

```
In [1]: import pandas as pd
```

```
In [2]: pd.__version__
```

```
Out[2]: '1.4.2'
```

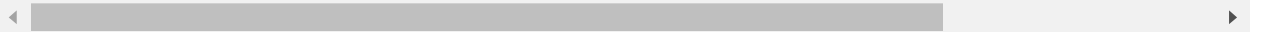
```
In [3]: data = pd.read_csv("covid_19_india.csv")
```

```
In [4]: data
```

```
Out[4]:
```

	Sno	Date	Time	State/UnionTerritory	ConfirmedIndianNational	ConfirmedForeignNational
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
3	4	2020-02-02	6:00 PM	Kerala	3	0
4	5	2020-02-03	6:00 PM	Kerala	3	0
...	...	...	...	...	...	...
16845	16846	2021-07-07	8:00 AM	Telangana	-	-
16846	16847	2021-07-07	8:00 AM	Tripura	-	-
16847	16848	2021-07-07	8:00 AM	Uttarakhand	-	-
16848	16849	2021-07-07	8:00 AM	Uttar Pradesh	-	-
16849	16850	2021-07-07	8:00 AM	West Bengal	-	-

16850 rows × 9 columns



```
In [5]: data.head()
```

Out[5]:

	Sno	Date	Time	State/UnionTerritory	ConfirmedIndianNational	ConfirmedForeignNational	Cure
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	(
3	4	2020-02-02	6:00 PM	Kerala	3	0	(
4	5	2020-02-03	6:00 PM	Kerala	3	0	(

```
In [6]: states_confirmed = data.groupby('State/UnionTerritory').Confirmed.sum()
states_confirmed
```

```
Out[6]: State/UnionTerritory
Andaman and Nicobar Islands      1675248
Andhra Pradesh                   324146783
Arunachal Pradesh                5598324
Assam                           80418492
Bihar                          106881540
Bihar****                       1430909
Cases being reassigned to states 345565
Chandigarh                      8691806
Chhattisgarh                   128751782
Dadra and Nagar Haveli          20722
Dadra and Nagar Haveli and Daman and Diu 1566846
Daman & Diu                      2
Delhi                          236972842
Goa                            22280065
Gujarat                        114557615
Haryana                        107408371
Himachal Pradesh               23052151
Jammu and Kashmir              46899925
Jharkhand                      49971564
Karnataka                      387597335
Kerala                         344319045
Ladakh                         3344131
Lakshadweep                    561459
Madhya Pradesh                 108712983
Maharashtra                    908892470
Manipur                        9440912
Meghalaya                      5221064
Mizoram                       1822190
Nagaland                      4089547
Odisha                        126408397
Puducherry                     15858688
Punjab                         78999515
Rajasthan                      128998101
Sikkim                        2315519
Tamil Nadu                     342829697
Telangana                      38162058
Telengana                      69990668
Tripura                       11397656
Unassigned                     161
Uttar Pradesh                  252843682
Uttarakhand                    41179396
West Bengal                    209822848
Name: Confirmed, dtype: int64
```

```
In [7]: states_deaths = data.groupby('State/UnionTerritory').Deaths.sum()
```

```
states_deaths
```

```
Out[7]: State/UnionTerritory
Andaman and Nicobar Islands      22624
Andhra Pradesh                   2475816
Arunachal Pradesh                19303
Assam                           459575
Bihar                           756282
Bihar****                       18881
Cases being reassigned to states      0
Chandigarh                      119356
Chhattisgarh                   1591126
Dadra and Nagar Haveli           8
Dadra and Nagar Haveli and Daman and Diu      874
Daman & Diu                      0
Delhi                          4066907
Goa                             338359
Gujarat                        1866811
Haryana                        1166573
Himachal Pradesh               371931
Jammu and Kashmir              686680
Jharkhand                      569298
Karnataka                     4819018
Kerala                        1327754
Ladakh                         38578
Lakshadweep                    2178
Madhya Pradesh                 1427780
Maharashtra                   19314532
Manipur                       122089
Meghalaya                     66293
Mizoram                       5073
Nagaland                      39420
Odisha                        600149
Puducherry                    249683
Punjab                        2216735
Rajasthan                     1159823
Sikkim                        41530
Tamil Nadu                    4731627
Telangana                     217455
Telengana                     400427
Tripura                      124444
Unassigned                     0
Uttar Pradesh                 3347656
Uttarakhand                   728512
West Bengal                   3214840
Name: Deaths, dtype: int64
```

```
In [9]: states_cured = data.groupby('State/UnionTerritory').Cured.sum()
states_cured
```

```
Out[9]: State/UnionTerritory
Andaman and Nicobar Islands      1589935
Andhra Pradesh                   303427899
Arunachal Pradesh                5150519
Assam                           74011348
Bihar                          100131380
Bihar****                       1402468
Cases being reassigned to states      0
Chandigarh                      7980284
Chhattisgarh                   117163544
Dadra and Nagar Haveli           20352
Dadra and Nagar Haveli and Daman and Diu  1470986
Daman & Diu                      0
Delhi                          224062704
Goa                            20224042
Gujarat                        103995131
Haryana                       100010131
Himachal Pradesh                20682770
Jammu and Kashmir               42295048
Jharkhand                      46083978
Karnataka                      345648926
Kerala                        311127643
Ladakh                         3059045
Lakshadweep                    471712
Madhya Pradesh                 100169697
Maharashtra                    813788907
Manipur                       8420223
Meghalaya                     4606548
Mizoram                       1534630
Nagaland                      3628619
Odisha                        117984789
Puducherry                    14376916
Punjab                        71108712
Rajasthan                     117312772
Sikkim                        1983899
Tamil Nadu                    317067499
Telangana                     35544978
Telengana                     64666267
Tripura                      10479169
Unassigned                     0
Uttar Pradesh                 232529439
Uttarakhand                   36684388
West Bengal                   195296839
Name: Cured, dtype: int64
```

```
In [10]: data['Confirmed'].sum()
```

```
Out[10]: 4353478074
```

```
In [11]: data['Deaths'].sum()
```

```
Out[11]: 58726000
```

```
In [12]: data['Cured'].sum()
```

Out[12]: 3977194136

```
In [14]: maharashtra = data[data['State/UnionTerritory'] == 'Maharashtra']

maharashtra
```

Out[14]:

	Sno	Date	Time	State/UnionTerritory	ConfirmedIndianNational	ConfirmedForeignNational
76	77	2020-03-09	6:00 PM	Maharashtra	2	0
91	92	2020-03-10	6:00 PM	Maharashtra	5	0
97	98	2020-03-11	6:00 PM	Maharashtra	2	0
120	121	2020-03-12	6:00 PM	Maharashtra	11	0
133	134	2020-03-13	6:00 PM	Maharashtra	14	0
...	...	...	...	...	...	...
16690	16691	2021-07-03	8:00 AM	Maharashtra	-	-
16726	16727	2021-07-04	8:00 AM	Maharashtra	-	-
16762	16763	2021-07-05	8:00 AM	Maharashtra	-	-
16798	16799	2021-07-06	8:00 AM	Maharashtra	-	-
16834	16835	2021-07-07	8:00 AM	Maharashtra	-	-

486 rows × 9 columns



```
In [21]: date_death = data.groupby('Date').Deaths.sum()  
date_death
```

```
Out[21]: Date  
2020-01-30      0  
2020-01-31      0  
2020-02-01      0  
2020-02-02      0  
2020-02-03      0  
...  
2021-07-03    401050  
2021-07-04    402005  
2021-07-05    402728  
2021-07-06    403281  
2021-07-07    404211  
Name: Deaths, Length: 525, dtype: int64
```

```
In [22]: date_cured = data.groupby('Date').Cured.sum()  
date_cured
```

```
Out[22]: Date  
2020-01-30      0  
2020-01-31      0  
2020-02-01      0  
2020-02-02      0  
2020-02-03      0  
...  
2021-07-03    29605779  
2021-07-04    29658078  
2021-07-05    29700430  
2021-07-06    29752294  
2021-07-07    29799534  
Name: Cured, Length: 525, dtype: int64
```



```
In [24]: confirmed_indiannational = data.groupby('State/UnionTerritory').ConfirmedIndianNa
confirmed_indiannational
```

```
Out[24]: State/UnionTerritory
Andaman and Nicobar Islands      116-----
-----...
Andhra Pradesh                   11111112335789111214-----
-----...
Arunachal Pradesh                -----
-----...
Assam                           -----
-----...
Bihar                           2234669-----
-----...
Bihar****
--
Cases being reassigned to states -----
-----...
Chandigarh                      1115677778-----
-----...
Chhattisgarh                   1111111666-----
-----...
Dadra and Nagar Haveli
--
Dadra and Nagar Haveli and Daman and Diu -----
-----...
Daman & Diu
-
Delhi                          11123334456677789111625282829303535
38-----...
Goa                             333-----
-----...
Gujarat                        5718293237424244-----
-----...
Haryana                        0000000000000133337121414161619----
-----...
Himachal Pradesh               22233333-----
-----...
Jammu and Kashmir              11111223334444447131320-----
-----...
Jharkhand                      -----
-----...
Karnataka                      14446666111114151526333741555555---
-----...
Kerala                         1123333333333333333333333333333333
33389151717...
Ladakh                         2222233334688101313131313131313----
-----...
Lakshadweep                    -----
-----...
Madhya Pradesh                 446714202030-----
-----...
Maharashtra                    25211141432323639444960647186125121
127177-----...
Manipur                        11111-----
-----...
Meghalaya                      -----
```

```
-----...
Mizoram 1111-----
-----...
Nagaland -----
-----...
Odisha 111122222223-----
-----...
Puducherry 1111111111-----
-----...
Punjab 1111111111221321212929333338-----
-----...
Rajasthan 01111111111122225151522263034393952
-----...
Sikkim -----
-----...
Tamil Nadu 111111111111233571316202334-----
-----...
Telangana -----
-----...
Telengana 11111111111113334481011222525343546
-----...
Tripura -----
-----...
Unassigned
---
Uttar Pradesh 67777779101011121214151822232630323
6404054----...
Uttarakhand 11111333333444-----
-----...
West Bengal 11234799101015-----
-----...
Name: ConfirmedIndianNational, dtype: object
```



```
Meghalaya -----
-----...
Mizoram 0000-----
-----...
Nagaland -----
-----...
Odisha 000000000000-----
-----...
Puducherry 0000000000-----
-----...
Punjab 000000000000000000-----
-----...
Rajasthan 11414141414141422222222222222222--
-----...
Sikkim -----
-----...
Tamil Nadu 000000000000002222666-----
-----...
Telangana -----
-----...
Telengana 00000000000000222911111010101010
-----...
Tripura -----
-----...
Unassigned
---
Uttar Pradesh 00000000111111111111111111-----
-----...
Uttarakhand 00000000011111-----
-----...
West Bengal 0000000000-----
-----...
Name: ConfirmedForeignNational, dtype: object
```

```
In [27]: data.min()
```

```
Out[27]: Sno 1
Date 2020-01-30
Time 00:00:00
State/UnionTerritory Andaman and Nicobar Islands
ConfirmedIndianNational -
ConfirmedForeignNational -
Cured 0
Deaths 0
Confirmed 0
dtype: object
```

In [28]: `data.max()`

Out[28]:

Sno	16850
Date	2021-07-07
Time	00:00:00
State/UnionTerritory	West Bengal
ConfirmedIndianNational	9
ConfirmedForeignNational	9
Cured	5872268
Deaths	123531
Confirmed	6113335
dtype:	object

In [29]: `pd.DataFrame(data.describe())`

Out[29]:

	Sno	Cured	Deaths	Confirmed
<b>count</b>	16850.000000	1.685000e+04	16850.000000	1.685000e+04
<b>mean</b>	8425.500000	2.360353e+05	3485.222552	2.583667e+05
<b>std</b>	4864.320353	5.225438e+05	9330.541749	5.672808e+05
<b>min</b>	1.000000	0.000000e+00	0.000000	0.000000e+00
<b>25%</b>	4213.250000	2.658500e+03	22.000000	3.644750e+03
<b>50%</b>	8425.500000	2.889500e+04	453.000000	3.336150e+04
<b>75%</b>	12637.750000	2.537510e+05	3071.250000	2.666530e+05
<b>max</b>	16850.000000	5.872268e+06	123531.000000	6.113335e+06

In [30]: `from datetime import date`

In [31]: `state_data = data.groupby(['State/UnionTerritory'])`

In [32]: `state_data`

Out[32]: `<pandas.core.groupby.generic.DataFrameGroupBy object at 0x0000025292011520>`

In [ ]:

In [37]: data.head()

Out[37]:

	Sno	Date	Time	State/UnionTerritory	ConfirmedIndianNational	ConfirmedForeignNational	Ci
0	1	2020-01-30	00:00:00	Kerala	1	0	
1	2	2020-01-31	00:00:00	Kerala	1	0	
2	3	2020-02-01	00:00:00	Kerala	2	0	
3	4	2020-02-02	00:00:00	Kerala	3	0	
4	5	2020-02-03	00:00:00	Kerala	3	0	

In [38]: data.tail()

Out[38]:

	Sno	Date	Time	State/UnionTerritory	ConfirmedIndianNational	ConfirmedForeignNational	Ci
16845	16846	2021-07-07	00:00:00	Telangana	-		
16846	16847	2021-07-07	00:00:00	Tripura	-		
16847	16848	2021-07-07	00:00:00	Uttarakhand	-		
16848	16849	2021-07-07	00:00:00	Uttar Pradesh	-		
16849	16850	2021-07-07	00:00:00	West Bengal	-		

In [ ]:

In [ ]: