

In [1]:

```
import pandas as pd
```

In [2]:

```
df=pd.read_csv(r"C:\Users\user\Desktop\Datasets\covid_19_india.csv")
```

In [3]:

```
df.head(3)
```

Out[3]:

	Sno	Date	Time	State/UnionTerritory	ConfirmedIndianNational	ConfirmedForeignNational	C
0	1	2020-01-30	6:00 PM	Kerala	1	0	
1	2	2020-01-31	6:00 PM	Kerala	1	0	
2	3	2020-02-01	6:00 PM	Kerala	2	0	

In [4]:

```
covid=df[['Date', 'State/UnionTerritory', 'Cured', 'Deaths', 'Confirmed']]
```

In [5]:

```
df1=covid[['State/UnionTerritory', 'Confirmed']]
```

In [6]:

```
all_state_data=df1.groupby('State/UnionTerritory').sum()  
all_state_data
```

Out[6]:

	Confirmed
State/UnionTerritory	
Andaman and Nicobar Islands	1938498
Andhra Pradesh	392432753
Arunachal Pradesh	7176907
Assam	99837011
Bihar	132231166
Bihar****	1430909
Cases being reassigned to states	345565
Chandigarh	10858627
Chhattisgarh	163776262
Dadra and Nagar Haveli	20722
Dadra and Nagar Haveli and Daman and Diu	1938632
Daman & Diu	2
Delhi	287227765
Goa	28240159
Gujarat	143420082
Haryana	134347285
Himachal Pradesh	30033289
Himanchal Pradesh	204516
Jammu and Kashmir	58117726
Jharkhand	62111994
Karnataka	2885238
Karnataka	485970693
Kerala	458906023
Ladakh	4054293
Lakshadweep	915784
Madhya Pradesh	135625265
Madhya Pradesh***	791656
Maharashtra	1121491467
Maharashtra***	6229596
Manipur	12617943
Meghalaya	7355969
Mizoram	2984732
Nagaland	5041742
Odisha	160130533
Puducherry	20065891

	Confirmed
State/UnionTerritory	
Punjab	99949702
Rajasthan	162369656
Sikkim	3186799
Tamil Nadu	431928644
Telangana	60571979
Telengana	69990668
Tripura	14050250
Unassigned	161
Uttar Pradesh	312625843
Uttarakhand	53140414
West Bengal	263107876

In [7]:

```
all_state_data[all_state_data['Confirmed']<100000]
```

Out[7]:

	Confirmed
State/UnionTerritory	
Dadra and Nagar Haveli	20722
Daman & Diu	2
Unassigned	161

In [8]:

```
all_state_data[all_state_data['Confirmed']>=3000000]
```

Out[8]:

	Confirmed
State/UnionTerritory	
Andhra Pradesh	392432753
Arunachal Pradesh	7176907
Assam	99837011
Bihar	132231166
Chandigarh	10858627
Chhattisgarh	163776262
Delhi	287227765
Goa	28240159
Gujarat	143420082
Haryana	134347285
Himachal Pradesh	30033289
Jammu and Kashmir	58117726
Jharkhand	62111994
Karnataka	485970693
Kerala	458906023
Ladakh	4054293
Madhya Pradesh	135625265
Maharashtra	1121491467
Maharashtra***	6229596
Manipur	12617943
Meghalaya	7355969
Nagaland	5041742
Odisha	160130533
Puducherry	20065891
Punjab	99949702
Rajasthan	162369656
Sikkim	3186799
Tamil Nadu	431928644
Telangana	60571979
Telengana	69990668
Tripura	14050250
Uttar Pradesh	312625843
Uttarakhand	53140414
West Bengal	263107876

In [9]:

```
all_state_sort=all_state_data.sort_values(by="Confirmed",ascending=False)
```

In [10]:

```
top_five_state=all_state_sort[0:5]
```

In [11]:

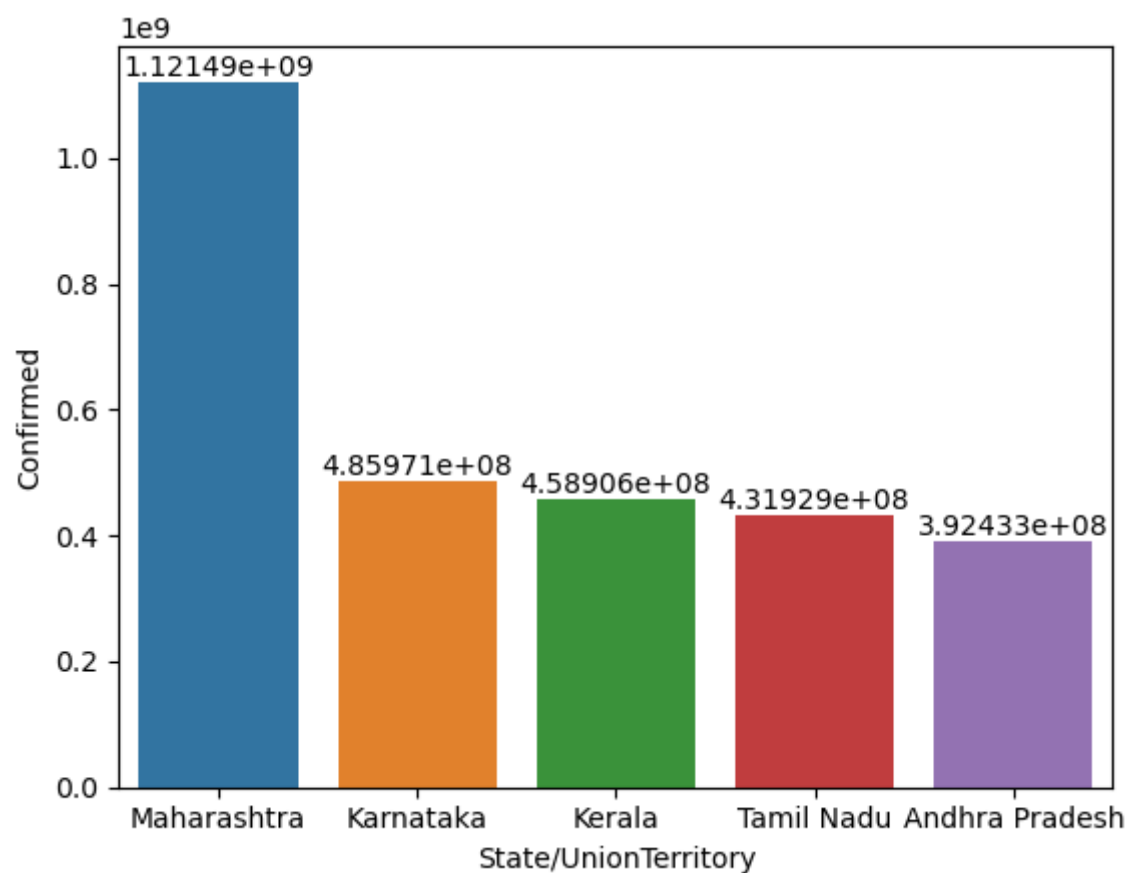
```
top_five_state
```

Out[11]:

	Confirmed
State/UnionTerritory	
Maharashtra	1121491467
Karnataka	485970693
Kerala	458906023
Tamil Nadu	431928644
Andhra Pradesh	392432753

In [12]:

```
import seaborn as sns
ax=sns.barplot(x=top_five_state.index,y="Confirmed",data=top_five_state)
for i in ax.containers:
    ax.bar_label(i,)
```



In [13]:

```
covid.head()
```

Out[13]:

	Date	State/UnionTerritory	Cured	Deaths	Confirmed
0	2020-01-30	Kerala	0	0	1
1	2020-01-31	Kerala	0	0	1
2	2020-02-01	Kerala	0	0	2
3	2020-02-02	Kerala	0	0	3
4	2020-02-03	Kerala	0	0	3

In [19]:

```
import datetime
covid['Year']=pd.DatetimeIndex(covid['Date']).year
```

C:\Users\user\AppData\Local\Temp\ipykernel_11128\4105084361.py:2: SettingWithCopyWarning:

A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

```
covid['Year']=pd.DatetimeIndex(covid['Date']).year
```

In [20]:

```
covid
```

Out[20]:

	Date	State/UnionTerritory	Cured	Deaths	Confirmed	Year
0	2020-01-30	Kerala	0	0	1	2020
1	2020-01-31	Kerala	0	0	1	2020
2	2020-02-01	Kerala	0	0	2	2020
3	2020-02-02	Kerala	0	0	3	2020
4	2020-02-03	Kerala	0	0	3	2020
...
18105	2021-08-11	Telangana	638410	3831	650353	2021
18106	2021-08-11	Tripura	77811	773	80660	2021
18107	2021-08-11	Uttarakhand	334650	7368	342462	2021
18108	2021-08-11	Uttar Pradesh	1685492	22775	1708812	2021
18109	2021-08-11	West Bengal	1506532	18252	1534999	2021

18110 rows × 6 columns

In [21]:

```
covid['Month']=pd.DatetimeIndex(covid['Date']).month
```

C:\Users\user\AppData\Local\Temp\ipykernel_11128\4257413360.py:1: SettingWithCopyWarning:

A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

```
covid['Month']=pd.DatetimeIndex(covid['Date']).month
```

In [22]:

```
covid.head()
```

Out[22]:

	Date	State/UnionTerritory	Cured	Deaths	Confirmed	Year	Month
0	2020-01-30	Kerala	0	0	1	2020	1
1	2020-01-31	Kerala	0	0	1	2020	1
2	2020-02-01	Kerala	0	0	2	2020	2
3	2020-02-02	Kerala	0	0	3	2020	2
4	2020-02-03	Kerala	0	0	3	2020	2

In [23]:

```
covid['Year'].unique()
```

Out[23]:

```
array([2020, 2021], dtype=int64)
```

In [24]:

```
covid['State/UnionTerritory'].unique()
```

Out[24]:

```
array(['Kerala', 'Telengana', 'Delhi', 'Rajasthan', 'Uttar Pradesh',  
      'Haryana', 'Ladakh', 'Tamil Nadu', 'Karnataka', 'Maharashtra',  
      'Punjab', 'Jammu and Kashmir', 'Andhra Pradesh', 'Uttarakhand',  
      'Odisha', 'Puducherry', 'West Bengal', 'Chhattisgarh',  
      'Chandigarh', 'Gujarat', 'Himachal Pradesh', 'Madhya Pradesh',  
      'Bihar', 'Manipur', 'Mizoram', 'Andaman and Nicobar Islands',  
      'Goa', 'Unassigned', 'Assam', 'Jharkhand', 'Arunachal Pradesh',  
      'Tripura', 'Nagaland', 'Meghalaya',  
      'Dadra and Nagar Haveli and Daman and Diu',  
      'Cases being reassigned to states', 'Sikkim', 'Daman & Diu',  
      'Lakshadweep', 'Telangana', 'Dadra and Nagar Haveli', 'Bihar***',  
      *',  
      'Madhya Pradesh***', 'Himanchal Pradesh', 'Karnataka',  
      'Maharashtra***'], dtype=object)
```

In [25]:

```
covid.head()
```

Out[25]:

	Date	State/UnionTerritory	Cured	Deaths	Confirmed	Year	Month
0	2020-01-30	Kerala	0	0	1	2020	1
1	2020-01-31	Kerala	0	0	1	2020	1
2	2020-02-01	Kerala	0	0	2	2020	2
3	2020-02-02	Kerala	0	0	3	2020	2
4	2020-02-03	Kerala	0	0	3	2020	2

In [26]:

```
yearReport=covid[['Confirmed','Year']]
```

In [29]:

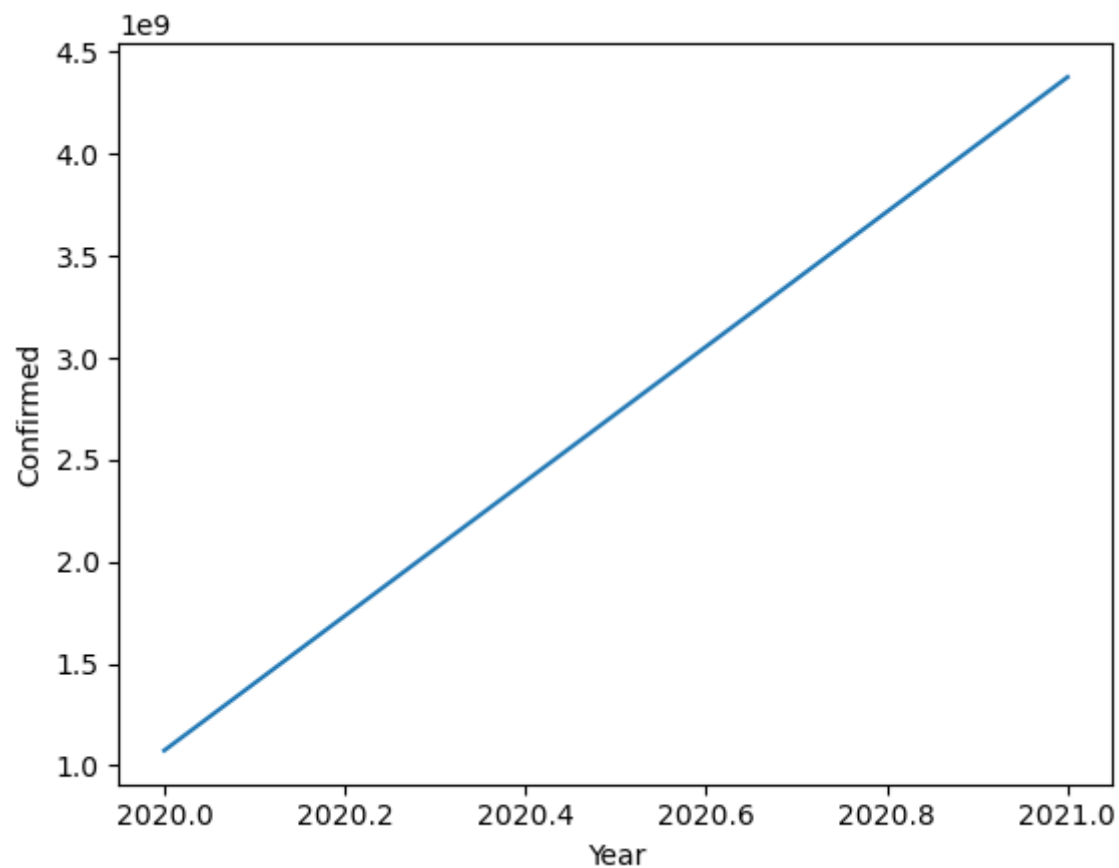
```
year=yearReport.groupby('Year').sum()
```

In [31]:

```
sns.lineplot(x=year.index,y="Confirmed",data=year)
```

Out[31]:

<AxesSubplot:xlabel='Year', ylabel='Confirmed'>



In [34]:

```
har=covid[covid['State/UnionTerritory']=="Haryana"]
```

In [35]:

```
har.head()
```

Out[35]:

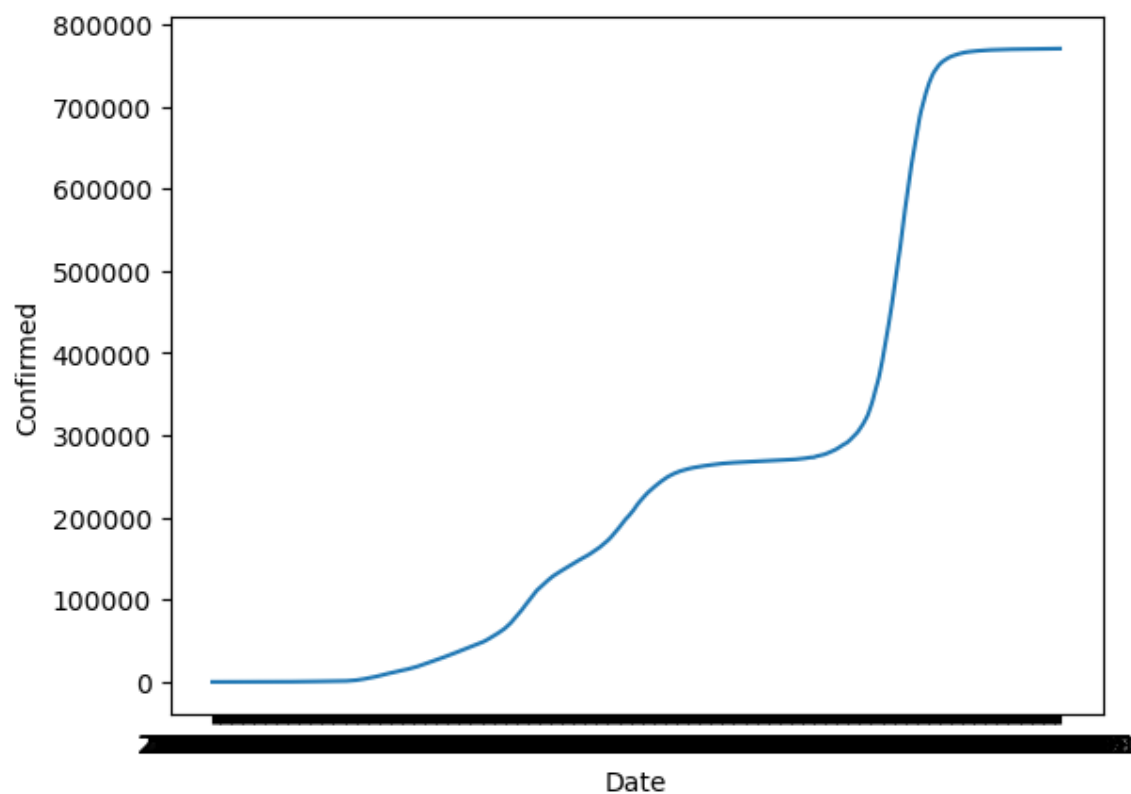
	Date	State/UnionTerritory	Cured	Deaths	Confirmed	Year	Month
41	2020-03-04	Haryana	0	0	2	2020	3
46	2020-03-05	Haryana	0	0	2	2020	3
52	2020-03-06	Haryana	0	0	2	2020	3
63	2020-03-07	Haryana	0	0	2	2020	3
70	2020-03-08	Haryana	0	0	2	2020	3

In [36]:

```
sns.lineplot(x='Date',y='Confirmed',data=har)
```

Out[36]:

<AxesSubplot:xlabel='Date', ylabel='Confirmed'>



In [38]:

```
har.tail(7)
```

Out[38]:

	Date	State/UnionTerritory	Cured	Deaths	Confirmed	Year	Month
17869	2021-08-05	Haryana	759653	9644	770009	2021	8
17905	2021-08-06	Haryana	759678	9646	770027	2021	8
17941	2021-08-07	Haryana	759705	9647	770042	2021	8
17977	2021-08-08	Haryana	759727	9648	770060	2021	8
18013	2021-08-09	Haryana	759751	9649	770079	2021	8
18049	2021-08-10	Haryana	759769	9650	770091	2021	8
18085	2021-08-11	Haryana	759790	9652	770114	2021	8

In [42]:

```
week=har.query('Date>="2021-08-05" and Date<="2021-08-08"')  
week
```

Out[42]:

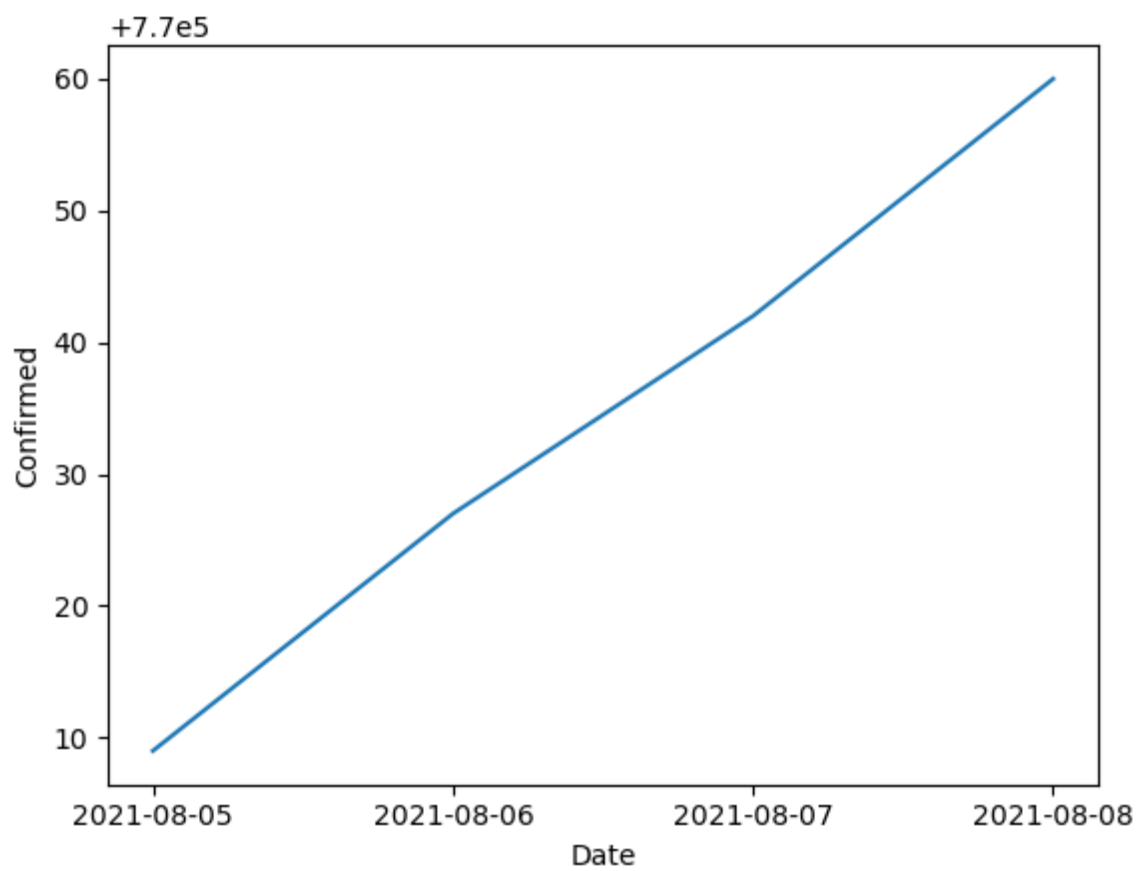
	Date	State/UnionTerritory	Cured	Deaths	Confirmed	Year	Month
17869	2021-08-05	Haryana	759653	9644	770009	2021	8
17905	2021-08-06	Haryana	759678	9646	770027	2021	8
17941	2021-08-07	Haryana	759705	9647	770042	2021	8
17977	2021-08-08	Haryana	759727	9648	770060	2021	8

In [43]:

```
sns.lineplot(x='Date',y='Confirmed',data=week)
```

Out[43]:

<AxesSubplot:xlabel='Date', ylabel='Confirmed'>



In [48]:

```
covid['Month'].replace(1, "Jan", inplace=True)
covid['Month'].replace(2, "Feb", inplace=True)
covid['Month'].replace(3, "Mar", inplace=True)
covid['Month'].replace(4, "Apr", inplace=True)
covid['Month'].replace(5, "Jan", inplace=True)
covid['Month'].replace(6, "Jan", inplace=True)
covid['Month'].replace(7, "Jan", inplace=True)
covid['Month'].replace(8, "Jan", inplace=True)
covid['Month'].replace(9, "Jan", inplace=True)
covid['Month'].replace(10, "Jan", inplace=True)
covid['Month'].replace(11, "Jan", inplace=True)
covid['Month'].replace(12, "Jan", inplace=True)
```

C:\Users\user\AppData\Local\Temp\ipykernel_11128\1246591939.py:1: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

```
covid['Month'].replace(1,"Jan",inplace=True)
```

C:\Users\user\AppData\Local\Temp\ipykernel_11128\1246591939.py:2: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

```
covid['Month'].replace(2,"Feb",inplace=True)
```

C:\Users\user\AppData\Local\Temp\ipykernel_11128\1246591939.py:3: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

```
covid['Month'].replace(3,"Mar",inplace=True)
```

C:\Users\user\AppData\Local\Temp\ipykernel_11128\1246591939.py:4: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

```
covid['Month'].replace(4,"Apr",inplace=True)
```

C:\Users\user\AppData\Local\Temp\ipykernel_11128\1246591939.py:5: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

```
covid['Month'].replace(5,"Jan",inplace=True)
```

C:\Users\user\AppData\Local\Temp\ipykernel_11128\1246591939.py:6: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

```
covid['Month'].replace(6,"Jan",inplace=True)
```

C:\Users\user\AppData\Local\Temp\ipykernel_11128\1246591939.py:7: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

ing-a-view-versus-a-copy)

```
covid['Month'].replace(7,"Jan",inplace=True)
```

C:\Users\user\AppData\Local\Temp\ipykernel_11128\1246591939.py:8: SettingWithCopyWarning:

A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

```
covid['Month'].replace(8,"Jan",inplace=True)
```

C:\Users\user\AppData\Local\Temp\ipykernel_11128\1246591939.py:9: SettingWithCopyWarning:

A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

```
covid['Month'].replace(9,"Jan",inplace=True)
```

C:\Users\user\AppData\Local\Temp\ipykernel_11128\1246591939.py:10: SettingWithCopyWarning:

A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

```
covid['Month'].replace(10,"Jan",inplace=True)
```

C:\Users\user\AppData\Local\Temp\ipykernel_11128\1246591939.py:11: SettingWithCopyWarning:

A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

```
covid['Month'].replace(11,"Jan",inplace=True)
```

C:\Users\user\AppData\Local\Temp\ipykernel_11128\1246591939.py:12: SettingWithCopyWarning:

A value is trying to be set on a copy of a slice from a DataFrame

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user_guide/indexing.html#returning-a-view-versus-a-copy)

```
covid['Month'].replace(12,"Jan",inplace=True)
```

In [46]:

```
covid
```

Out[46]:

	Date	State/UnionTerritory	Cured	Deaths	Confirmed	Year	Month
0	2020-01-30	Kerala	0	0	1	2020	Jan
1	2020-01-31	Kerala	0	0	1	2020	Jan
2	2020-02-01	Kerala	0	0	2	2020	2
3	2020-02-02	Kerala	0	0	3	2020	2
4	2020-02-03	Kerala	0	0	3	2020	2
...
18105	2021-08-11	Telangana	638410	3831	650353	2021	8
18106	2021-08-11	Tripura	77811	773	80660	2021	8
18107	2021-08-11	Uttarakhand	334650	7368	342462	2021	8
18108	2021-08-11	Uttar Pradesh	1685492	22775	1708812	2021	8
18109	2021-08-11	West Bengal	1506532	18252	1534999	2021	8

18110 rows × 7 columns

In [49]:

```
covid
```

Out[49]:

	Date	State/UnionTerritory	Cured	Deaths	Confirmed	Year	Month
0	2020-01-30	Kerala	0	0	1	2020	Jan
1	2020-01-31	Kerala	0	0	1	2020	Jan
2	2020-02-01	Kerala	0	0	2	2020	Feb
3	2020-02-02	Kerala	0	0	3	2020	Feb
4	2020-02-03	Kerala	0	0	3	2020	Feb
...
18105	2021-08-11	Telangana	638410	3831	650353	2021	Jan
18106	2021-08-11	Tripura	77811	773	80660	2021	Jan
18107	2021-08-11	Uttarakhand	334650	7368	342462	2021	Jan
18108	2021-08-11	Uttar Pradesh	1685492	22775	1708812	2021	Jan
18109	2021-08-11	West Bengal	1506532	18252	1534999	2021	Jan

18110 rows × 7 columns

In []: