**Title:**

**Analysis and prediction of number of deaths due to the corona virus pandemic within a specific demographic region**

**Description:**

This project will analyze and estimate how will the Covid-19 pandemic affect the lives of the people, how many deaths might occur until the vaccine is discovered and delivered to that region.

Possible Hypotheses to be tested:

Q: Is there a positive correlation between the average age of a area to the number of deaths or the number of possible cases?

Q: Does social distancing help to mitigate the spread of the virus?

I will try to analyze different scenarios and use a large set of random variables for my analysis, the estimate guesses will be based on the existing statistics available to produce the most efficient results. Although I haven’t yet thought about the possible probability distributions but some random variables to be considered are as follows:

1. The average age across the region.
2. Smokers across the region.
3. How long is the incubation period, when the person doesn’t have any symptoms but still is contagious?
4. The average recovery rate once infected which will be different for different age groups.

Another thing I had in mind was to implement a random variable known as R0 which is basically tells you the average number of people who will catch a disease from one contagious person. It specifically applies to a population of people who were previously free of infection and haven’t been vaccinated. If a disease has an R0 of 18, a person who has the disease will transmit it to an average of 18 other people, as long as no one has been vaccinated against it or is already immune to it in their community.

As R0 value is unique for every infection, I was hoping to make the model flexible for any future infections by just making minor alterations in the code and changing the parameter R0.

References:

<https://www.kaggle.com/lisphilar/covid-19-data-with-sir-model/notebook>

<https://www.healthline.com/health/r-nought-reproduction-number>

**Team Members:**

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