

```
#Import Python Libraries
import numpy as np
import scipy as sp
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

# Enable inline plotting
%matplotlib inline

import pandas as pd
df = pd.read_csv('covid_19_india.csv', encoding= 'unicode_escape')

df
```

```

#Display a few first records
df.head(10)

```

	i»¿Sno	Date	Time	State/UnionTerritory	ConfirmedIndianNational	ConfirmedForeignNational	Cured
0	1	30/01/20	6:00 PM	Kerala	1	0	0
1	2	31/01/20	6:00 PM	Kerala	1	0	0
2	3	01/02/20	6:00 PM	Kerala	2	0	0
3	4	02/02/20	6:00 PM	Kerala	3	0	0
4	5	03/02/20	6:00 PM	Kerala	3	0	0
5	6	04/02/20	6:00 PM	Kerala	3	0	0
6	7	05/02/20	6:00 PM	Kerala	3	0	0
7	8	06/02/20	6:00 PM	Kerala	3	0	0
8	9	07/02/20	6:00 PM	Kerala	3	0	0
9	10	08/02/20	6:00 PM	Kerala	3	0	0



```

# Display structure of the data frame
df.info()

```

```

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 2450 entries, 0 to 2449
Data columns (total 9 columns):
#   Column                                Non-Null Count  Dtype
---  -
0   i»¿Sno                                2450 non-null   int64
1   Date                                  2450 non-null   object
2   Time                                  2450 non-null   object
3   State/UnionTerritory                 2450 non-null   object
4   ConfirmedIndianNational              2450 non-null   object
5   ConfirmedForeignNational             2450 non-null   object
6   Cured                                2450 non-null   int64

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7   Deaths                2450 non-null    int64
8   Confirmed              2450 non-null    int64
dtypes: int64(4), object(5)
memory usage: 172.4+ KB

```

```
df.shape
```

```
(2450, 9)
```

```
df.size
```

```
22050
```

```
df1=df.drop('i»¿Sno', axis=1)
```

```
#Output basic statistics for the numeric columns
df1.info()
```

```

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 2450 entries, 0 to 2449
Data columns (total 8 columns):
#   Column                                Non-Null Count  Dtype
---  -
0   Date                                  2450 non-null   object
1   Time                                  2450 non-null   object
2   State/UnionTerritory                 2450 non-null   object
3   ConfirmedIndianNational              2450 non-null   object
4   ConfirmedForeignNational             2450 non-null   object
5   Cured                                2450 non-null   int64
6   Deaths                              2450 non-null   int64
7   Confirmed                            2450 non-null   int64
dtypes: int64(3), object(5)
memory usage: 153.2+ KB

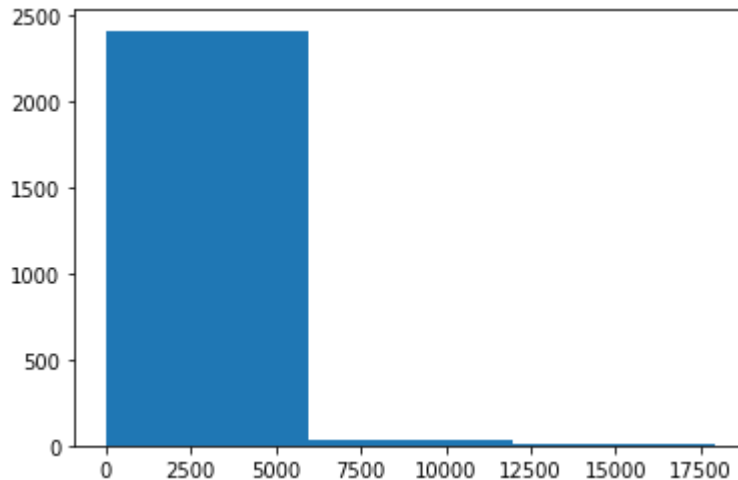
```

```
df1.describe()
```

Cured Deaths Confirmed 

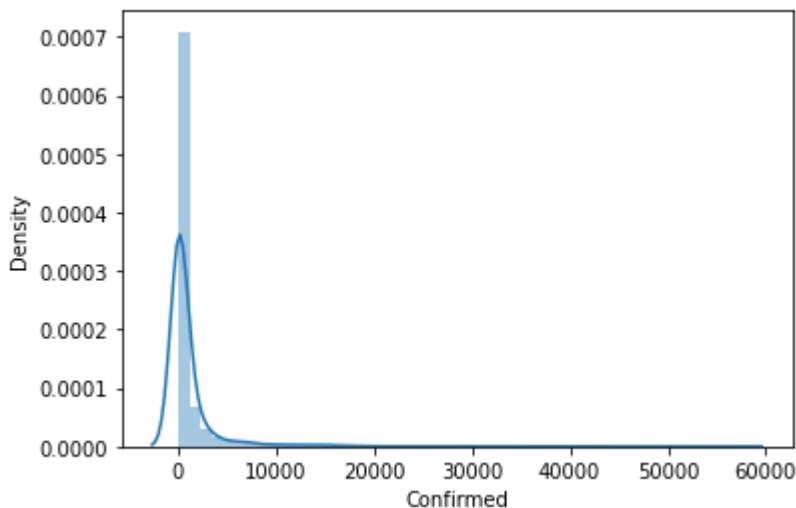
```
#Use matplotlib to draw a histogram of a Cured data
plt.hist(df['Cured'],bins=3, density=False)
```

```
(array([2415., 28., 7.]),
 array([ 0., 5972.66666667, 11945.33333333, 17918.      ]),
 <a list of 3 Patch objects>)
```



```
#Use seaborn package to draw a histogram
sns.distplot(df['Confirmed']);
```

```
/usr/local/lib/python3.8/dist-packages/seaborn/distributions.py:2619: FutureWarning:
warnings.warn(msg, FutureWarning)
```



```
# Use regular matplotlib function to display a barplot
df.groupby(['Cured'])['Deaths'].count().plot(kind='bar')
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f2213e120d0>
```



```
# Use seaborn package to display a barplot  
sns.set_style("whitegrid")
```

Cured

```
# Split into 2 groups:
```

```
ax = sns.barplot(x='Cured', y='Deaths', data=df1, estimator=len)
```



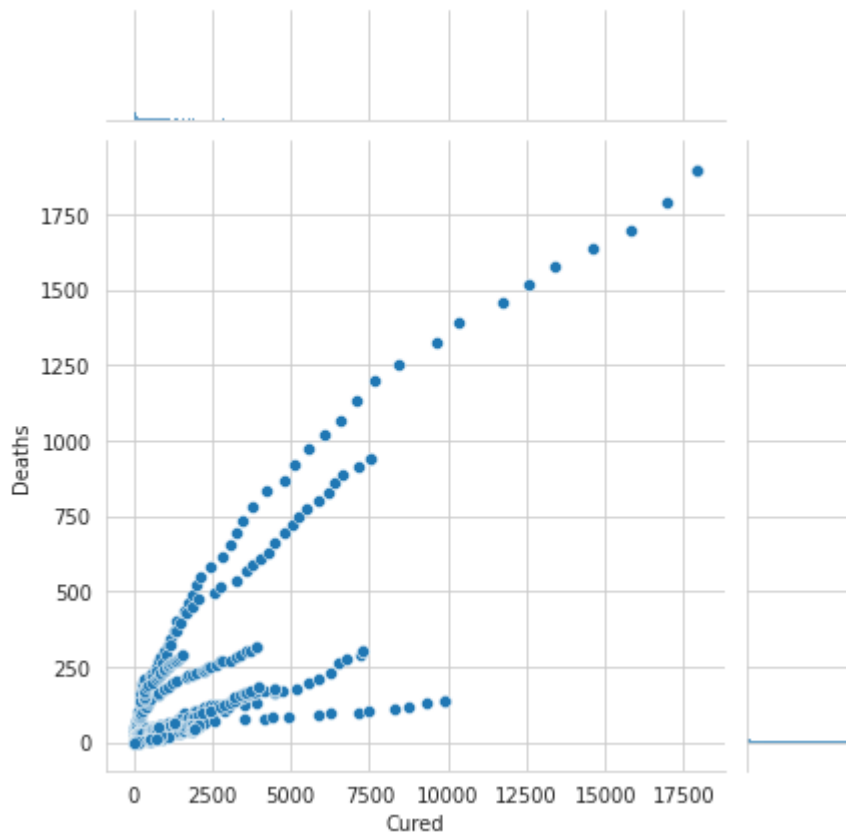
```
sns.scatterplot(x='Cured', y='Deaths', data=df1)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7f220b192760>
```

```
#Scatterplot in seaborn
```

```
sns.jointplot(x='Cured', y='Deaths', data=df1)
```

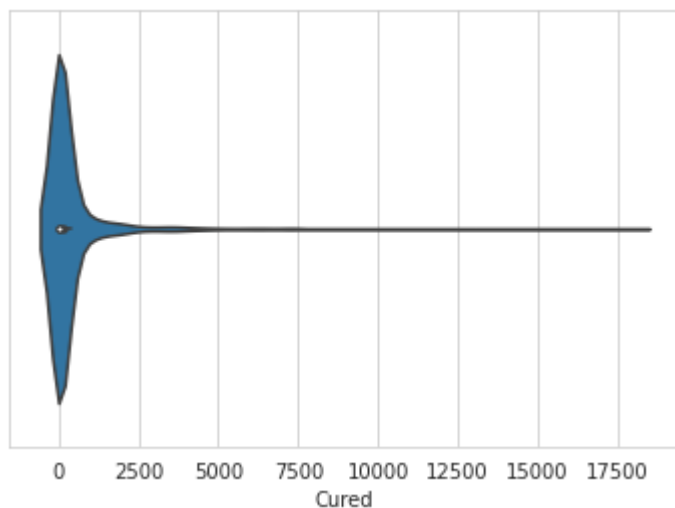
```
<seaborn.axisgrid.JointGrid at 0x7f220b2dd400>
```



```
#Violinplot
```

```
sns.violinplot(x = "Cured", data=df1)
```

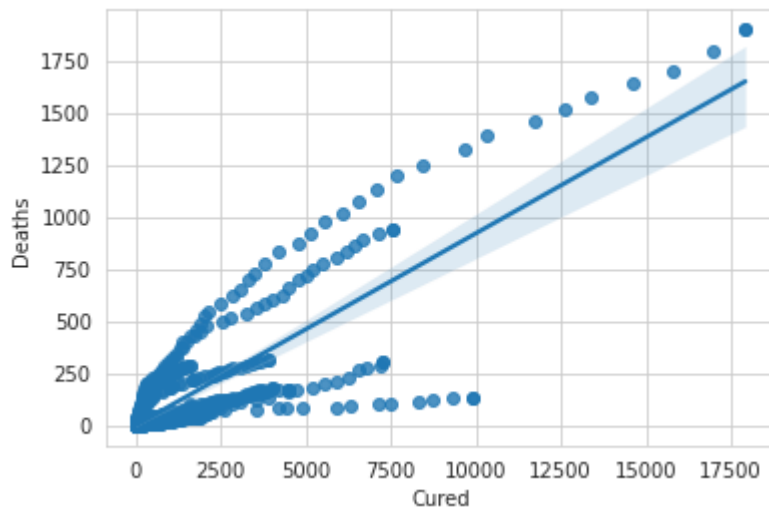
```
<matplotlib.axes._subplots.AxesSubplot at 0x7f2211f04280>
```



```
#If we are interested in linear regression plot for 2 numeric variables we can use regplot
```

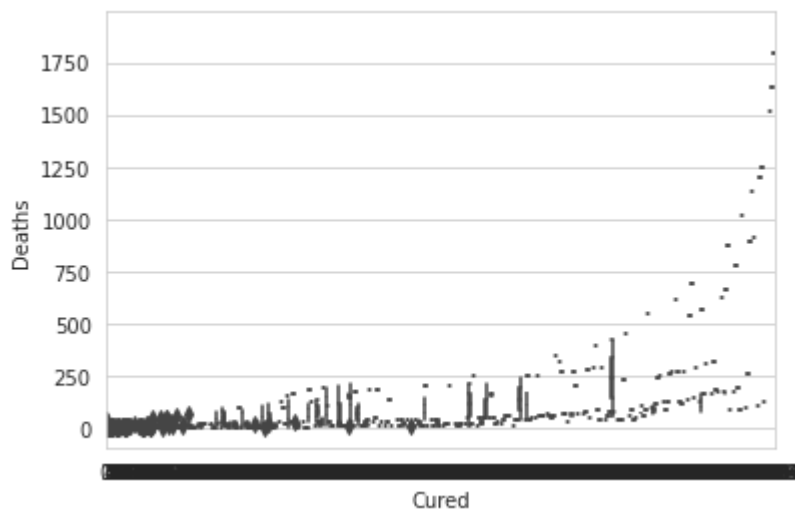
```
sns.regplot(x='Cured', y='Deaths', data=df1)
```

<matplotlib.axes._subplots.AxesSubplot at 0x7f221204b700>



```
# box plot
sns.boxplot(x='Cured',y='Deaths', data=df1)
```

<matplotlib.axes._subplots.AxesSubplot at 0x7f221210ac40>



```
# swarm plot
sns.swarmplot(x='Cured',y='Deaths', data=df1)
```

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/usr/local/lib/python3.8/dist-packages/seaborn/categorical.py:1296: UserWarning: 5
  warnings.warn(msg, UserWarning)
/usr/local/lib/python3.8/dist-packages/seaborn/categorical.py:1296: UserWarning: 7
  warnings.warn(msg, UserWarning)
/usr/local/lib/python3.8/dist-packages/seaborn/categorical.py:1296: UserWarning: 7
  warnings.warn(msg, UserWarning)
/usr/local/lib/python3.8/dist-packages/seaborn/categorical.py:1296: UserWarning: 6
  warnings.warn(msg, UserWarning)
/usr/local/lib/python3.8/dist-packages/seaborn/categorical.py:1296: UserWarning: 3
  warnings.warn(msg, UserWarning)
<matplotlib.axes._subplots.AxesSubplot at 0x7f2206c364f0>

```



```

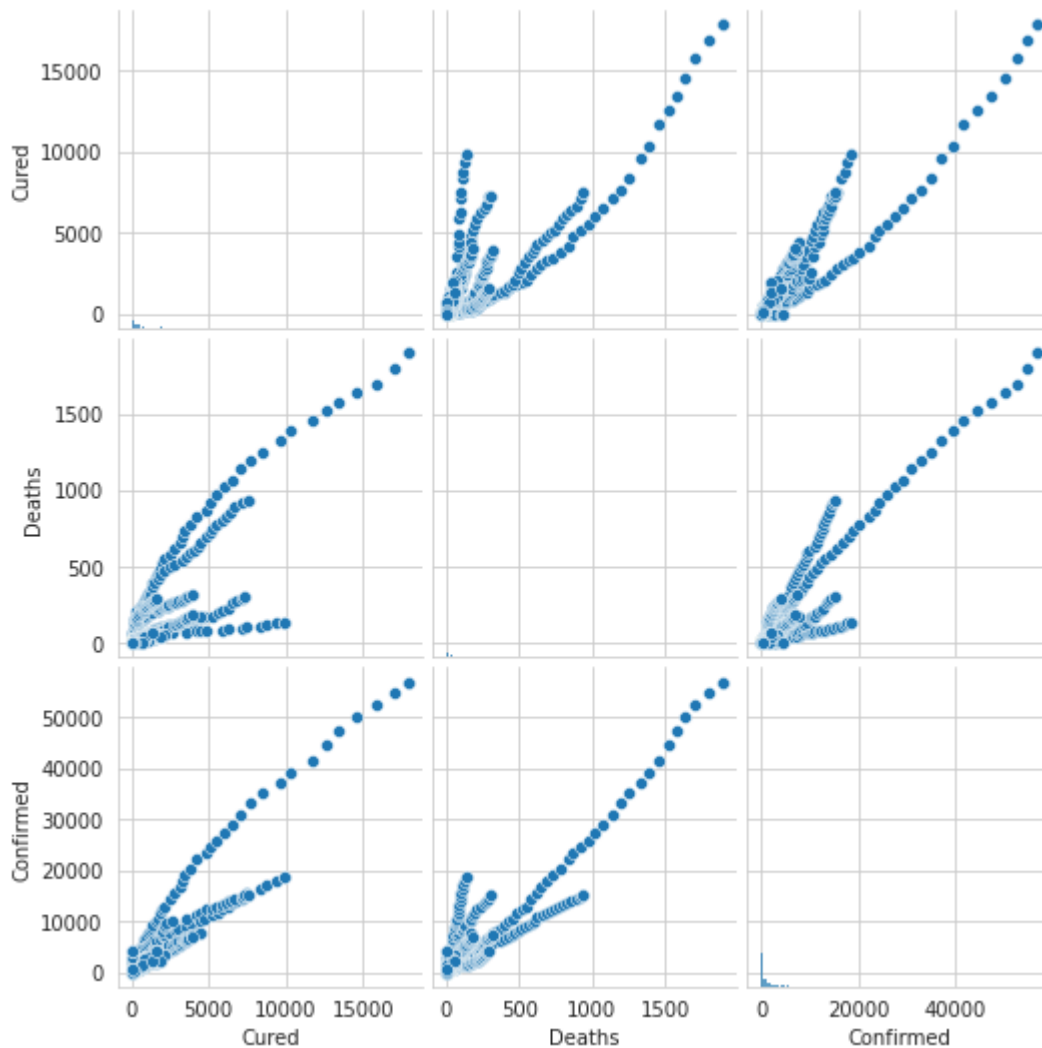
# Pairplot
sns.pairplot(df1)

```

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<seaborn.axisgrid.PairGrid at 0x7f2206c861f0>

```



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