```
import numpy as np
import pandas as pd
import seaborn as sns
from matplotlib import pyplot as plt
import datetime as dt

covid=pd.read_csv("covid_19new.csv",parse_dates=["Date"],dayfirst=True)
covid
```

	Sno	Date	Time	State	ConfirmedIndianNational	ConfirmedForeignNational	Cured	Deaths	Confirmed
0	1	2020-01-30	6:00 PM	Kerala	1	0	0	0	1
1	2	2020-01-31	6:00 PM	Kerala	1	0	0	0	1
2	3	2020-02-01	6:00 PM	Kerala	2	0	0	0	2
3	4	2020-02-02	6:00 PM	Kerala	3	0	0	0	3
4	5	2020-02-03	6:00 PM	Kerala	3	0	0	0	3
...	...	...	...	...	...	...	...	...	...
18105	18106	2021-08-11	8:00 AM	Telangana	-	-	638410	3831	650353
18106	18107	2021-08-11	8:00 AM	Tripura	-	-	77811	773	80660
18107	18108	2021-08-11	8:00 AM	Uttarakhand	-	-	334650	7368	342462
18108	18109	2021-08-11	8:00 AM	Uttar Pradesh	-	-	1685492	22775	1708812
18109	18110	2021-08-11	8:00 AM	West Bengal	-	-	1506532	18252	1534999

18110 rows × 9 columns

covid.head()

	Sno	Date	Time	State	ConfirmedIndianNational	ConfirmedForeignNational	Cured	Deaths	Confirmed
0	1	2020-01-30	6:00 PM	Kerala	1	0	0	0	1
1	2	2020-01-31	6:00 PM	Kerala	1	0	0	0	1
2	3	2020-02-01	6:00 PM	Kerala	2	0	0	0	2
3	4	2020-02-02	6:00 PM	Kerala	3	0	0	0	3
4	5	2020-02-03	6:00 PM	Kerala	3	0	0	0	3

covid.tail()

	Sno	Date	Time	State	ConfirmedIndianNational	ConfirmedForeignNational	Cured	Deaths	Confirmed
18105	18106	2021-08-11	8:00 AM	Telangana	-	-	638410	3831	650353
18106	18107	2021-08-11	8:00 AM	Tripura	-	-	77811	773	80660
18107	18108	2021-08-11	8:00 AM	Uttarakhand	-	-	334650	7368	342462
18108	18109	2021-08-11	8:00 AM	Uttar Pradesh	-	-	1685492	22775	1708812
18109	18110	2021-08-11	8:00 AM	West Bengal	-	-	1506532	18252	1534999

covid.columns

```
Index(['Sno', 'Date', 'Time', 'State', 'ConfirmedIndianNational',
       'ConfirmedForeignNational', 'Cured', 'Deaths', 'Confirmed'],
      dtype='object')
```

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

df

	Date	State	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
...	...	...	...	...	...
18105	2021-08-11	Telangana	638410	3831	650353
18106	2021-08-11	Tripura	77811	773	80660
18107	2021-08-11	Uttarakhand	334650	7368	342462
18108	2021-08-11	Uttar Pradesh	1685492	22775	1708812
18109	2021-08-11	West Bengal	1506532	18252	1534999

today=df[df.Date=='2020-07-17']

today.head()

	Date	State	Cured	Deaths	Confirmed
4179	2020-07-17	Andaman and Nicobar Islands	133	0	180
4180	2020-07-17	Andhra Pradesh	19393	492	38044
4181	2020-07-17	Arunachal Pradesh	153	3	543
4182	2020-07-17	Assam	12888	48	19754
4183	2020-07-17	Bihar	14018	197	21764

max_confirm=today.sort_values(by='Confirmed',ascending=False)

max_confirm.head()

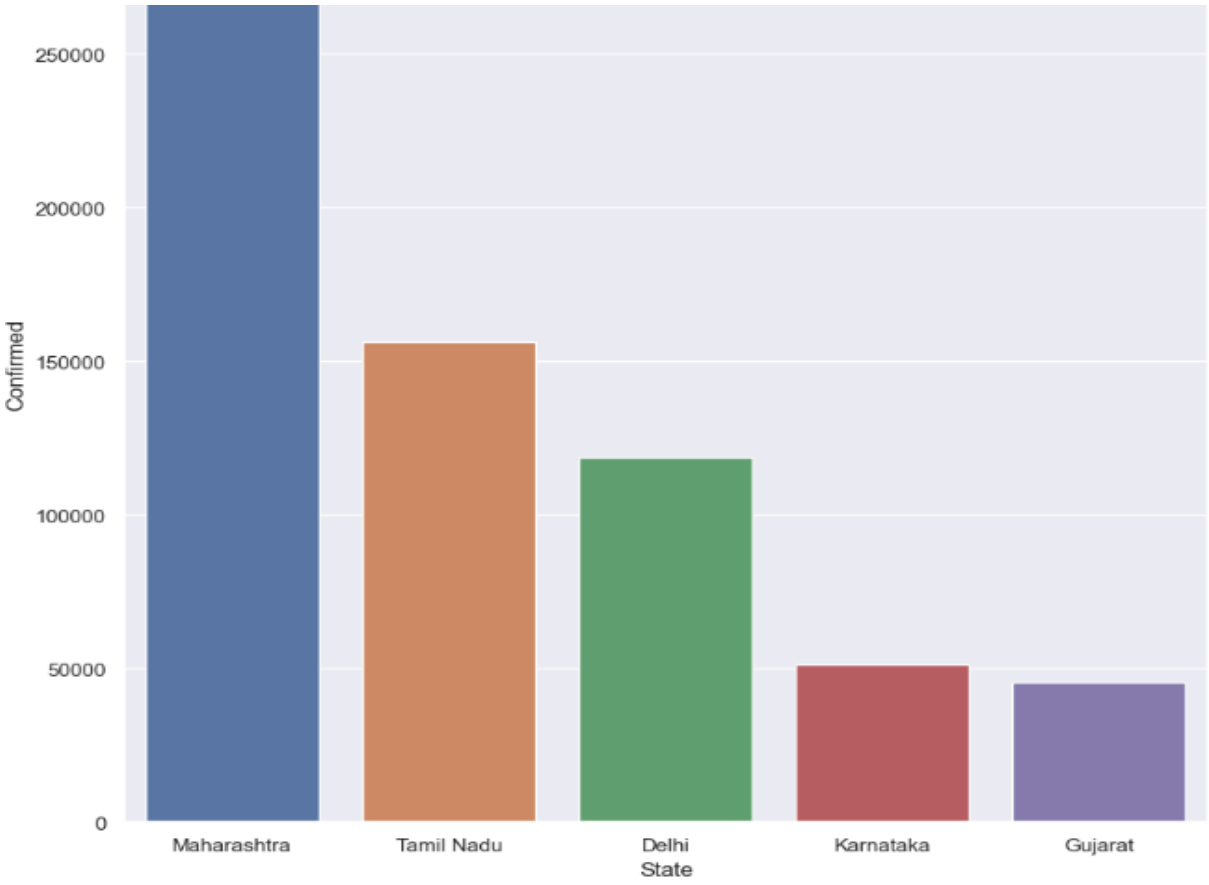
	Date	State	Cured	Deaths	Confirmed
4198	2020-07-17	Maharashtra	158140	11194	284281
4208	2020-07-17	Tamil Nadu	107416	2236	156369
4187	2020-07-17	Delhi	97693	3545	118645
4194	2020-07-17	Karnataka	19729	1032	51422
4189	2020-07-17	Gujarat	32103	2089	45481

top_5_confirm=max_confirm[0:5]

top_5_confirm.head()

	Date	State	Cured	Deaths	Confirmed
4198	2020-07-17	Maharashtra	158140	11194	284281
4208	2020-07-17	Tamil Nadu	107416	2236	156369
4187	2020-07-17	Delhi	97693	3545	118645
4194	2020-07-17	Karnataka	19729	1032	51422
4189	2020-07-17	Gujarat	32103	2089	45481

```
sns.set(rc={'figure.figsize':(10,10)})
sns.barplot(x='State',y='Confirmed',data=top_5_confirm,hue='State')
plt.show()
```



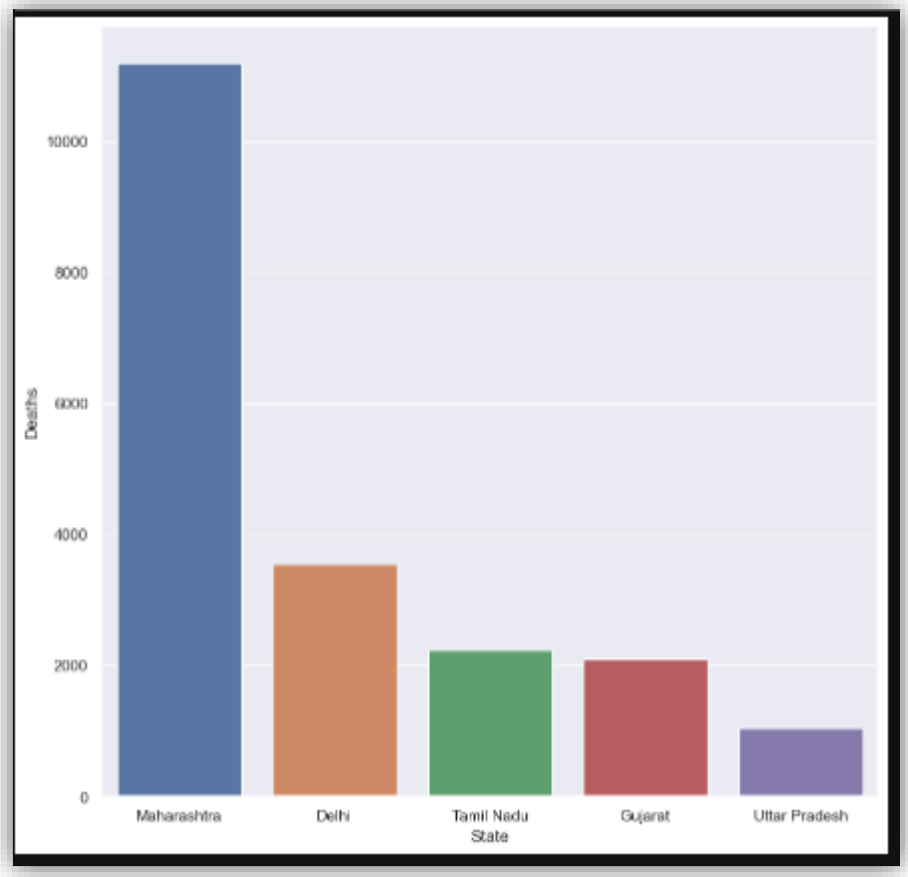

```
top_deaths_case=today.sort_values(by='Deaths',ascending=False)
top_deaths_case.head()
```

	Date	State	Cured	Deaths	Confirmed
4198	2020-07-17	Maharashtra	158140	11194	284281
4187	2020-07-17	Delhi	97693	3545	118645
4208	2020-07-17	Tamil Nadu	107416	2236	156369
4189	2020-07-17	Gujarat	32103	2089	45481
4212	2020-07-17	Uttar Pradesh	26675	1046	43441

```
top_5_deaths=top_deaths_case[0:5]
top_5_deaths.head()
```

	Date	State	Cured	Deaths	Confirmed
4198	2020-07-17	Maharashtra	158140	11194	284281
4187	2020-07-17	Delhi	97693	3545	118645
4208	2020-07-17	Tamil Nadu	107416	2236	156369
4189	2020-07-17	Gujarat	32103	2089	45481
4212	2020-07-17	Uttar Pradesh	26675	1046	43441

```
sns.set({"figure.figsize":(10,10)})
sns.barplot(x="State",y="Deaths",data=top_5_deaths,hue="State")
plt.show()
```



```
max_cured_status=today.sort_values(by="Cured",ascending=False)
```

```
max_cured_status
```

	Date	State	Cured	Deaths	Confirmed
4198	2020-07-17	Maharashtra	158140	11194	284281
4208	2020-07-17	Tamil Nadu	107416	2236	156369
4187	2020-07-17	Delhi	97693	3545	118645
4189	2020-07-17	Gujarat	32103	2089	45481
4209	2020-07-17	Telengana	27295	396	41018
4212	2020-07-17	Uttar Pradesh	26675	1046	43441
4213	2020-07-17	West Bengal	21415	1023	36117
4206	2020-07-17	Rajasthan	19970	538	27174
4194	2020-07-17	Karnataka	19729	1032	51422
4180	2020-07-17	Andhra Pradesh	19393	492	38044

```
top_5_Cured=max_cured_status[0:5]
```

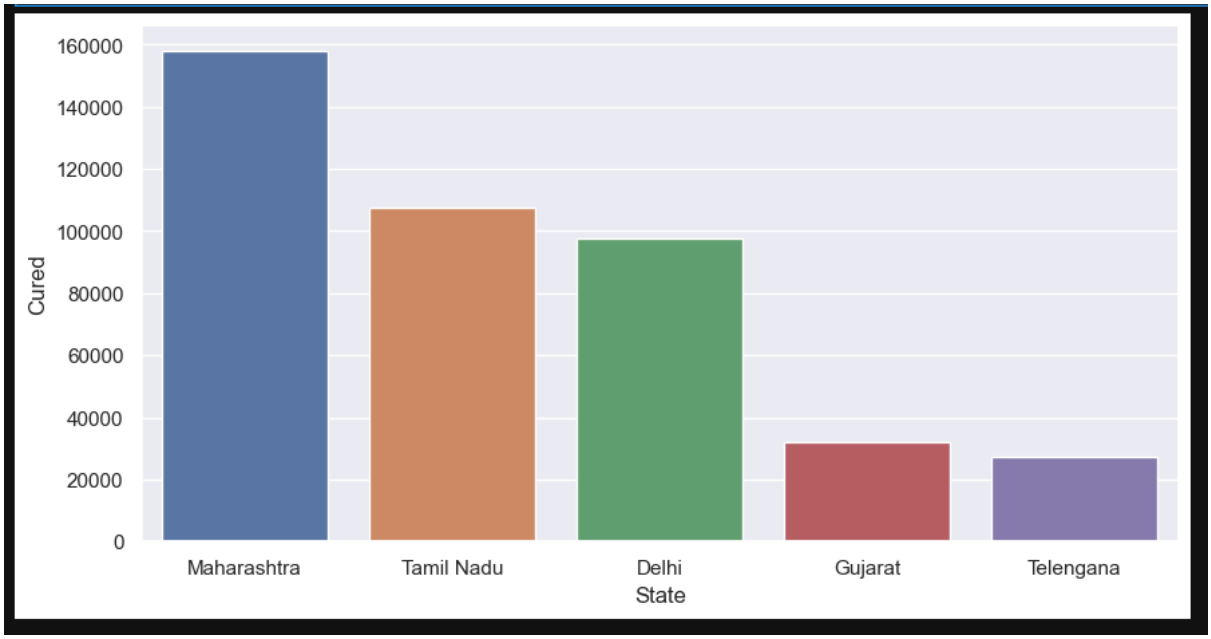
```
top_5_Cured
```

	Date	State	Cured	Deaths	Confirmed
4198	2020-07-17	Maharashtra	158140	11194	284281
4208	2020-07-17	Tamil Nadu	107416	2236	156369
4187	2020-07-17	Delhi	97693	3545	118645
4189	2020-07-17	Gujarat	32103	2089	45481
4209	2020-07-17	Telengana	27295	396	41018

```
sns.set({"figure.figsize":(10,5)})
```

```
sns.barplot(x="State",y="Cured",data=top_5_Cured,hue="State")
```

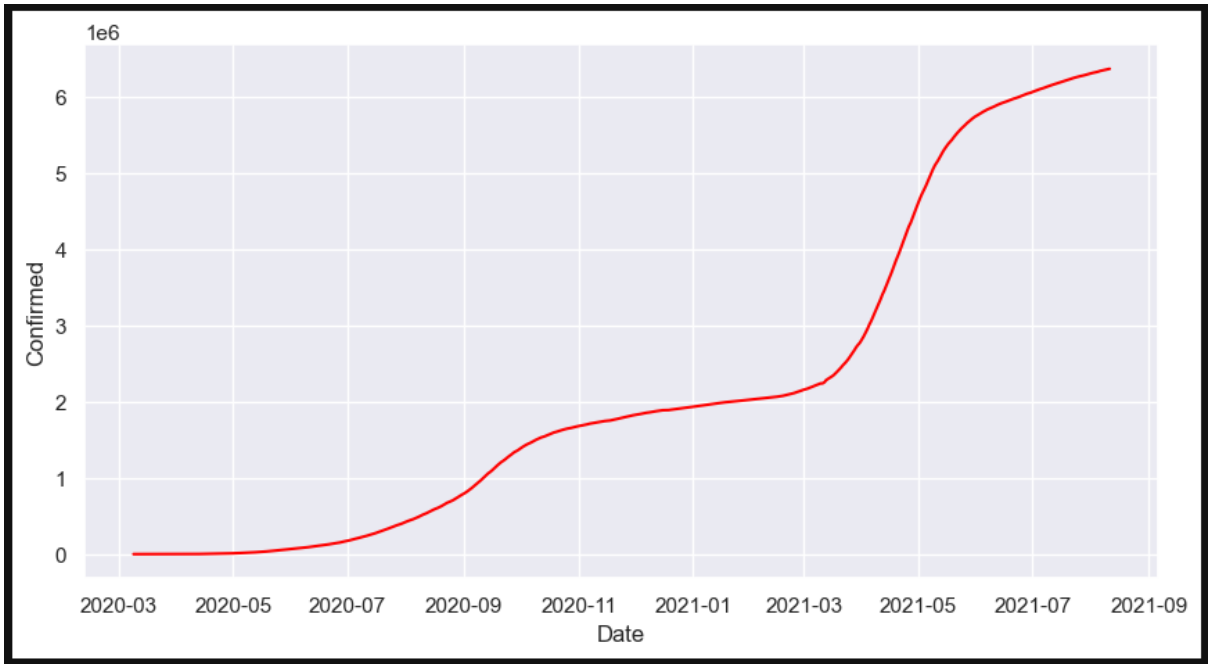
```
plt.show()
```



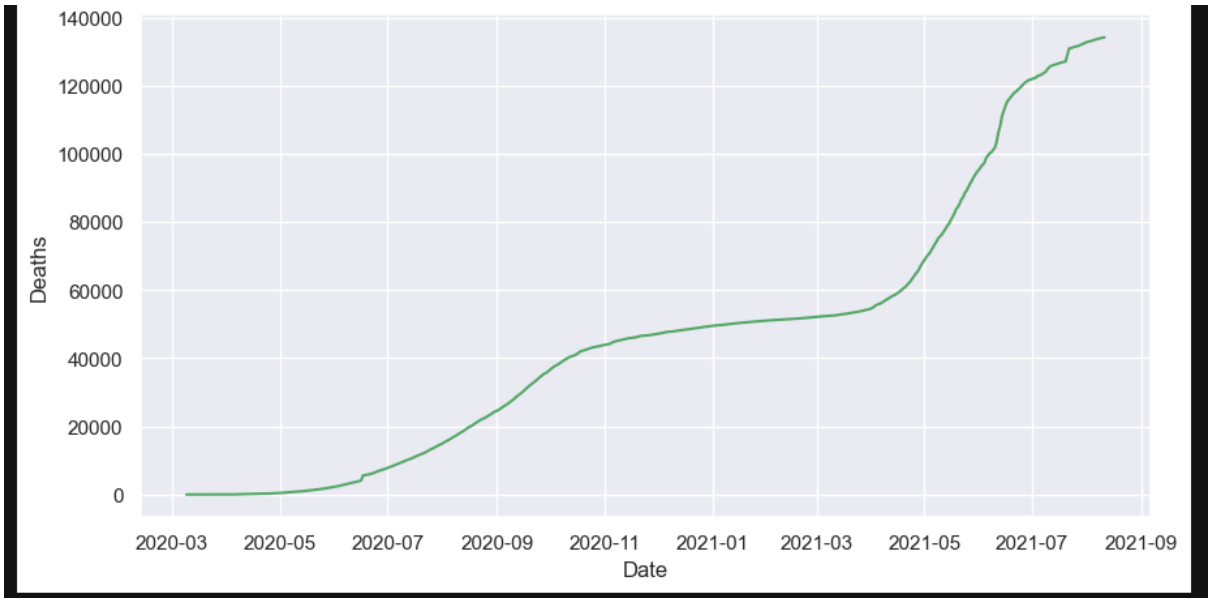

```
maha=df[df.State=="Maharashtra"]
maha.head()
```

	Date	State	Cured	Deaths	Confirmed
76	2020-03-09	Maharashtra	0	0	2
91	2020-03-10	Maharashtra	0	0	5
97	2020-03-11	Maharashtra	0	0	2
120	2020-03-12	Maharashtra	0	0	11
133	2020-03-13	Maharashtra	0	0	14

```
sns.set({"figure.figsize":(10,5)})
sns.lineplot(x="Date",y="Confirmed",data=maha,color="red")
plt.show()
```



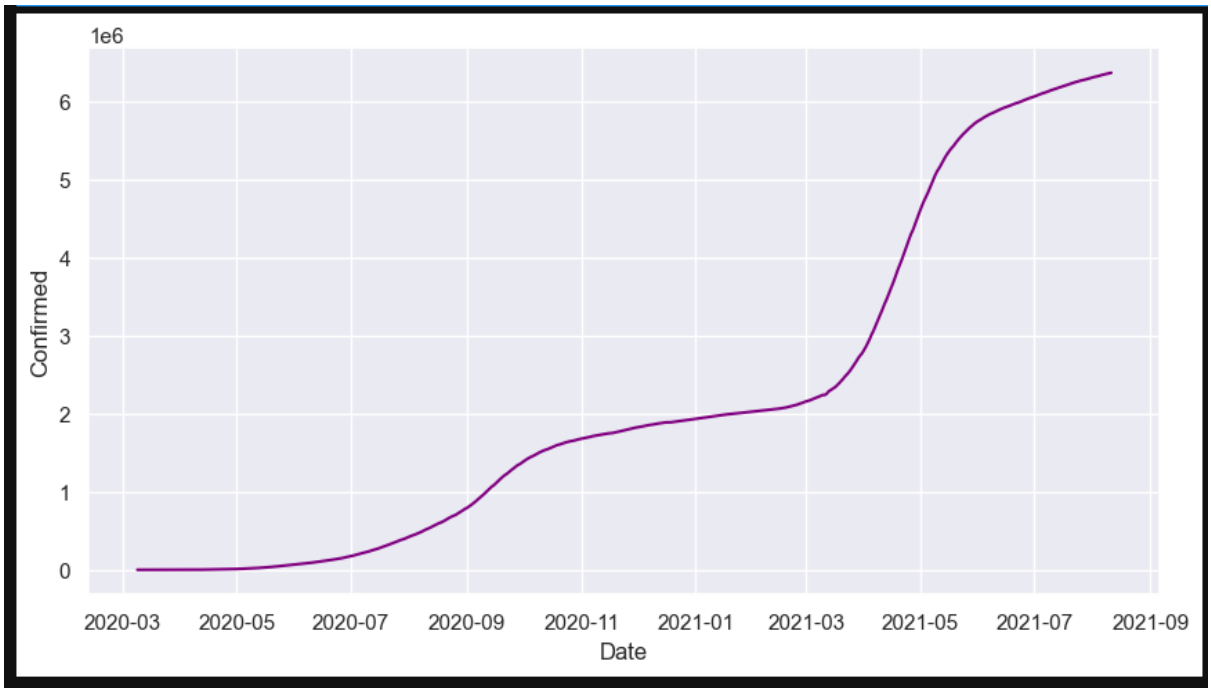

```
sns.set(rc={"figure.figsize":(10,5)})
sns.lineplot(x="Date",y="Deaths",data=maha,color='g')
plt.show()
```



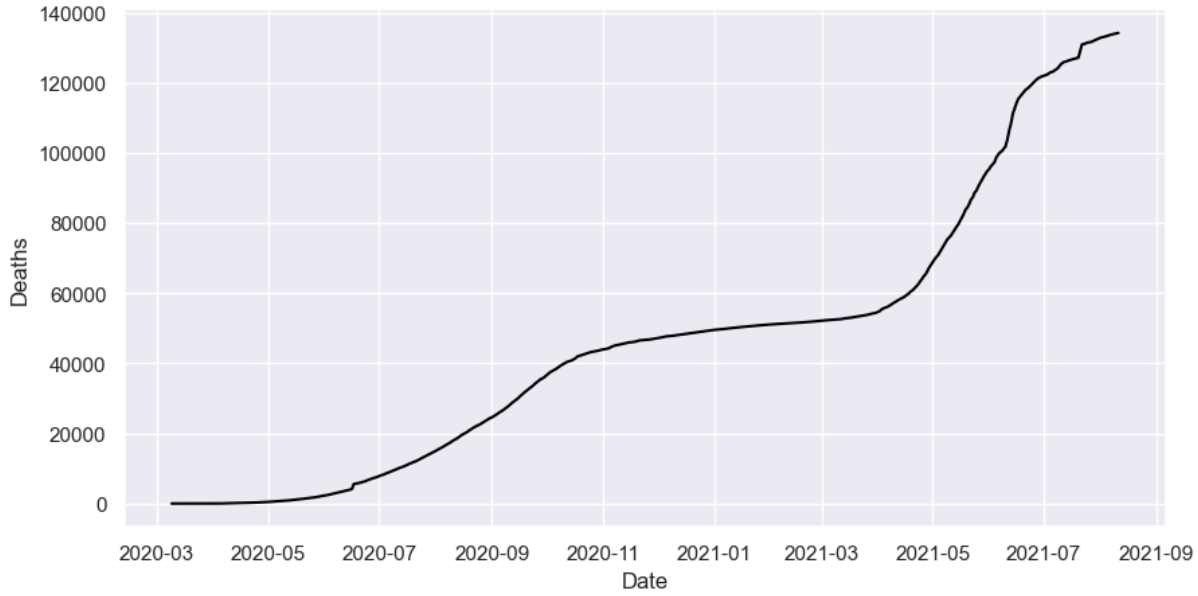

```
kerala=df[df.State=="Kerala"]
kerala
```

	Date	State	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
...	...	...	...	...	...
17946	2021-08-07	Kerala	3317314	17515	3513551
17982	2021-08-08	Kerala	3337579	17654	3533918
18018	2021-08-09	Kerala	3357687	17747	3552525
18054	2021-08-10	Kerala	3377691	17852	3565574
18090	2021-08-11	Kerala	3396184	18004	3586693

```
sns.set({"figure.figsize":(10,5)})
sns.lineplot(x="Date",y="Confirmed",data=maha,color="purple")
plt.show()
```



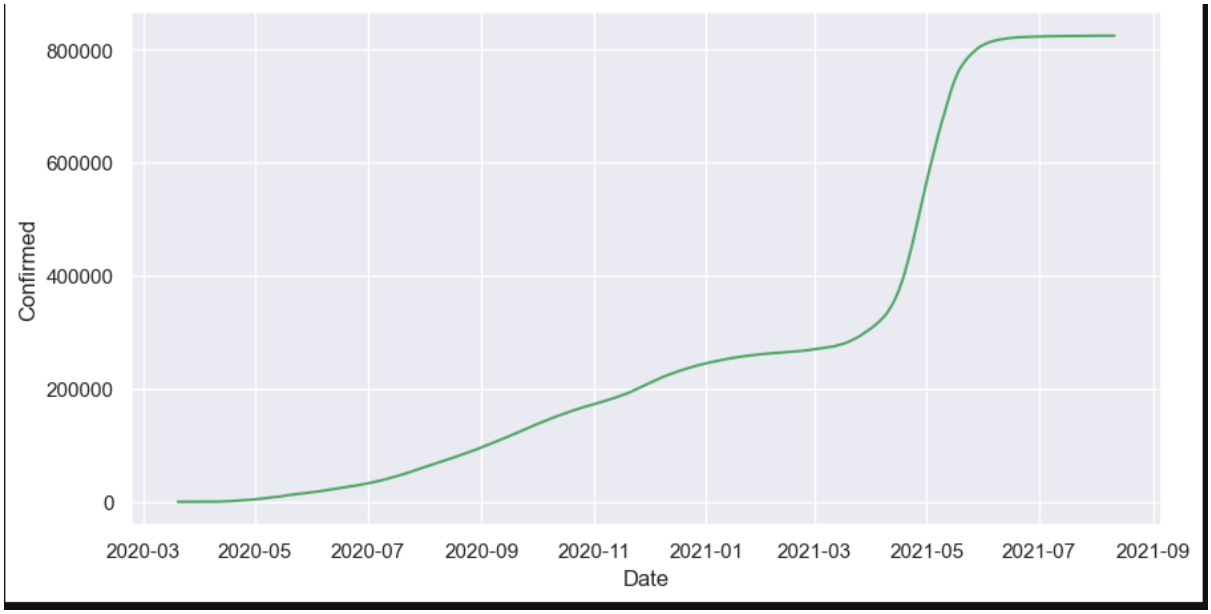
```
sns.set({"figure.figsize":(10,5)})
sns.lineplot(x="Date",y="Deaths",data=maha,color="black")
plt.show()
```



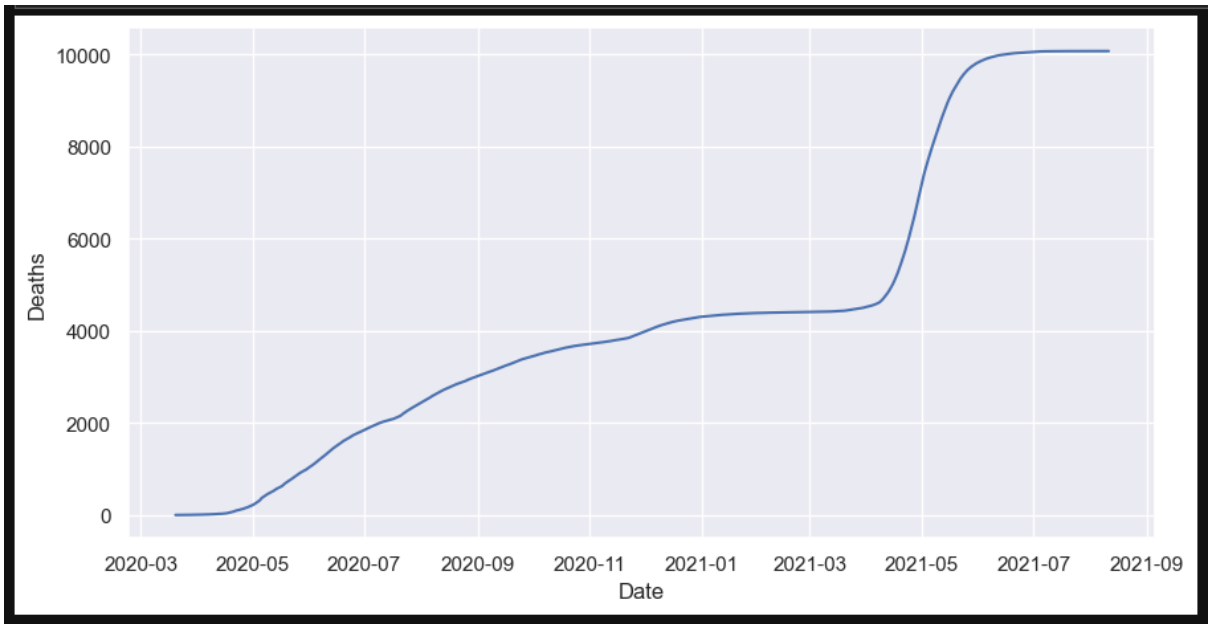

```
g=df[df.State=="Gujarat"]
g
```

	Date	State	Cured	Deaths	Confirmed
231	2020-03-20	Gujarat	0	0	5
251	2020-03-21	Gujarat	0	0	7
274	2020-03-22	Gujarat	0	1	18
297	2020-03-23	Gujarat	0	1	29
320	2020-03-24	Gujarat	0	1	33
...	...	...	...	...	...
17940	2021-08-07	Gujarat	814720	10077	825001
17976	2021-08-08	Gujarat	814747	10077	825020
18012	2021-08-09	Gujarat	814761	10077	825045
18048	2021-08-10	Gujarat	814778	10077	825064
18084	2021-08-11	Gujarat	814802	10077	825085

```
sns.set({"figure.figsize":(10,5)})
sns.lineplot(x="Date",y="Confirmed",data=g,color="g")
plt.show()
```




```
sns.set({"figure.figsize":(10,5)})
sns.lineplot(x="Date",y="Deaths",data=g)
plt.show()
```



```
from sklearn.model_selection import train_test_split
```

maha

	Date	State	Cured	Deaths	Confirmed
76	2020-03-09	Maharashtra	0	0	2
91	2020-03-10	Maharashtra	0	0	5
97	2020-03-11	Maharashtra	0	0	2
120	2020-03-12	Maharashtra	0	0	11
133	2020-03-13	Maharashtra	0	0	14
...	...	...	...	...	...
17950	2021-08-07	Maharashtra	6130137	133717	6341759
17986	2021-08-08	Maharashtra	6139493	133845	6347820
18022	2021-08-09	Maharashtra	6144388	133996	6353328
18058	2021-08-10	Maharashtra	6151956	134064	6357833
18094	2021-08-11	Maharashtra	6159676	134201	6363442

```
maha["Date"]=maha["Date"].map(dt.datetime.toordinal)
x=maha["Date"]
y=maha["Confirmed"]
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.3)

from sklearn.linear_model import LinearRegression
lr=LinearRegression()
```

y_train

```
4515      366368
5145      548313
11218    2026399
16654    6070599
5740      764281
          ...
6405     1145840
1076        3323
13666    3288540
3514      159133
6300     1077374
Name: Confirmed, Length: 364, dtype: int64
```

```
lr.fit(np.array(x_train).reshape(-1,1),np.array(y_train).reshape(-1,1))
```

```
LinearRegression()
```

```
maha.tail()
```

	Date	State	Cured	Deaths	Confirmed
17950	738009	Maharashtra	6130137	133717	6341759
17986	738010	Maharashtra	6139493	133845	6347820
18022	738011	Maharashtra	6144388	133996	6353328
18058	738012	Maharashtra	6151956	134064	6357833
18094	738013	Maharashtra	6159676	134201	6363442

```
lr.predict(np.array([[2020-7-17]]))
```

```
array([[-9.39334876e+09]])
```