	4	BLR	Belarus
559771	0	BLR	Belarus
561068	0	BLR	Belarus
561069	4	BLR	Belarus
561070	0	BLR	Belarus

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
522061	0	0
522062	0	0
522063	170	8
522064	0	0
522065	102	4
...
559770	913	116
559771	0	0
561068	0	0
561069	362	33
561070	3	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME \
522347	NaN	46516	NaN
522348	NaN	52746	NaN
522349	NaN	62210	NaN
522350	NaN	1	NaN
522351	NaN	60142	NaN
...
561202	NaN	59985	NaN
561203	NaN	1	NaN
561204	NaN	61209	NaN
561205	NaN	1	NaN
561206	NaN	0	NaN

	REPORT_DATE	CONTINENT_NAME	\
522347	2020-04-24	Europe	
522348	2020-05-07	Europe	
522349	2020-07-09	Europe	
522350	2020-02-14	Europe	
522351	2020-06-15	Europe	
...	
561202	2020-06-12	Europe	
561203	2020-02-18	Europe	
561204	2020-06-28	Europe	
561205	2020-02-09	Europe	
561206	2020-01-24	Europe	

	DATA_SOURCE_NAME	\
522347	European Centre for Disease Prevention and Con...	
522348	European Centre for Disease Prevention and Con...	
522349	European Centre for Disease Prevention and Con...	
522350	European Centre for Disease Prevention and Con...	
522351	European Centre for Disease Prevention and Con...	
...	...	
561202	European Centre for Disease Prevention and Con...	
561203	European Centre for Disease Prevention and Con...	
561204	European Centre for Disease Prevention and Con...	
561205	European Centre for Disease Prevention and Con...	
561206	European Centre for Disease Prevention and Con...	

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
522347	147	BEL	Belgium	
522348	78	BEL	Belgium	
522349	2	BEL	Belgium	
522350	0	BEL	Belgium	
522351	8	BEL	Belgium	
...	
561202	10	BEL	Belgium	
561203	0	BEL	Belgium	
561204	5	BEL	Belgium	
561205	0	BEL	Belgium	
561206	0	BEL	Belgium	

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
522347	968	7238
522348	551	8593
522349	87	9778
522350	0	0
522351	22	9678
...
561202	94	9662
561203	0	0
561204	103	9750
561205	0	0
561206	0	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
521560	NaN	18	NaN	
521561	NaN	18	NaN	
521562	NaN	18	NaN	
521563	NaN	18	NaN	
521564	NaN	18	NaN	

...
561287	NaN	0	NaN
561288	NaN	20	NaN
561289	NaN	18	NaN
561290	NaN	0	NaN
561291	NaN	0	NaN

	REPORT_DATE	CONTINENT_NAME	\
521560	2020-05-08	America	
521561	2020-05-26	America	
521562	2020-04-24	America	
521563	2020-05-14	America	
521564	2020-05-05	America	
...	
561287	2020-03-06	America	
561288	2020-06-13	America	
561289	2020-04-19	America	
561290	2020-01-21	America	
561291	2020-01-12	America	

	DATA_SOURCE_NAME	\
521560	European Centre for Disease Prevention and Con...	
521561	European Centre for Disease Prevention and Con...	
521562	European Centre for Disease Prevention and Con...	
521563	European Centre for Disease Prevention and Con...	
521564	European Centre for Disease Prevention and Con...	
...	...	
561287	European Centre for Disease Prevention and Con...	
561288	European Centre for Disease Prevention and Con...	
561289	European Centre for Disease Prevention and Con...	
561290	European Centre for Disease Prevention and Con...	
561291	European Centre for Disease Prevention and Con...	

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
521560	0	BLZ	Belize	
521561	0	BLZ	Belize	
521562	0	BLZ	Belize	
521563	0	BLZ	Belize	
521564	0	BLZ	Belize	
...	
561287	0	BLZ	Belize	
561288	0	BLZ	Belize	
561289	0	BLZ	Belize	
561290	0	BLZ	Belize	
561291	0	BLZ	Belize	

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521560	0	2
521561	0	2
521562	0	2
521563	0	2
521564	0	2
...
561287	0	0
561288	0	2
561289	0	2
561290	0	0
561291	0	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
521676	NaN	1053	NaN	
521677	NaN	0	NaN	
521678	NaN	1	NaN	
521679	NaN	327	NaN	
523105	NaN	0	NaN	
...	
560909	NaN	1187	NaN	
560910	NaN	16	NaN	
560911	NaN	572	NaN	
560912	NaN	135	NaN	
560913	NaN	37	NaN	

	REPORT_DATE	CONTINENT_NAME	\
521676	2020-06-27	Africa	
521677	2020-03-04	Africa	
521678	2020-03-17	Africa	
521679	2020-05-14	Africa	
523105	2020-03-10	Africa	
...	
560909	2020-06-30	Africa	
560910	2020-04-05	Africa	
560911	2020-06-18	Africa	
560912	2020-05-22	Africa	
560913	2020-04-19	Africa	

	DATA_SOURCE_NAME	\
521676	European Centre for Disease Prevention and Con...	
521677	European Centre for Disease Prevention and Con...	
521678	European Centre for Disease Prevention and Con...	
521679	European Centre for Disease Prevention and Con...	
523105	European Centre for Disease Prevention and Con...	
...	...	
560909	European Centre for Disease Prevention and Con...	
560910	European Centre for Disease Prevention and Con...	
560911	European Centre for Disease Prevention and Con...	
560912	European Centre for Disease Prevention and Con...	
560913	European Centre for Disease Prevention and Con...	

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
521676	0	BEN	Benin	
521677	0	BEN	Benin	
521678	0	BEN	Benin	
521679	0	BEN	Benin	
523105	0	BEN	Benin	
...	
560909	3	BEN	Benin	
560910	0	BEN	Benin	
560911	0	BEN	Benin	
560912	1	BEN	Benin	
560913	0	BEN	Benin	

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521676	36	14
521677	0	0
521678	1	0
521679	0	2
523105	0	0
...
560909	38	19

560910	0	0
560911	40	9
560912	5	3
560913	0	1

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
521453	NaN	146	NaN	
521454	NaN	114	NaN	
521455	NaN	146	NaN	
521456	NaN	2	NaN	
521457	NaN	149	NaN	
...	
560078	NaN	146	NaN	
560079	NaN	0	NaN	
560080	NaN	0	NaN	
561498	NaN	86	NaN	
561499	NaN	125	NaN	

	REPORT_DATE	CONTINENT_NAME	\
521453	2020-07-06	America	
521454	2020-05-02	America	
521455	2020-07-04	America	
521456	2020-03-21	America	
521457	2020-07-10	America	
...	
560078	2020-06-29	America	
560079	2020-02-09	America	
560080	2020-01-11	America	
561498	2020-04-21	America	
561499	2020-05-19	America	

	DATA_SOURCE_NAME	\
521453	European Centre for Disease Prevention and Con...	
521454	European Centre for Disease Prevention and Con...	
521455	European Centre for Disease Prevention and Con...	
521456	European Centre for Disease Prevention and Con...	
521457	European Centre for Disease Prevention and Con...	
...	...	
560078	European Centre for Disease Prevention and Con...	
560079	European Centre for Disease Prevention and Con...	
560080	European Centre for Disease Prevention and Con...	
561498	European Centre for Disease Prevention and Con...	
561499	European Centre for Disease Prevention and Con...	

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
521453	0	BMU	Bermuda	
521454	0	BMU	Bermuda	
521455	0	BMU	Bermuda	
521456	0	BMU	Bermuda	
521457	0	BMU	Bermuda	
...	
560078	0	BMU	Bermuda	
560079	0	BMU	Bermuda	
560080	0	BMU	Bermuda	
561498	0	BMU	Bermuda	
561499	0	BMU	Bermuda	

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521453	0	9

521454	0	6
521455	0	9
521456	0	0
521457	0	9
...
560078	0	9
560079	0	0
560080	0	0
561498	0	5
561499	2	9

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
521630	NaN	1	NaN	
521631	NaN	7	NaN	
521632	NaN	0	NaN	
521633	NaN	5	NaN	
521634	NaN	7	NaN	
...	
560606	NaN	9	NaN	
560607	NaN	1	NaN	
560608	NaN	78	NaN	
560609	NaN	0	NaN	
560610	NaN	62	NaN	

	REPORT_DATE	CONTINENT_NAME	\
521630	2020-03-18	Asia	
521631	2020-04-28	Asia	
521632	2020-02-28	Asia	
521633	2020-04-12	Asia	
521634	2020-05-10	Asia	
...	
560606	2020-05-11	Asia	
560607	2020-03-09	Asia	
560608	2020-07-05	Asia	
560609	2020-02-09	Asia	
560610	2020-06-12	Asia	

	DATA_SOURCE_NAME	\
521630	European Centre for Disease Prevention and Con...	
521631	European Centre for Disease Prevention and Con...	
521632	European Centre for Disease Prevention and Con...	
521633	European Centre for Disease Prevention and Con...	
521634	European Centre for Disease Prevention and Con...	
...	...	
560606	European Centre for Disease Prevention and Con...	
560607	European Centre for Disease Prevention and Con...	
560608	European Centre for Disease Prevention and Con...	
560609	European Centre for Disease Prevention and Con...	
560610	European Centre for Disease Prevention and Con...	

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
521630	0	BTN	Bhutan	
521631	0	BTN	Bhutan	
521632	0	BTN	Bhutan	
521633	0	BTN	Bhutan	
521634	0	BTN	Bhutan	
...	
560606	0	BTN	Bhutan	
560607	0	BTN	Bhutan	

560608	0	BTN	Bhutan
560609	0	BTN	Bhutan
560610	0	BTN	Bhutan

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521630	0	0
521631	0	0
521632	0	0
521633	0	0
521634	0	0
...
560606	2	0
560607	0	0
560608	0	0
560609	0	0
560610	0	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME \
521521	NaN	0	NaN
521522	NaN	5579	NaN
521523	NaN	10991	NaN
521524	NaN	0	NaN
521525	NaN	0	NaN
...
560685	NaN	38071	NaN
560686	NaN	0	NaN
560687	NaN	0	NaN
560688	NaN	0	NaN
560689	NaN	18459	NaN

	REPORT_DATE	CONTINENT_NAME \
521521	2020-02-23	America
521522	2020-05-23	America
521523	2020-06-03	America
521524	2020-02-07	America
521525	2020-01-09	America
...
560685	2020-07-05	America
560686	2020-02-01	America
560687	2020-02-05	America
560688	2020-01-25	America
560689	2020-06-15	America

	DATA_SOURCE_NAME \
521521	European Centre for Disease Prevention and Con...
521522	European Centre for Disease Prevention and Con...
521523	European Centre for Disease Prevention and Con...
521524	European Centre for Disease Prevention and Con...
521525	European Centre for Disease Prevention and Con...
...	...
560685	European Centre for Disease Prevention and Con...
560686	European Centre for Disease Prevention and Con...
560687	European Centre for Disease Prevention and Con...
560688	European Centre for Disease Prevention and Con...
560689	European Centre for Disease Prevention and Con...

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME \
521521	0	BOL	Bolivia
521522	15	BOL	Bolivia

521523	33	BOL	Bolivia
521524	0	BOL	Bolivia
521525	0	BOL	Bolivia
...
560685	58	BOL	Bolivia
560686	0	BOL	Bolivia
560687	0	BOL	Bolivia
560688	0	BOL	Bolivia
560689	26	BOL	Bolivia

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521521	0	0
521522	392	230
521523	460	376
521524	0	0
521525	0	0
...
560685	1253	1378
560686	0	0
560687	0	0
560688	0	0
560689	617	611

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME \
522564	NaN	0	NaN
522565	NaN	14	NaN
522566	NaN	16	NaN
522567	NaN	0	NaN
522568	NaN	0	NaN
...
561506	NaN	0	NaN
561507	NaN	28	NaN
561508	NaN	0	NaN
561509	NaN	0	NaN
561510	NaN	0	NaN

	REPORT_DATE	CONTINENT_NAME \
522564	2020-03-12	America
522565	2020-06-21	America
522566	2020-04-16	America
522567	2020-03-01	America
522568	2020-01-30	America
...
561506	2020-03-26	America
561507	2020-06-01	America
561508	2020-03-25	America
561509	2020-01-26	America
561510	2019-12-31	America

	DATA_SOURCE_NAME \
522564	European Centre for Disease Prevention and Con...
522565	European Centre for Disease Prevention and Con...
522566	European Centre for Disease Prevention and Con...
522567	European Centre for Disease Prevention and Con...
522568	European Centre for Disease Prevention and Con...
...	...
561506	European Centre for Disease Prevention and Con...
561507	European Centre for Disease Prevention and Con...
561508	European Centre for Disease Prevention and Con...

561509 European Centre for Disease Prevention and Con...
 561510 European Centre for Disease Prevention and Con...

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	\
522564	0	BES	
522565	0	BES	
522566	0	BES	
522567	0	BES	
522568	0	BES	
...	
561506	0	BES	
561507	0	BES	
561508	0	BES	
561509	0	BES	
561510	0	BES	

	COUNTRY_SHORT_NAME	PEOPLE_POSITIVE_NEW_CASES_COUNT	\
522564	Bonaire, Saint Eustatius and Saba	0	
522565	Bonaire, Saint Eustatius and Saba	0	
522566	Bonaire, Saint Eustatius and Saba	0	
522567	Bonaire, Saint Eustatius and Saba	0	
522568	Bonaire, Saint Eustatius and Saba	0	
...	
561506	Bonaire, Saint Eustatius and Saba	0	
561507	Bonaire, Saint Eustatius and Saba	0	
561508	Bonaire, Saint Eustatius and Saba	0	
561509	Bonaire, Saint Eustatius and Saba	0	
561510	Bonaire, Saint Eustatius and Saba	0	

	PEOPLE_DEATH_COUNT
522564	0
522565	0
522566	0
522567	0
522568	0
...	...
561506	0
561507	0
561508	0
561509	0
561510	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
521407	NaN	2216	NaN	
521408	NaN	1210	NaN	
521409	NaN	2523	NaN	
521410	NaN	1926	NaN	
521422	NaN	229	NaN	
...	
560466	NaN	1028	NaN	
560467	NaN	2070	NaN	
560468	NaN	632	NaN	
560469	NaN	2416	NaN	
560470	NaN	0	NaN	

	REPORT_DATE	CONTINENT_NAME	\
521407	2020-05-15	Europe	
521408	2020-04-18	Europe	
521409	2020-06-02	Europe	

521410	2020-05-05	Europe
521422	2020-03-28	Europe
...
560466	2020-04-14	Europe
560467	2020-05-09	Europe
560468	2020-04-05	Europe
560469	2020-05-27	Europe
560470	2020-01-14	Europe

	DATA_SOURCE_NAME \
521407	European Centre for Disease Prevention and Con...
521408	European Centre for Disease Prevention and Con...
521409	European Centre for Disease Prevention and Con...
521410	European Centre for Disease Prevention and Con...
521422	European Centre for Disease Prevention and Con...
...	...
560466	European Centre for Disease Prevention and Con...
560467	European Centre for Disease Prevention and Con...
560468	European Centre for Disease Prevention and Con...
560469	European Centre for Disease Prevention and Con...
560470	European Centre for Disease Prevention and Con...

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME \
521407	3	BIH	Bosnia and Herzegovina
521408	3	BIH	Bosnia and Herzegovina
521409	0	BIH	Bosnia and Herzegovina
521410	1	BIH	Bosnia and Herzegovina
521422	0	BIH	Bosnia and Herzegovina
...
560466	0	BIH	Bosnia and Herzegovina
560467	8	BIH	Bosnia and Herzegovina
560468	3	BIH	Bosnia and Herzegovina
560469	3	BIH	Bosnia and Herzegovina
560470	0	BIH	Bosnia and Herzegovina

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521407	35	123
521408	58	44
521409	14	153
521410	69	78
521422	48	3
...
560466	21	38
560467	43	98
560468	46	21
560469	10	149
560470	0	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME \
521614	NaN	0	NaN
521615	NaN	13	NaN
521616	NaN	24	NaN
521617	NaN	0	NaN
521618	NaN	23	NaN
...
559078	NaN	23	NaN
559079	NaN	314	NaN
560304	NaN	40	NaN
560305	NaN	0	NaN

560317	NaN	0	NaN
--------	-----	---	-----

	REPORT_DATE	CONTINENT_NAME	\
521614	2020-02-26	Africa	
521615	2020-04-11	Africa	
521616	2020-05-14	Africa	
521617	2020-03-16	Africa	
521618	2020-05-01	Africa	
...	
559078	2020-04-30	Africa	
559079	2020-07-10	Africa	
560304	2020-06-04	Africa	
560305	2020-03-30	Africa	
560317	2020-01-14	Africa	

	DATA_SOURCE_NAME	\
521614	European Centre for Disease Prevention and Con...	
521615	European Centre for Disease Prevention and Con...	
521616	European Centre for Disease Prevention and Con...	
521617	European Centre for Disease Prevention and Con...	
521618	European Centre for Disease Prevention and Con...	
...	...	
559078	European Centre for Disease Prevention and Con...	
559079	European Centre for Disease Prevention and Con...	
560304	European Centre for Disease Prevention and Con...	
560305	European Centre for Disease Prevention and Con...	
560317	European Centre for Disease Prevention and Con...	

	PEOPLE_DEATH_NEW_COUNT	COUNTRY_ALPHA_3_CODE	COUNTRY_SHORT_NAME	\
521614	0	BWA	Botswana	
521615	0	BWA	Botswana	
521616	0	BWA	Botswana	
521617	0	BWA	Botswana	
521618	0	BWA	Botswana	
...	
559078	0	BWA	Botswana	
559079	0	BWA	Botswana	
560304	0	BWA	Botswana	
560305	0	BWA	Botswana	
560317	0	BWA	Botswana	

	PEOPLE_POSITIVE_NEW_CASES_COUNT	PEOPLE_DEATH_COUNT
521614	0	0
521615	0	1
521616	0	1
521617	0	0
521618	0	1
...
559078	0	1
559079	0	1
560304	2	1
560305	0	0
560317	0	0

[198 rows x 11 columns]

	COUNTY_NAME	PEOPLE_POSITIVE_CASES_COUNT	PROVINCE_STATE_NAME	\
522217	NaN	498440	NaN	
522218	NaN	1	NaN	
522219	NaN	234	NaN	
523610	NaN	91589	NaN	