In [1]:
```
import pandas as pd
from matplotlib import pyplot as plt
import seaborn as sns
import datetime as dt
import numpy as np
```

In [3]:
```
df = pd.read_csv('covid_19_india.csv',parse_dates = ['Date'],dayfirst = True)
```

In [4]:
```
df.head()
```

Out[4]:

	Sno	Date	Time	State/UnionTerritory	ConfirmedIndianNational	ConfirmedForeignNational	Cured	Deaths	Confirmed
0	1.0	2020-01-30	6:00 PM	Kerala	1	0	0.0	0.0	1.0
1	2.0	2020-01-31	6:00 PM	Kerala	1	0	0.0	0.0	1.0
2	3.0	2020-02-01	6:00 PM	Kerala	2	0	0.0	0.0	2.0
3	4.0	2020-02-02	6:00 PM	Kerala	3	0	0.0	0.0	3.0
4	5.0	2020-02-03	6:00 PM	Kerala	3	0	0.0	0.0	3.0

In [5]:
```
df = df[['Date','State/UnionTerritory','Cured','Deaths','Confirmed']]
```

In [6]:
```
df.columns = ['date','state','cured','deaths','confirmed']
```

In [7]:
```
df.head()
```

Out[7]:

	date	state	cured	deaths	confirmed
0	2020-01-30	Kerala	0.0	0.0	1.0
1	2020-01-31	Kerala	0.0	0.0	1.0
2	2020-02-01	Kerala	0.0	0.0	2.0
3	2020-02-02	Kerala	0.0	0.0	3.0
4	2020-02-03	Kerala	0.0	0.0	3.0

In [8]:
```
df.tail()
```

Out[8]:

	date	state	cured	deaths	confirmed
15109	NaT	NaN	NaN	NaN	NaN
15110	NaT	NaN	NaN	NaN	NaN
15111	NaT	NaN	NaN	NaN	NaN
15112	NaT	NaN	NaN	NaN	NaN
15113	NaT	NaN	NaN	NaN	NaN

In [9]:
```
df[0:4214]
```

Out[9]:

	date	state	cured	deaths	confirmed
0	2020-01-30	Kerala	0.0	0.0	1.0
1	2020-01-31	Kerala	0.0	0.0	1.0
2	2020-02-01	Kerala	0.0	0.0	2.0
3	2020-02-02	Kerala	0.0	0.0	3.0
4	2020-02-03	Kerala	0.0	0.0	3.0
...	...	...	...	...	...
4209	2020-07-17	Telengana	27295.0	396.0	41018.0
4210	2020-07-17	Tripura	1604.0	3.0	2283.0
4211	2020-07-17	Uttarakhand	2995.0	50.0	3982.0
4212	2020-07-17	Uttar Pradesh	26675.0	1046.0	43441.0
4213	2020-07-17	West Bengal	21415.0	1023.0	36117.0

4214 rows × 5 columns

In [10]:
```
df[4210:4215]
```

Out[10]:

	date	state	cured	deaths	confirmed
4210	2020-07-17	Tripura	1604.0	3.0	2283.0
4211	2020-07-17	Uttarakhand	2995.0	50.0	3982.0
4212	2020-07-17	Uttar Pradesh	26675.0	1046.0	43441.0
4213	2020-07-17	West Bengal	21415.0	1023.0	36117.0
4214	2020-07-17	Cases being reassigned to states	0.0	0.0	531.0

In [11]:
```
today = df[df.date == '2020-07-17']
```

In [12]:
```
today
```

Out[12]:

	date	state	cured	deaths	confirmed
4179	2020-07-17	Andaman and Nicobar Islands	133.0	0.0	180.0
4180	2020-07-17	Andhra Pradesh	19393.0	492.0	38044.0
4181	2020-07-17	Arunachal Pradesh	153.0	3.0	543.0
4182	2020-07-17	Assam	12888.0	48.0	19754.0
4183	2020-07-17	Bihar	14018.0	197.0	21764.0
4184	2020-07-17	Chandigarh	476.0	11.0	651.0
4185	2020-07-17	Chhattisgarh	3451.0	21.0	4732.0
4186	2020-07-17	Dadra and Nagar Haveli and Daman and Diu	371.0	2.0	552.0
4187	2020-07-17	Delhi	97693.0	3545.0	118645.0
4188	2020-07-17	Goa	1817.0	19.0	3108.0
4189	2020-07-17	Gujarat	32103.0	2089.0	45481.0
4190	2020-07-17	Haryana	18185.0	322.0	24002.0
4191	2020-07-17	Himachal Pradesh	984.0	11.0	1377.0
4192	2020-07-17	Jammu and Kashmir	6446.0	222.0	12156.0
4193	2020-07-17	Jharkhand	2513.0	42.0	4624.0
4194	2020-07-17	Karnataka	19729.0	1032.0	51422.0
4195	2020-07-17	Kerala	4862.0	37.0	10275.0
4196	2020-07-17	Ladakh	970.0	1.0	1147.0
4197	2020-07-17	Madhya Pradesh	14127.0	689.0	20378.0
4198	2020-07-17	Maharashtra	158140.0	11194.0	284281.0
4199	2020-07-17	Manipur	1129.0	0.0	1764.0
4200	2020-07-17	Meghalaya	66.0	2.0	377.0
4201	2020-07-17	Mizoram	160.0	0.0	272.0
4202	2020-07-17	Nagaland	391.0	0.0	916.0
4203	2020-07-17	Odisha	10877.0	79.0	15392.0
4204	2020-07-17	Puducherry	947.0	22.0	1743.0
4205	2020-07-17	Punjab	6277.0	230.0	9094.0
4206	2020-07-17	Rajasthan	19970.0	538.0	27174.0
4207	2020-07-17	Sikkim	88.0	0.0	243.0
4208	2020-07-17	Tamil Nadu	107416.0	2236.0	156369.0
4209	2020-07-17	Telengana	27295.0	396.0	41018.0
4210	2020-07-17	Tripura	1604.0	3.0	2283.0
4211	2020-07-17	Uttarakhand	2995.0	50.0	3982.0
4212	2020-07-17	Uttar Pradesh	26675.0	1046.0	43441.0
4213	2020-07-17	West Bengal	21415.0	1023.0	36117.0
4214	2020-07-17	Cases being reassigned to states	0.0	0.0	531.0

In [14]:
```
today.head()
```

Out[14]:

	date	state	cured	deaths	confirmed
4179	2020-07-17	Andaman and Nicobar Islands	133.0	0.0	180.0
4180	2020-07-17	Andhra Pradesh	19393.0	492.0	38044.0
4181	2020-07-17	Arunachal Pradesh	153.0	3.0	543.0
4182	2020-07-17	Assam	12888.0	48.0	19754.0
4183	2020-07-17	Bihar	14018.0	197.0	21764.0

In [15]:
```
max_confirmed_cases = today.sort_values(by = "confirmed",ascending = False)
```

In [16]:
```
max_confirmed_cases
```

Out[16]:

	date	state	cured	deaths	confirmed
4198	2020-07-17	Maharashtra	158140.0	11194.0	284281.0
4208	2020-07-17	Tamil Nadu	107416.0	2236.0	156369.0
4187	2020-07-17	Delhi	97693.0	3545.0	118645.0
4194	2020-07-17	Karnataka	19729.0	1032.0	51422.0
4189	2020-07-17	Gujarat	32103.0	2089.0	45481.0
4212	2020-07-17	Uttar Pradesh	26675.0	1046.0	43441.0
4209	2020-07-17	Telengana	27295.0	396.0	41018.0
4180	2020-07-17	Andhra Pradesh	19393.0	492.0	38044.0
4213	2020-07-17	West Bengal	21415.0	1023.0	36117.0
4206	2020-07-17	Rajasthan	19970.0	538.0	27174.0
4190	2020-07-17	Haryana	18185.0	322.0	24002.0
4183	2020-07-17	Bihar	14018.0	197.0	21764.0
4197	2020-07-17	Madhya Pradesh	14127.0	689.0	20378.0
4182	2020-07-17	Assam	12888.0	48.0	19754.0
4203	2020-07-17	Odisha	10877.0	79.0	15392.0
4192	2020-07-17	Jammu and Kashmir	6446.0	222.0	12156.0
4195	2020-07-17	Kerala	4862.0	37.0	10275.0
4205	2020-07-17	Punjab	6277.0	230.0	9094.0
4185	2020-07-17	Chhattisgarh	3451.0	21.0	4732.0
4193	2020-07-17	Jharkhand	2513.0	42.0	4624.0
4211	2020-07-17	Uttarakhand	2995.0	50.0	3982.0
4188	2020-07-17	Goa	1817.0	19.0	3108.0
4210	2020-07-17	Tripura	1604.0	3.0	2283.0
4199	2020-07-17	Manipur	1129.0	0.0	1764.0
4204	2020-07-17	Puducherry	947.0	22.0	1743.0
4191	2020-07-17	Himachal Pradesh	984.0	11.0	1377.0
4196	2020-07-17	Ladakh	970.0	1.0	1147.0
4202	2020-07-17	Nagaland	391.0	0.0	916.0
4184	2020-07-17	Chandigarh	476.0	11.0	651.0
4186	2020-07-17	Dadra and Nagar Haveli and Daman and Diu	371.0	2.0	552.0
4181	2020-07-17	Arunachal Pradesh	153.0	3.0	543.0
4214	2020-07-17	Cases being reassigned to states	0.0	0.0	531.0
4200	2020-07-17	Meghalaya	66.0	2.0	377.0
4201	2020-07-17	Mizoram	160.0	0.0	272.0
4207	2020-07-17	Sikkim	88.0	0.0	243.0
4179	2020-07-17	Andaman and Nicobar Islands	133.0	0.0	180.0

In [17]:
```
top_cases_confirmed = max_confirmed_cases[0:5]
```

In [18]:
```
top_cases_confirmed
```

Out[18]:

	date	state	cured	deaths	confirmed
4198	2020-07-17	Maharashtra	158140.0	11194.0	284281.0
4208	2020-07-17	Tamil Nadu	107416.0	2236.0	156369.0
4187	2020-07-17	Delhi	97693.0	3545.0	118645.0
4194	2020-07-17	Karnataka	19729.0	1032.0	51422.0
4189	2020-07-17	Gujarat	32103.0	2089.0	45481.0

In [22]:
```
sns.set (rc = {'figure.figsize': (15,10)})
sns.barplot(x = "state",y = "confirmed",data = top_cases_confirmed,hue = "state")
plt.show()
```

In [25]:
```
max_death_cases = today.sort_values(by = "deaths",ascending = False)
```

In [26]:
```
max_death_cases
```

Out[26]:

	date	state	cured	deaths	confirmed
4198	2020-07-17	Maharashtra	158140.0	11194.0	284281.0
4187	2020-07-17	Delhi	97693.0	3545.0	118645.0
4208	2020-07-17	Tamil Nadu	107416.0	2236.0	156369.0
4189	2020-07-17	Gujarat	32103.0	2089.0	45481.0
4212	2020-07-17	Uttar Pradesh	26675.0	1046.0	43441.0
4194	2020-07-17	Karnataka	19729.0	1032.0	51422.0
4213	2020-07-17	West Bengal	21415.0	1023.0	36117.0
4197	2020-07-17	Madhya Pradesh	14127.0	689.0	20378.0
4206	2020-07-17	Rajasthan	19970.0	538.0	27174.0
4180	2020-07-17	Andhra Pradesh	19393.0	492.0	38044.0
4209	2020-07-17	Telengana	27295.0	396.0	41018.0
4190	2020-07-17	Haryana	18185.0	322.0	24002.0
4205	2020-07-17	Punjab	6277.0	230.0	9094.0
4192	2020-07-17	Jammu and Kashmir	6446.0	222.0	12156.0
4183	2020-07-17	Bihar	14018.0	197.0	21764.0
4203	2020-07-17	Odisha	10877.0	79.0	15392.0
4211	2020-07-17	Uttarakhand	2995.0	50.0	3982.0
4182	2020-07-17	Assam	12888.0	48.0	19754.0
4193	2020-07-17	Jharkhand	2513.0	42.0	4624.0
4195	2020-07-17	Kerala	4862.0	37.0	10275.0
4204	2020-07-17	Puducherry	947.0	22.0	1743.0
4185	2020-07-17	Chhattisgarh	3451.0	21.0	4732.0
4188	2020-07-17	Goa	1817.0	19.0	3108.0
4191	2020-07-17	Himachal Pradesh	984.0	11.0	1377.0
4184	2020-07-17	Chandigarh	476.0	11.0	651.0
4181	2020-07-17	Arunachal Pradesh	153.0	3.0	543.0
4210	2020-07-17	Tripura	1604.0	3.0	2283.0
4200	2020-07-17	Meghalaya	66.0	2.0	377.0
4186	2020-07-17	Dadra and Nagar Haveli and Daman and Diu	371.0	2.0	552.0
4196	2020-07-17	Ladakh	970.0	1.0	1147.0
4179	2020-07-17	Andaman and Nicobar Islands	133.0	0.0	180.0
4207	2020-07-17	Sikkim	88.0	0.0	243.0
4202	2020-07-17	Nagaland	391.0	0.0	916.0
4201	2020-07-17	Mizoram	160.0	0.0	272.0
4199	2020-07-17	Manipur	1129.0	0.0	1764.0
4214	2020-07-17	Cases being reassigned to states	0.0	0.0	531.0

In [27]:
```
top_cases_death = max_death_cases[0:5]
```

In [28]:
```
top_cases_death
```

Out[28]:

	date	state	cured	deaths	confirmed
4198	2020-07-17	Maharashtra	158140.0	11194.0	284281.0
4187	2020-07-17	Delhi	97693.0	3545.0	118645.0
4208	2020-07-17	Tamil Nadu	107416.0	2236.0	156369.0
4189	2020-07-17	Gujarat	32103.0	2089.0	45481.0
4212	2020-07-17	Uttar Pradesh	26675.0	1046.0	43441.0

In [31]:
```
sns.set (rc = {'figure.figsize': (15,10)})
sns.barplot(x = "state",y = "deaths",data = top_cases_death,hue = "state")
plt.show()
```

In [32]:
```
max_cured_cases = today.sort_values(by = "cured",ascending = False)
```

In [33]:
```
max_cured_cases
```

Out[33]:

	date	state	cured	deaths	confirmed
4198	2020-07-17	Maharashtra	158140.0	11194.0	284281.0
4208	2020-07-17	Tamil Nadu	107416.0	2236.0	156369.0
4187	2020-07-17	Delhi	97693.0	3545.0	118645.0
4189	2020-07-17	Gujarat	32103.0	2089.0	45481.0
4209	2020-07-17	Telengana	27295.0	396.0	41018.0
4212	2020-07-17	Uttar Pradesh	26675.0	1046.0	43441.0
4213	2020-07-17	West Bengal	21415.0	1023.0	36117.0
4206	2020-07-17	Rajasthan	19970.0	538.0	27174.0
4194	2020-07-17	Karnataka	19729.0	1032.0	51422.0
4180	2020-07-17	Andhra Pradesh	19393.0	492.0	38044.0
4190	2020-07-17	Haryana	18185.0	322.0	24002.0
4197	2020-07-17	Madhya Pradesh	14127.0	689.0	20378.0
4183	2020-07-17	Bihar	14018.0	197.0	21764.0
4182	2020-07-17	Assam	12888.0	48.0	19754.0
4203	2020-07-17	Odisha	10877.0	79.0	15392.0
4192	2020-07-17	Jammu and Kashmir	6446.0	222.0	12156.0
4205	2020-07-17	Punjab	6277.0	230.0	9094.0
4195	2020-07-17	Kerala	4862.0	37.0	10275.0
4185	2020-07-17	Chhattisgarh	3451.0	21.0	4732.0
4211	2020-07-17	Uttarakhand	2995.0	50.0	3982.0
4193	2020-07-17	Jharkhand	2513.0	42.0	4624.0
4188	2020-07-17	Goa	1817.0	19.0	3108.0
4210	2020-07-17	Tripura	1604.0	3.0	2283.0
4199	2020-07-17	Manipur	1129.0	0.0	1764.0
4191	2020-07-17	Himachal Pradesh	984.0	11.0	1377.0
4196	2020-07-17	Ladakh	970.0	1.0	1147.0
4204	2020-07-17	Puducherry	947.0	22.0	1743.0
4184	2020-07-17	Chandigarh	476.0	11.0	651.0
4202	2020-07-17	Nagaland	391.0	0.0	916.0
4186	2020-07-17	Dadra and Nagar Haveli and Daman and Diu	371.0	2.0	552.0
4201	2020-07-17	Mizoram	160.0	0.0	272.0
4181	2020-07-17	Arunachal Pradesh	153.0	3.0	543.0
4179	2020-07-17	Andaman and Nicobar Islands	133.0	0.0	180.0
4207	2020-07-17	Sikkim	88.0	0.0	243.0
4200	2020-07-17	Meghalaya	66.0	2.0	377.0
4214	2020-07-17	Cases being reassigned to states	0.0	0.0	531.0

In [35]:
```
top_cases_cured = max_cured_cases.head()
```

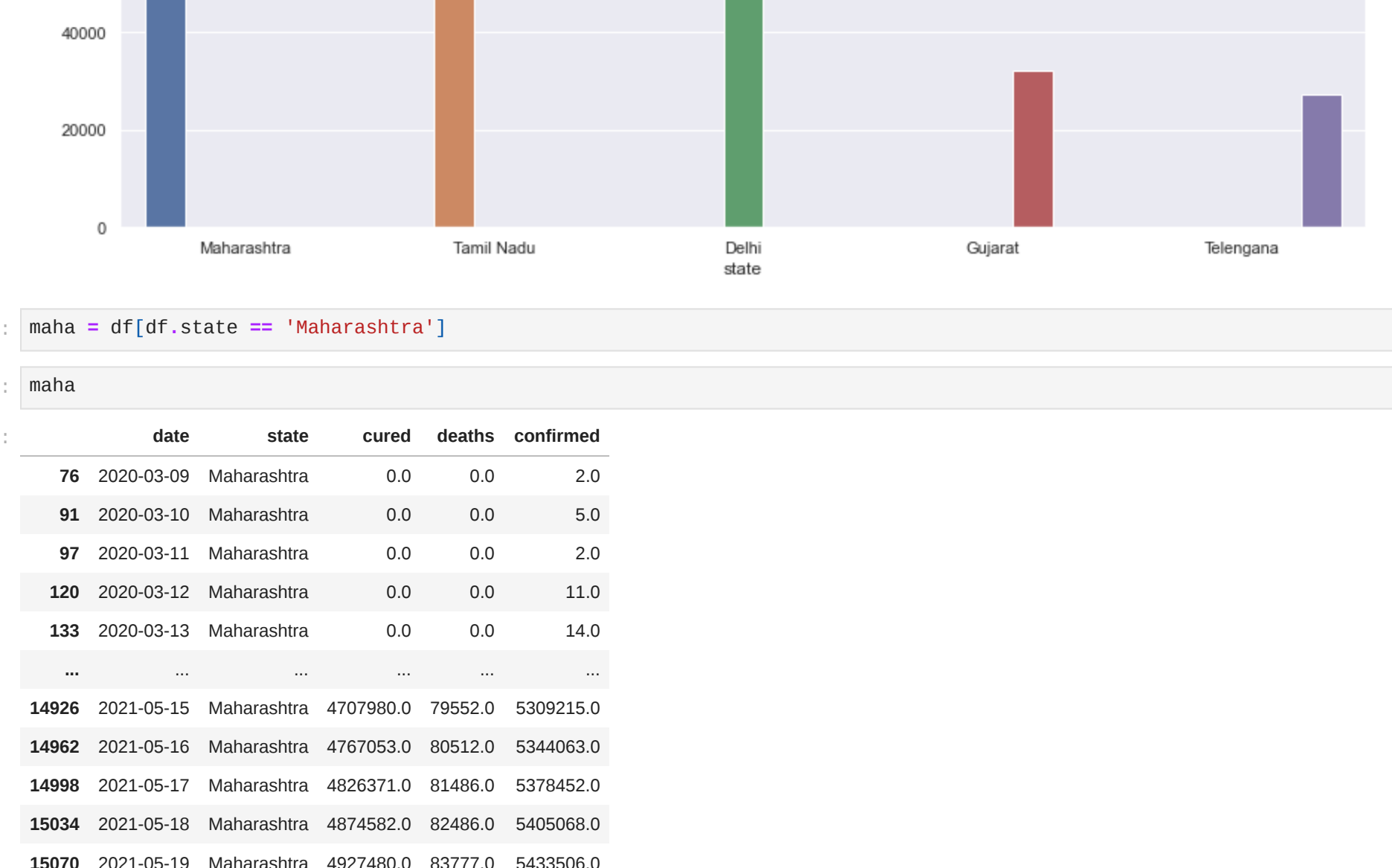
In [36]:
```
top_cases_cured
```

Out[36]:

	date	state	cured	deaths	confirmed
4198	2020-07-17	Maharashtra	158140.0	11194.0	284281.0
4208	2020-07-17	Tamil Nadu	107416.0	2236.0	156369.0
4187	2020-07-17	Delhi	97693.0	3545.0	118645.0
4189	2020-07-17	Gujarat	32103.0	2089.0	45481.0
4209	2020-07-17	Telengana	27295.0	396.0	41018.0

In [37]:
```
sns.set(rc = {'figure.figsize': (15,10)})
```

In [38]:
```
sns.barplot( x = 'state', y = 'cured', data = top_cases_cured, hue = 'state')
plt.show()
```



In [39]:
```
maha = df[df.state == 'Maharashtra']
```

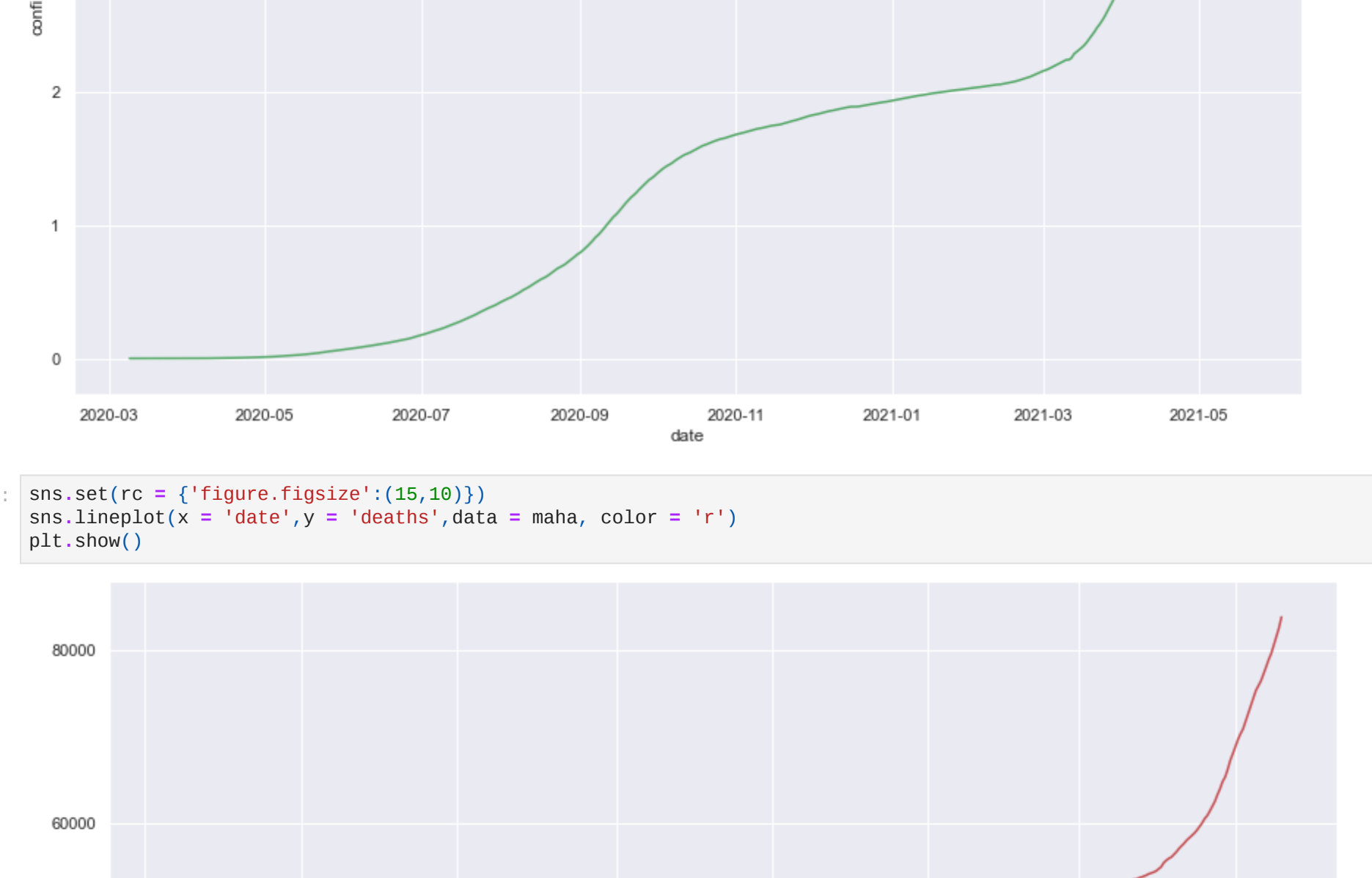
In [40]:
```
maha
```

Out[40]:

	date	state	cured	deaths	confirmed
76	2020-03-09	Maharashtra	0.0	0.0	2.0
91	2020-03-10	Maharashtra	0.0	0.0	5.0
97	2020-03-11	Maharashtra	0.0	0.0	2.0
120	2020-03-12	Maharashtra	0.0	0.0	11.0
133	2020-03-13	Maharashtra	0.0	0.0	14.0
...	...	...	...	...	...
14926	2021-05-15	Maharashtra	4707980.0	79552.0	5309215.0
14962	2021-05-16	Maharashtra	4767053.0	80512.0	5344063.0
14998	2021-05-17	Maharashtra	4826371.0	81486.0	5378452.0
15034	2021-05-18	Maharashtra	4874582.0	82486.0	5405068.0
15070	2021-05-19	Maharashtra	4927480.0	83777.0	5433506.0

437 rows × 5 columns

In [41]:
```
sns.set(rc = {'figure.figsize':(15,10)})
sns.lineplot(x = 'date',y = 'confirmed',data = maha, color = 'g')
plt.show()
```



In [42]:
```
sns.set(rc = {'figure.figsize':(15,10)})
sns.lineplot(x = 'date',y = 'deaths',data = maha, color = 'r')
plt.show()
```

In [49]:
```
goa = df[df.state =='Goa']
```

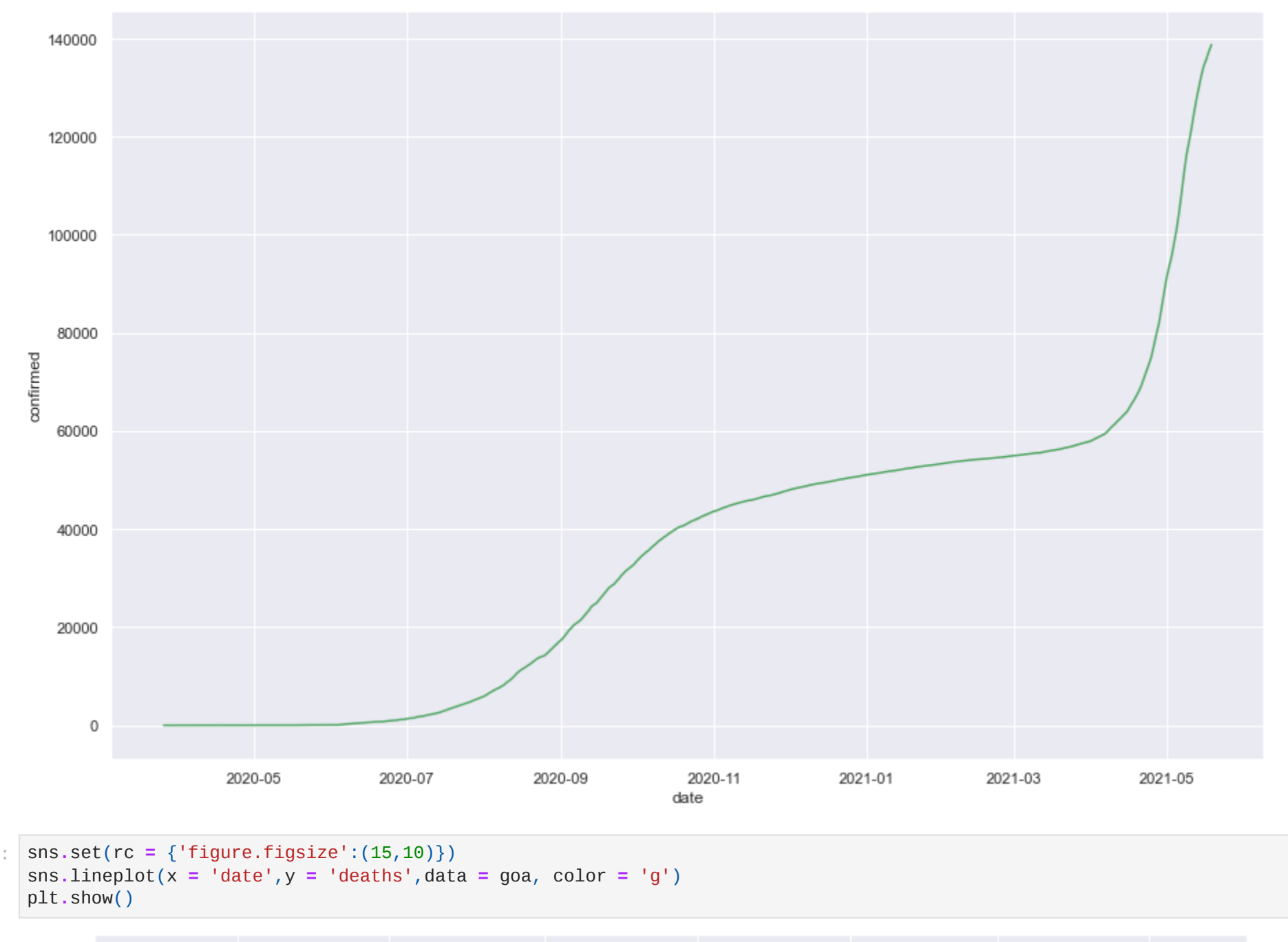
In [50]:
```
goa
```

Out[50]:

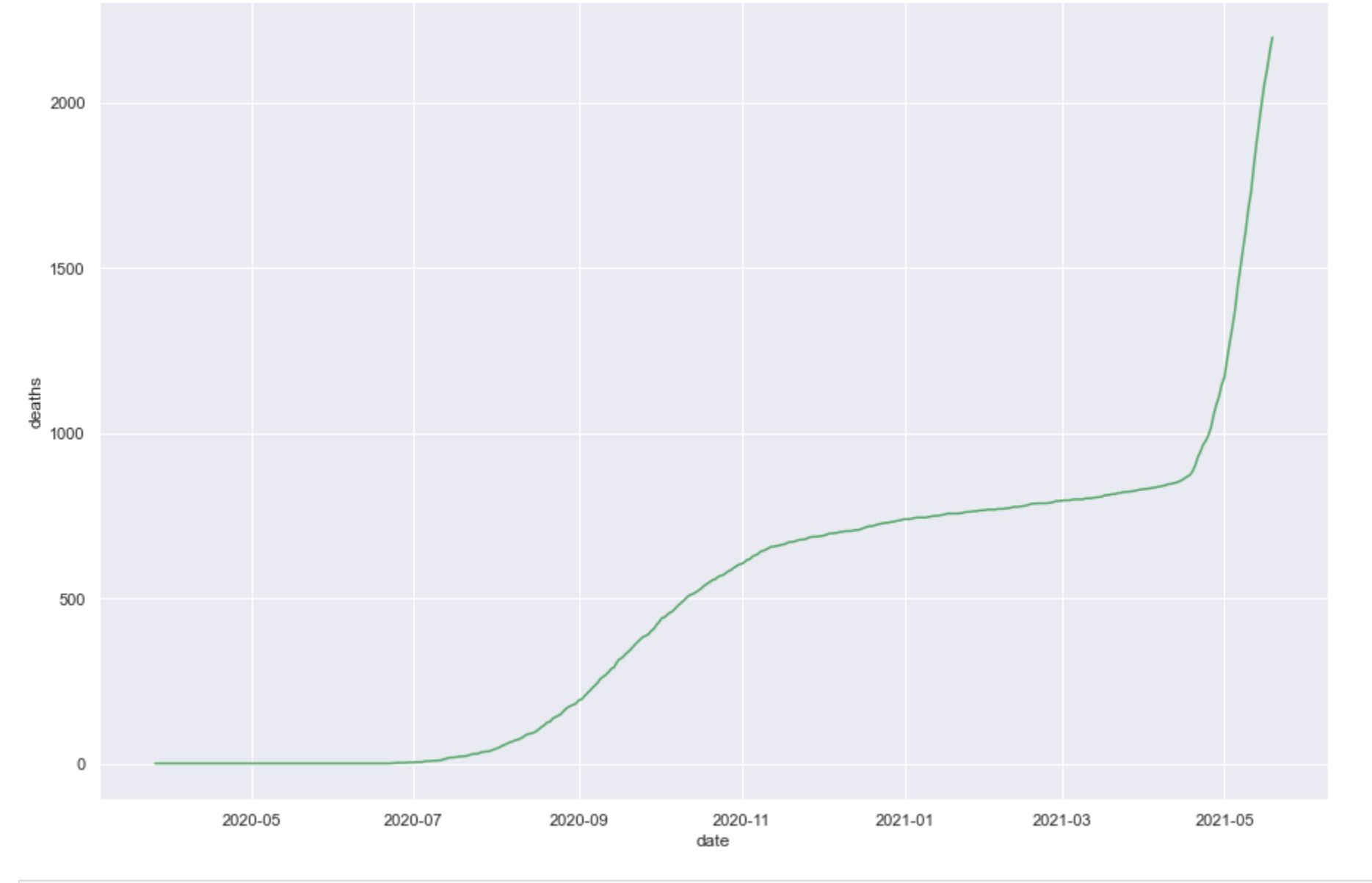
	date	state	cured	deaths	confirmed
371	2020-03-26	Goa	0.0	0.0	3.0
398	2020-03-27	Goa	0.0	0.0	3.0
425	2020-03-28	Goa	0.0	0.0	3.0
452	2020-03-29	Goa	0.0	0.0	5.0
479	2020-03-30	Goa	0.0	0.0	5.0
...	...	...	...	...	...
14915	2021-05-15	Goa	98200.0	1998.0	132585.0
14951	2021-05-16	Goa	101712.0	2056.0	134542.0
14987	2021-05-17	Goa	105505.0	2099.0	135856.0
15023	2021-05-18	Goa	109513.0	2152.0	137418.0
15059	2021-05-19	Goa	112633.0	2197.0	138776.0

420 rows × 5 columns

In [51]:
```
sns.set(rc = {'figure.figsize':(15,10)})
sns.lineplot(x = 'date',y = 'confirmed',data = goa, color = 'g')
plt.show()
```



In [52]:
```
sns.set(rc = {'figure.figsize':(15,10)})
sns.lineplot(x = 'date',y = 'deaths',data = goa, color = 'g')
plt.show()
```



In [ ]: