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Mobile vans to test for COVID-19 Infection

Description:

Government of India has seen that even though outbreak of COVID-19 is managed better, there are no signs of it going away. Health experts have been urging the Government to test more people. This however has its own challenges. Asking people to travel to testing facilities may expose to the disease all the more and there may be constraints as to how many such facilities can be set up. Hence Government is thinking of coming up with a scheme of mobile vans that have health crew with facilities to test people. These vans can move across a city such as Bangalore. Initially it is planned to set up 3 vans accessible to as many people as possible. The following are additional constraints/criteria.

(1) The vans should avoid containment zones/hotspots completely.
(2) They should be located to areas where people with co-morbidities are more and they need to be tested first.
(3) Otherwise they should randomly test people to get an assessment of the problem.
(4) Your application should detect as many cases before they develop symptoms
(5) The Vans will be in different ward each day generally but can remain in the same ward as well.

Your solution should address the following:

(a) Receive the input on wards in Bangalore and their status as far as number of cases in each ward and how they are categorized on daily basis. Display the input collected appropriately.
(b) Provide an interface to receive inputs from Aarogya-Sethu App on details of people in each ward. This may contain gender, age, co-morbidities, symptom and nearest contact information and display the inputs collected. (For now you can create a stub/dummy app or alternate mechanism to get the input).
(c) Based on the above data decide on which 3 wards the Vans will be stationed, in line with the criteria above.
(d) Based on the above data decide an algorithm to test 100 patients each day in line with the constraint/criteria above.
(e) Messages on appointments should be sent to the patients and tracking done how many actually got tested and results of testing.
(f) Output a dash-board for the city ward-wise on status of testing and spread of COVID-19.

Tools: Familiar with packages like numpy, pandas, Web scrapping (to extract data from Aarogya-Sethu App), MySql(Data Base), and simple web application for Dash Board creation and Interfacing.