E Cell - HACKATHON 2K21

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**Theme**: Full Stack Development

**Problem Statement** - The primary concern regarding COVID-19 vaccination in India is the lack of adequate resources. Most of the hospitals in India face overcrowding and have congested vaccination rooms which put people at the risk of getting infected at the vaccination centre as the social distancing cannot be maintained. Additionally, old and speciallyabled people find it difficult to commute to vaccination centres. But since this notion curbs the vaccination process, the problem needs a viable solution. One way to tackle this problem while ensuring a minimum safe social distancing is to use mobile vaccination vans to vaccinate the population. But once opened, a certain number of people need to be vaccinated with a single dose. We need an efficient system that will ensure minimum wastage of vaccines while systematically carrying out the mobile vaccination process. Build a secure, fully functional website that solves the above-mentioned problem.

**Methodology proposed**

To avoid overcrowding of people at the vaccination centers and to provide vaccination facility for elderly people physically-challenged people, we propose an idea to provide vaccination services with ambulance or van to their living locations in order to ensure security and safety.

With our web application users can register for vaccination along with their address and the request will be sent to a nearest government hospital by using Dijkstra's algorithm, which is for finding shortest distance between two points or nodes. Upon processing the request the hospital will send another request to the nearest Primary Health Center(PHC). The hospital will also sent vaccine supplies to that particular Primary Health Center.

Once the Primary Health Center received the vaccination supplies from the government hospital, an ambulance or a van will be sent to the user’s address or location for vaccination.

The government Hospitals will act like a main node, which will transfer the data to the Primary Health Center nearest to user’s location. Then Primary Health Center proceeds by sending an ambulance or a van to user’s location for vaccination. This system will prevent overcrowding and also ensures vaccinations for every people in their living places.

**Development**

For our web application we use React JS with Material UI for front-end and Node JS for back-end and MongoDB for storing and retrieving data from database.

Front End: React JS and Material UI

Back End: Node JS

Database Query Language: MongoDB