CSE506 Assignment 1
README
Solutions attempted by
Gursimran Kaur 2018336
Hrithik Malhotra 2018236

Assumptions

1. For all these sub-parts, we have assumed the start date to be 2020-03-14 and the end date to be 2020-09-05.
2. It is assumed that there won't be a start date before the year 1920.
3. Delhi is assumed to be a state instead of a union territory.
4. numpy.var() and numpy.covar() used instead of writing these menial functions on our own for faster computation. A slight difference in answers noted signifying the fact that nump.var() and numpy.covar() have a delta degree of freedom (ddof) of 0 and 1 respectively.
5. Assuming no particular case count will have more than 10cr cases.

Ans.1

a. confirmed_count: 4107298
    recovered_count: 3176139
    deceased_count: 70080
b. confirmed_count: 188193
    recovered_count: 163785
    deceased_count: 4538
c. confirmed_count: 1072055
    recovered_count: 800359
    deceased_count: 30813
d. Confirmed
    Highest affected State(s) is: Maharashtra
    Highest affected State count is: 883862

    Recovered

    Highest affected State(s) is: Maharashtra
    Highest affected State count is: 636574

    Deceased

Highest affected State(s) is: Maharashtra
Highest affected State count is: 26275

e. Confirmed

Lowest affected State(s) is: Mizoram
Lowest affected State count is: 1062

Recovered

Lowest affected State(s) is: Mizoram
Lowest affected State count is: 713

Deceased

Lowest affected State(s) is: Mizoram
Lowest affected State count is: 0

f. Confirmed

Day(s): 2020-06-23
Count: 3947

Recovered

Day(s): 2020-06-20
Count: 7725

Deceased
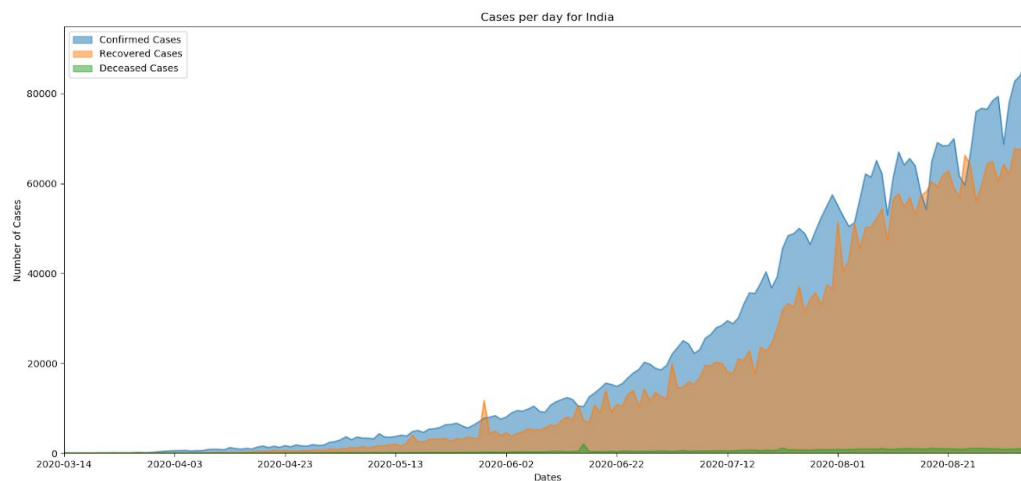
Day(s): 2020-06-16
Count: 437

g. Active cases in each state
Andhra Pradesh: 100880
Arunachal Pradesh: 1525
Assam: 28404
Bihar: 16735
Nagaland: 701
Mizoram: 349
Sikkim: 561
Rajasthan: 14996
Odisha: 25856
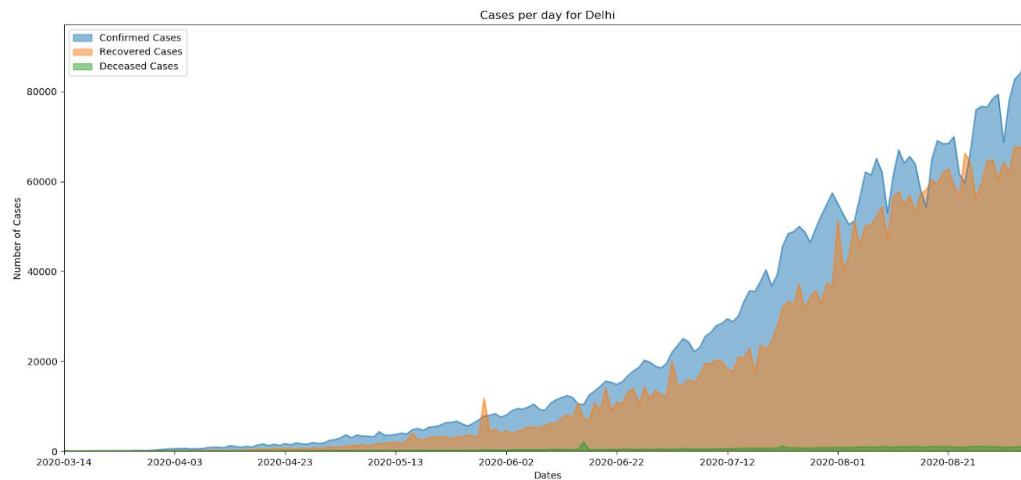Himachal Pradesh: 2023
Uttar Pradesh: 59963

Jharkhand: 14980
Chhattisgarh: 22320
Punjab: 15870
Kerala: 21867
Tamil Nadu: 51580
Uttarakhand: 7649
Haryana: 14912
Jammu And Kashmir: 9547
Maharashtra: 221013
Karnataka: 100224
Gujarat: 16266
Delhi: 19870
Telangana: 32405
Tripura: 5905
Madhya Pradesh: 15687
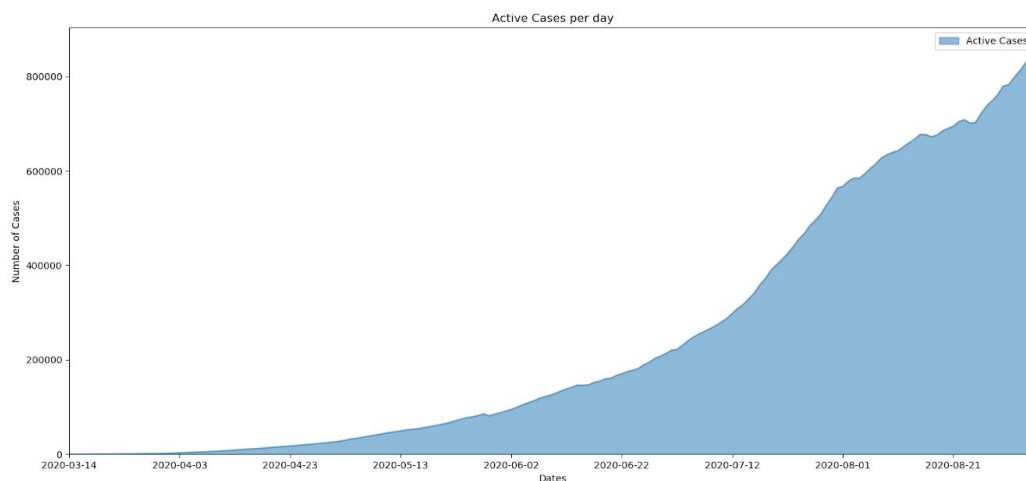West Bengal: 23390
Manipur: 1872
Goa: 4945

Ans. 2

a.

b.

c.

Ans. 3.
Confirmed Slope: 12.28406502940159
Confirmed Intercept: -17.861346011131673
Recovered Slope: 12.375845589761328
Recovered Intercept: -164.66574378478674
Deceased Slope: 0.19132037357315806
Deceased Intercept: 8.852237847866423

A slight difference in values is noted due to usage of numpy.var() and numpy.covar().

Gursimran Kaur   2018336   Hrithik Malhotra   2018236