



COVID-19 Patient Tracking

Concept by Govt of Punjab

Implemented by:
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CORONA VIRUS | INDIA DASHBOARD

COVID Testing Sites None

Punjab COVID19 Dashboard

ANDAMAN AND NICOBAR ISLANDS : 0

Andhra Pradesh : 8

Arunachal Pradesh : 0

Assam : 0

Bihar : 3

CHANDIGARH : 7

Chhattisgarh : 1

DAMAN AND DIU : 0

Delhi : 30

Goa : 0

Gujarat : 33

Haryana : 28

Himachal Pradesh : 3

Jammu and Kashmir : 4

Jharkhand : 0

Karnataka : 37

Kerala : 95

Ladhak : 13

LAKSHADWEEP : 0

Madhya Pradesh : 7

Maharashtra : 89

Manipur : 1

Meghalaya : 0

Confirmed Cases

519

Last Updated 05:45 PM, MoHFW

Number of Death

9

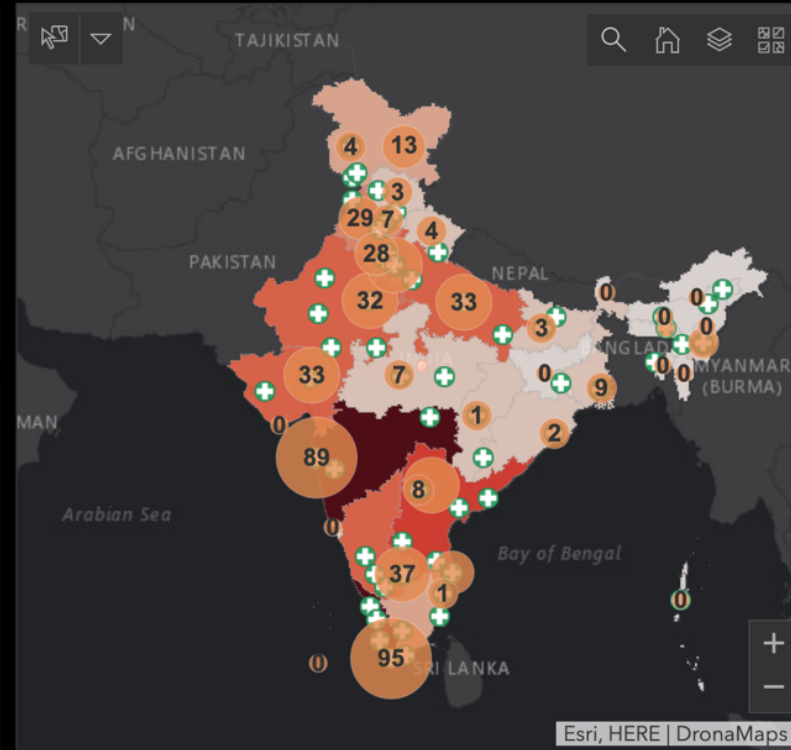
Percentage of Death 1.734 %

Hospitalised Cases

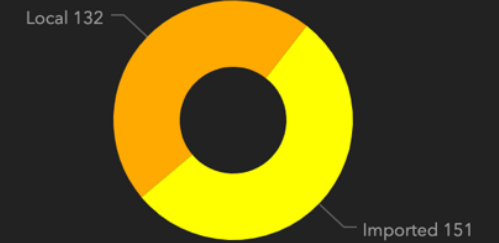
470

Recovered Cases

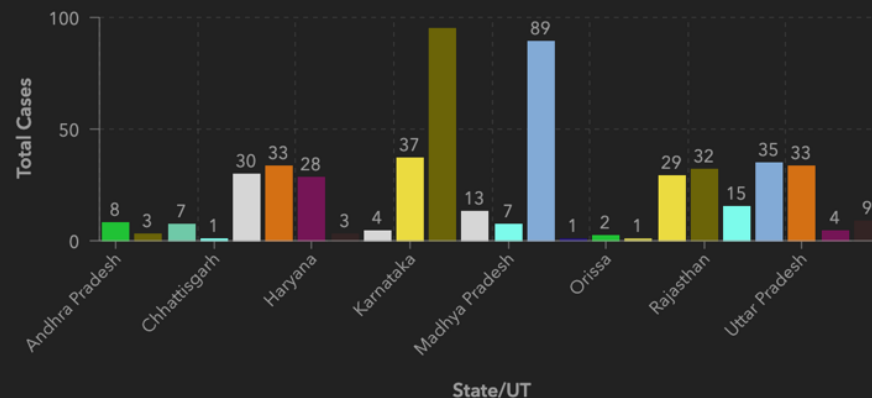
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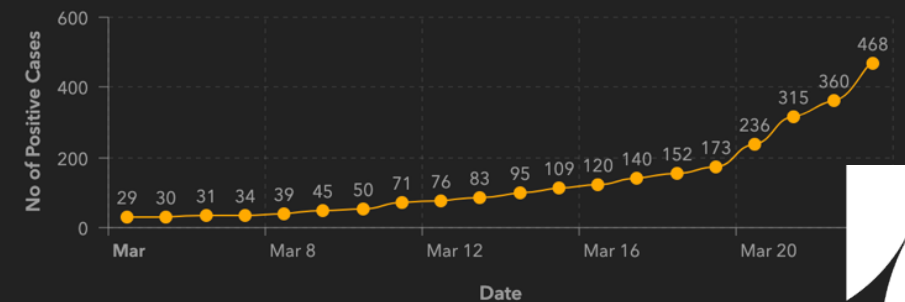
Transmission Source



Nationality



Rise Trend



Serial Chart

Increment Graph



Features

1. Track and maintain master patient data with following fields:

- Nearest COVID-19 Hospitals / Test Center Locations
- Symptomatic on/till Date
- Admitted on/till Date
- Discharged Date
- Death
- Total Samples Collected Till Date
- Test Result (+ve/-ve)
- Result Awaited
- Currently Admitted
- Total Admitted by Quarantine Facility
- Latitude/Longitude of Patients captured via Mobile App with Live GPS



Features

2. Track Patient Movement on Admin Dashboard

Multiple modalities of tracking, all data fused together for best accuracies.

- Track using Phone app using Live GPS
- Track using Tower CDR data
- Track using Cell operator VLR data

3. Predictions and Analytics

- Trend line, rate of increase, and rate of rate of increment (double differentials).
- Dates when specific milestones will be hit (example date when 1000 patients/death, 2000 patients/death, etc).
- Heat Maps and Red zoning of districts/sub-district neighborhoods based on real-time location of quarantined patients with density distribution.
- Geofencing and alerts for high-risk patients/suspects.



Features

4. Geofencing

- Detect geofence violations of patients under quarantine.
- Receive real-time data from cell towers and dynamically set geofence for suspect cases (requires heavy real-time ingestion of tower data).

5. Citizen centric mobile webpage to track own location amidst red zones/ quarantine zones / 144CRPC / Curfew.

- Progressive Web-Apps (PWA)
- Mobile Apps (do note that Google and Apple have restricted publishing of COVID-19 apps)
- Mobile WebSites and QR codes.

6. Further features can be built-in as needed within one day:

- Government notices
- FAQs
- Chatbot integration
- Any other rapidly changing information for Citizens.



COVID -19 Public Dashboards

DronaMaps Private Limited



CORONA VIRUS | INDIA DASHBOARD

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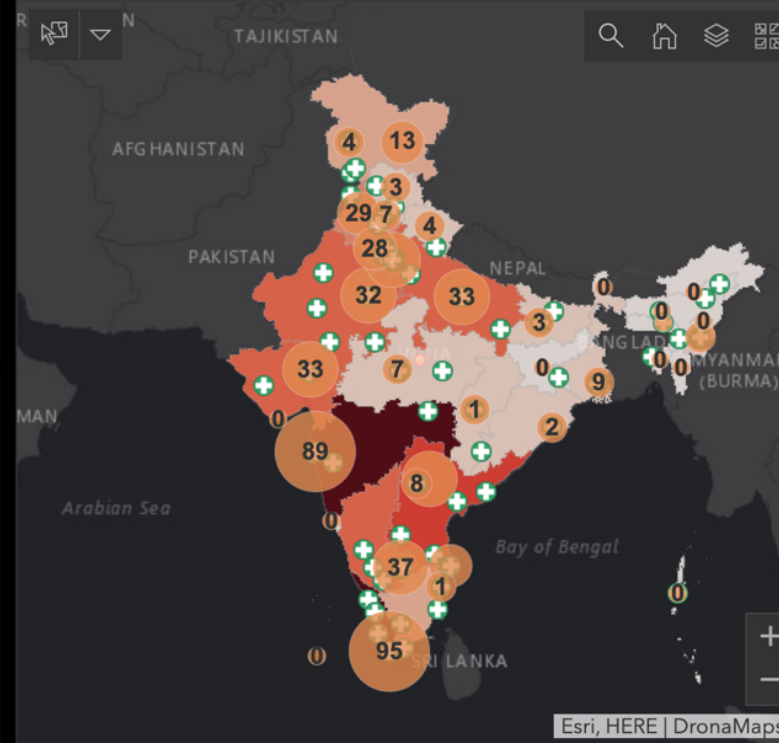
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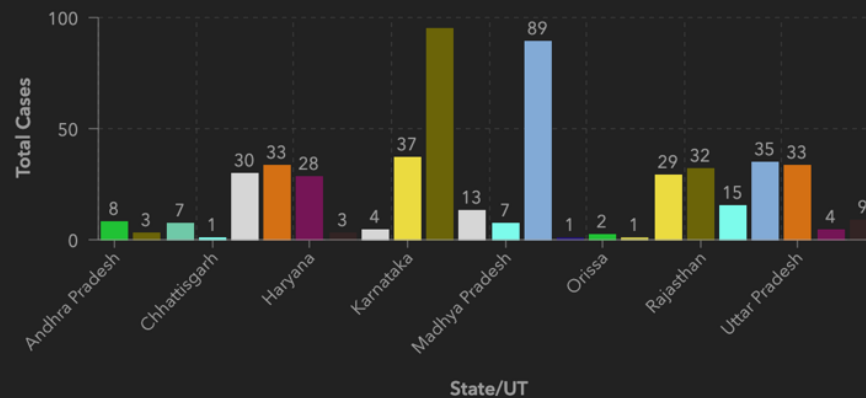
Local 132

Imported 151

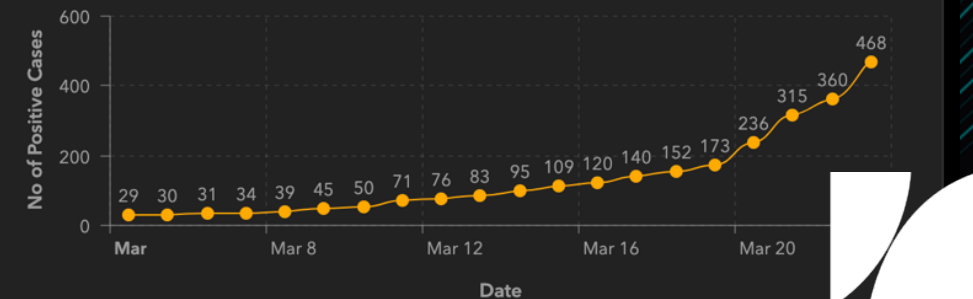
Nationality

Indian 476

Foreigner 43



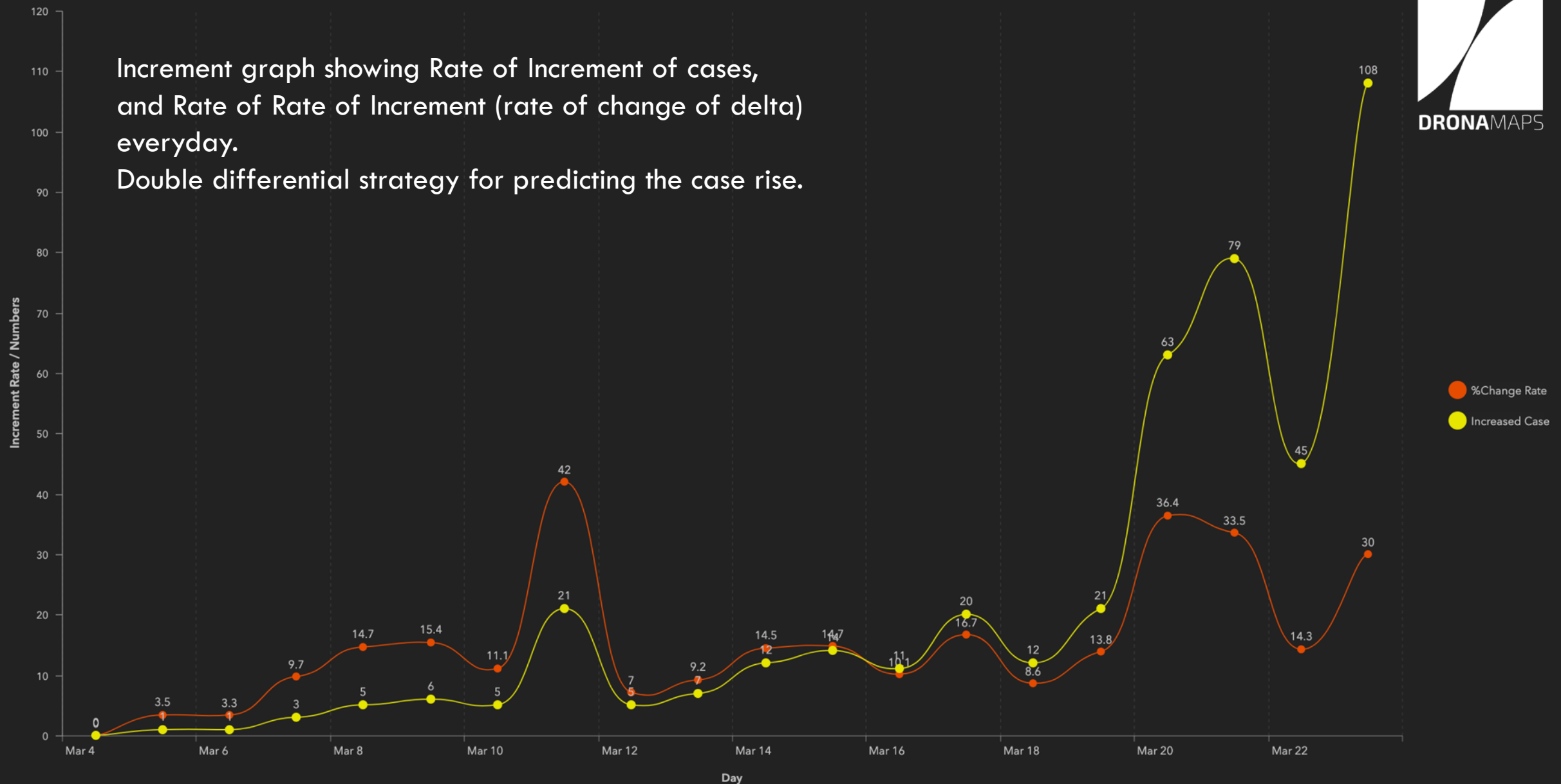
Rise Trend



Serial Chart

Increment Graph

Increment graph showing Rate of Increment of cases,
and Rate of Rate of Increment (rate of change of delta)
everyday.
Double differential strategy for predicting the case rise.





CORONA VIRUS | PUNJAB DASHBOARD

India COVID19 Dashboard

Shahid Bhagat Singh
Nagar ; Total Cases : 15

Sahibzada Ajit Singh
Nagar ; Total Cases : 5

Amritsar ; Total Cases
: 2

Hoshiarpur ; Total
Cases : 1

Tarn Taran ; Total Cases
: 0

Pathankot ; Total Cases
: 0

Patiala ; Total Cases : 0

Rupnagar ; Total Cases
: 0

Ludhiana ; Total Cases
: 0

Mansa ; Total Cases : 0

Moga ; Total Cases : 0

Muktsar ; Total Cases
: 0

Gurdaspur ; Total Cases

Confirmed
Cases

29

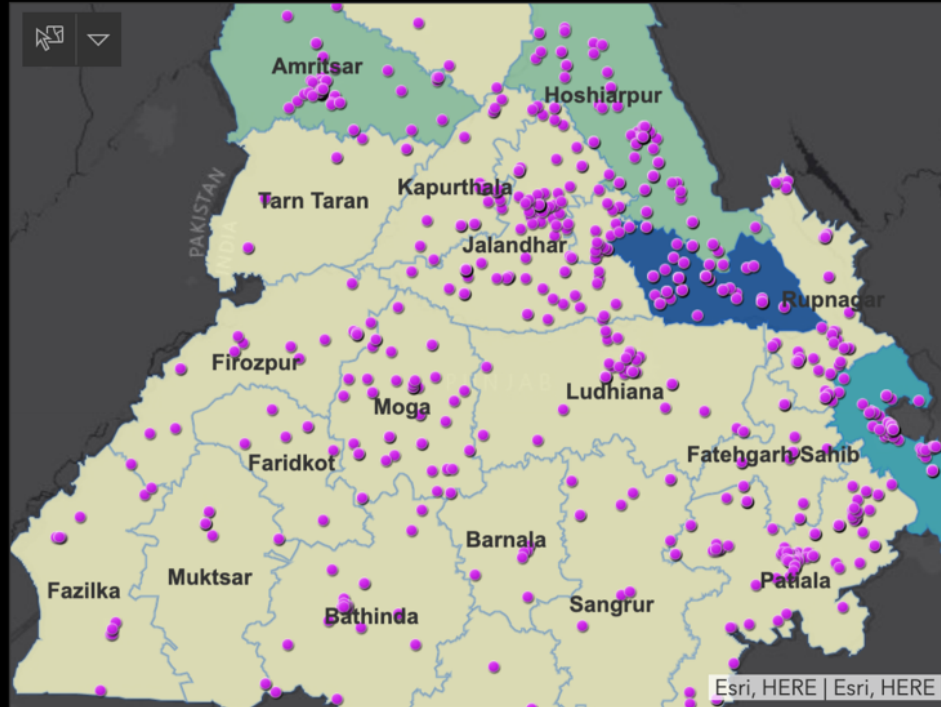
Last Updated 05:45 PM

Number of Deaths

1

No of Quarantine

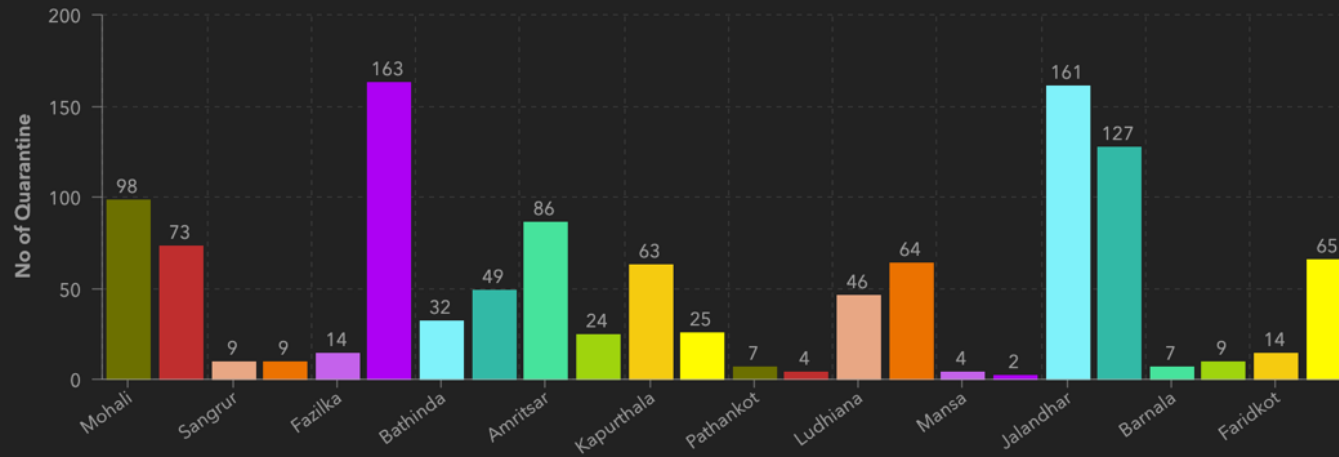
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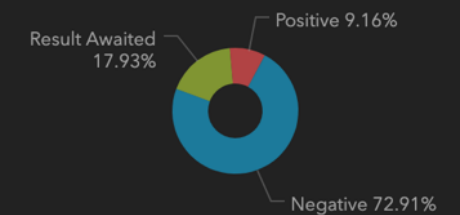
Suspect Cases



86



Status



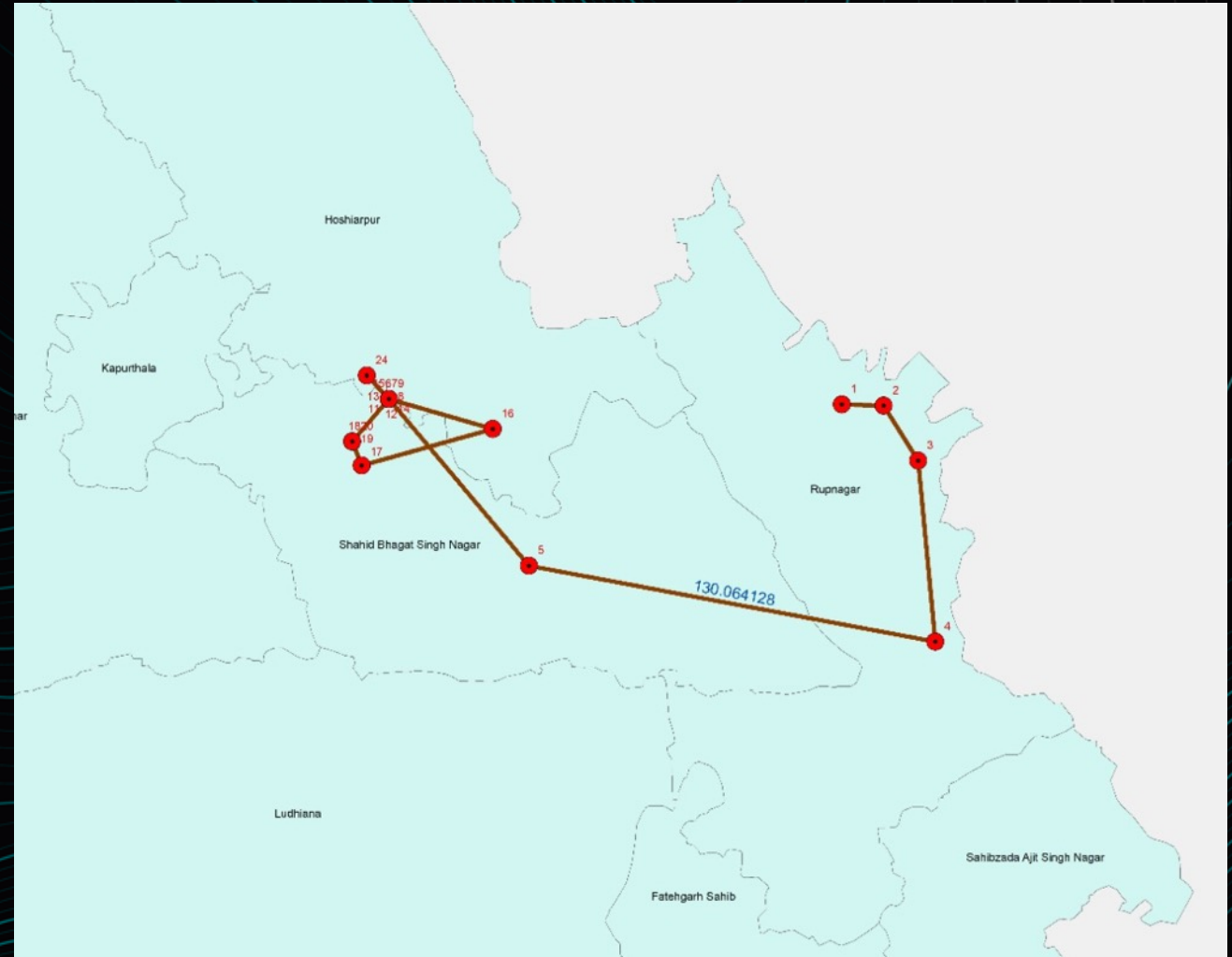


DASHBOARD LINKS

- India Desktop Dashboard: <https://dronamaps.com/indiacorona.html#/>
- India Mobile Dashboard: <https://dronamaps.com/m.corona.html#/>
- Punjab Desktop Dashboard:
<https://dronamaps.com/punjabcorona.html#/>
- Punjab Mobile Dashboard:
<https://dronamaps.com/m.punjabcorona.html#/>
- Dashboard published within

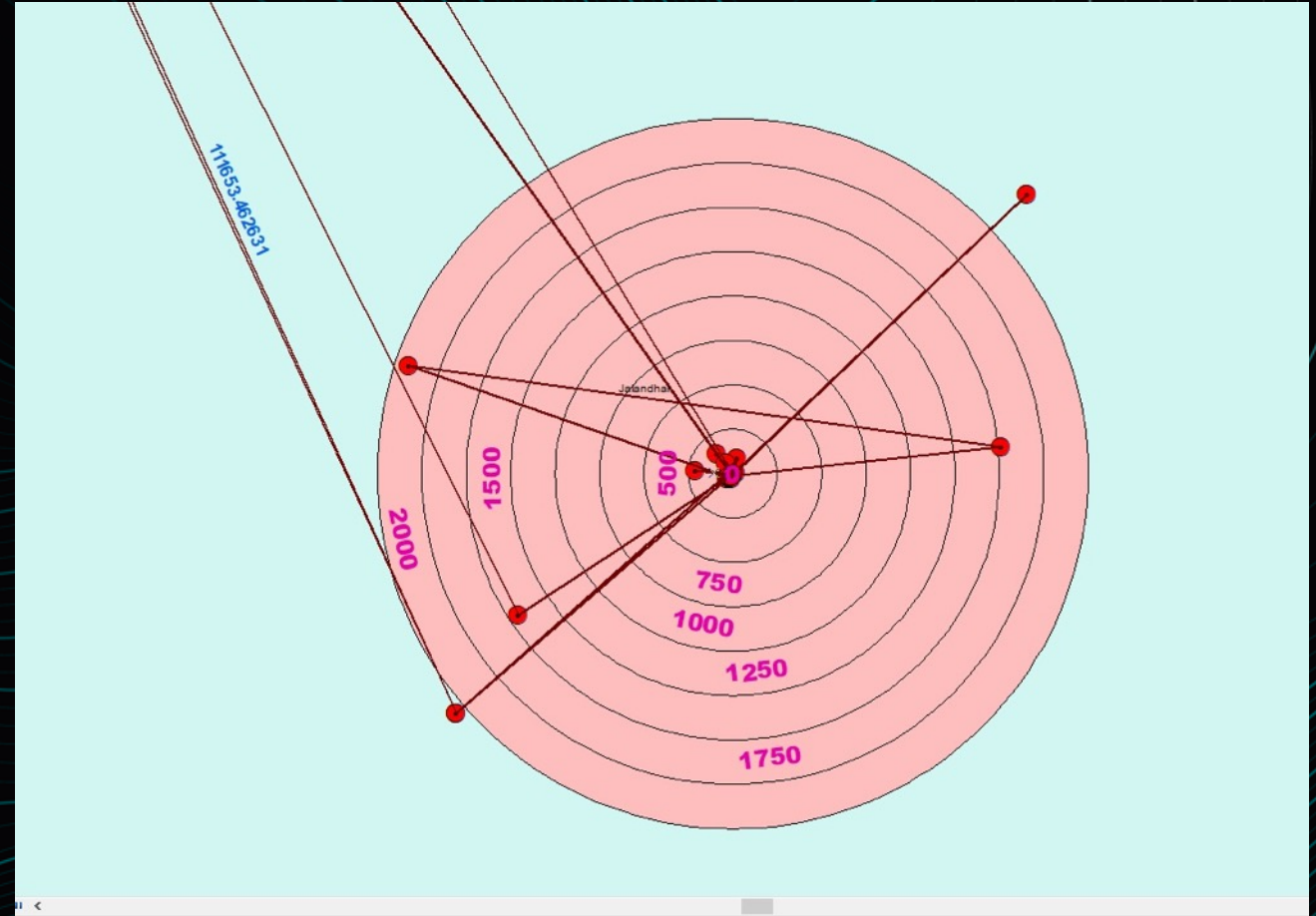
Patient Tracking

- Live Tracking via Mobile App / Tower CDR + VLR records + Mobile GPS
- Patient X travelled a total of 97.67 KM.
- Maximum displacement is 46.24 KM.



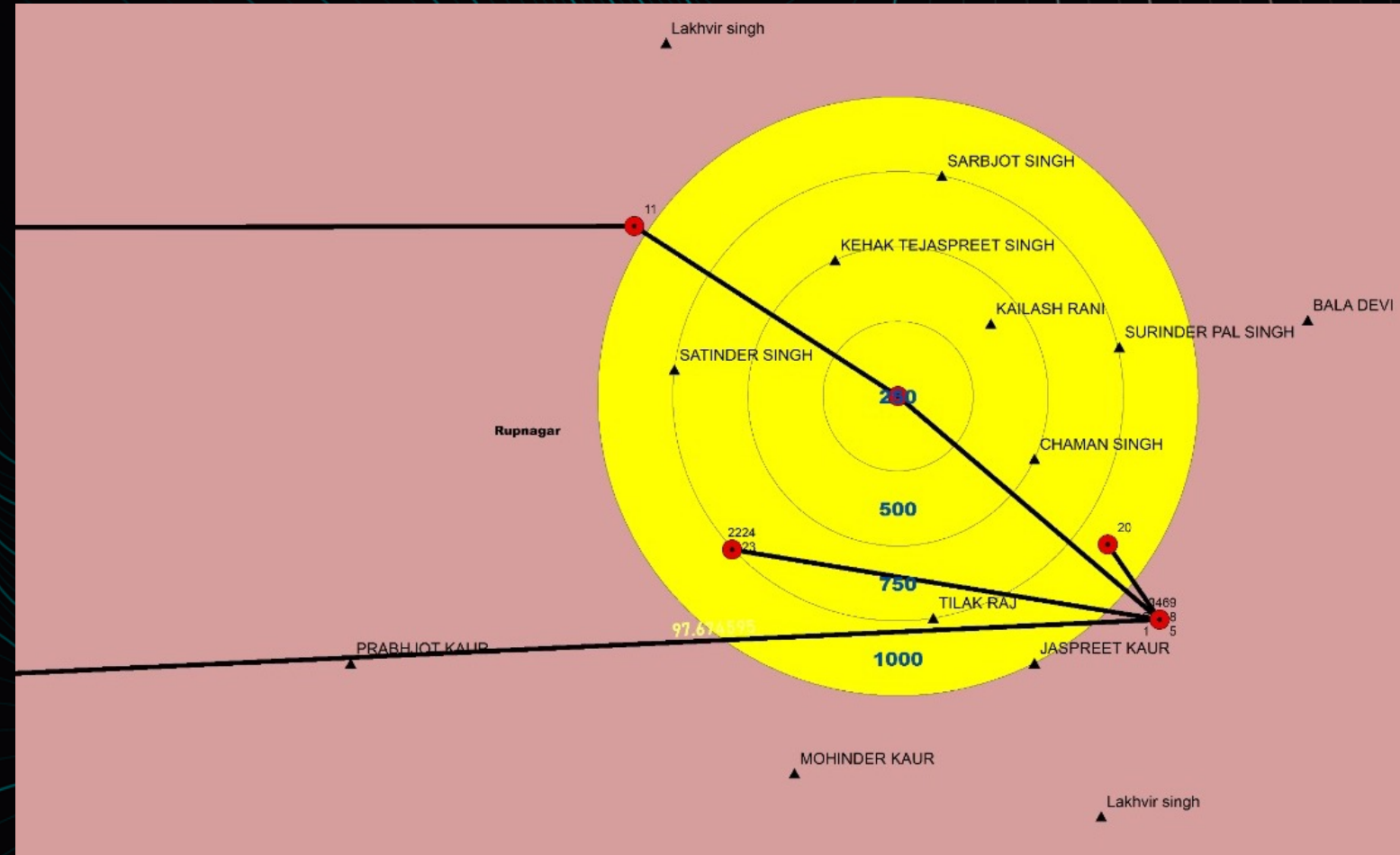
Patient Tracking

- Within 250 m, Patient X changed his location 42 times.
- Buffer rinks of 50m, 100m, 250m, customizable.
- Accuracies can be increased with combining Mobile Live GPS location with CDR/VLR data from cell tower.



Patient Tracking

- 'At-Risk Layer' and 'Immediately Quarantine Layer' based on several factors like proximity and frequency of contact via GPS+CDR data.
- Identify high-risk cases based on real-time datasets – and take steps to quarantine them with location history.
- Sample Patient Data showing Patient X in center, and affected sample patients in its vicinity.

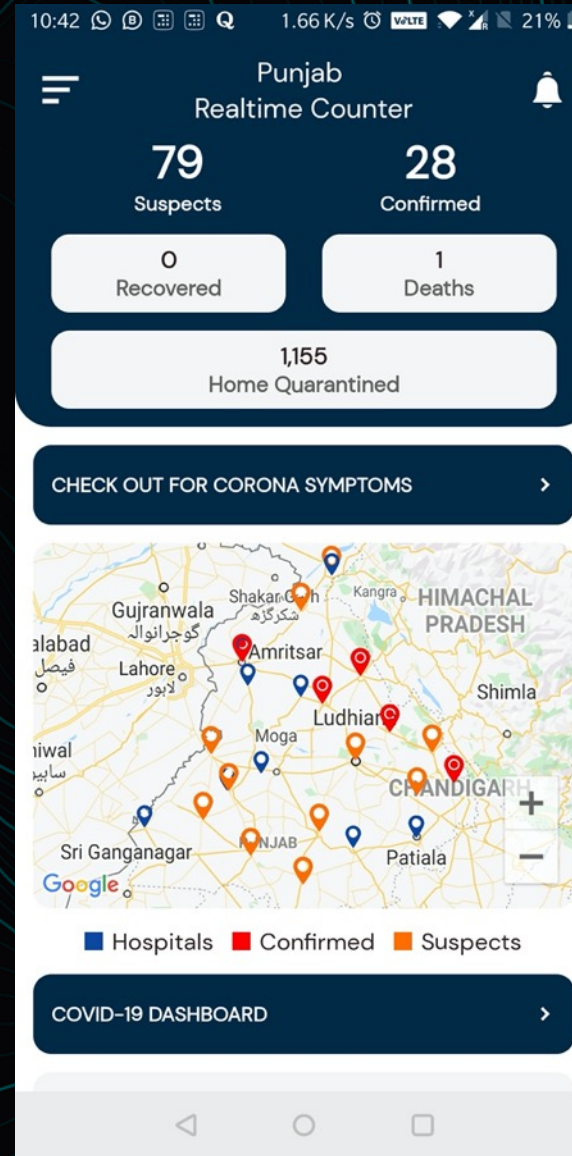




COVA Mobile App

FEATURES

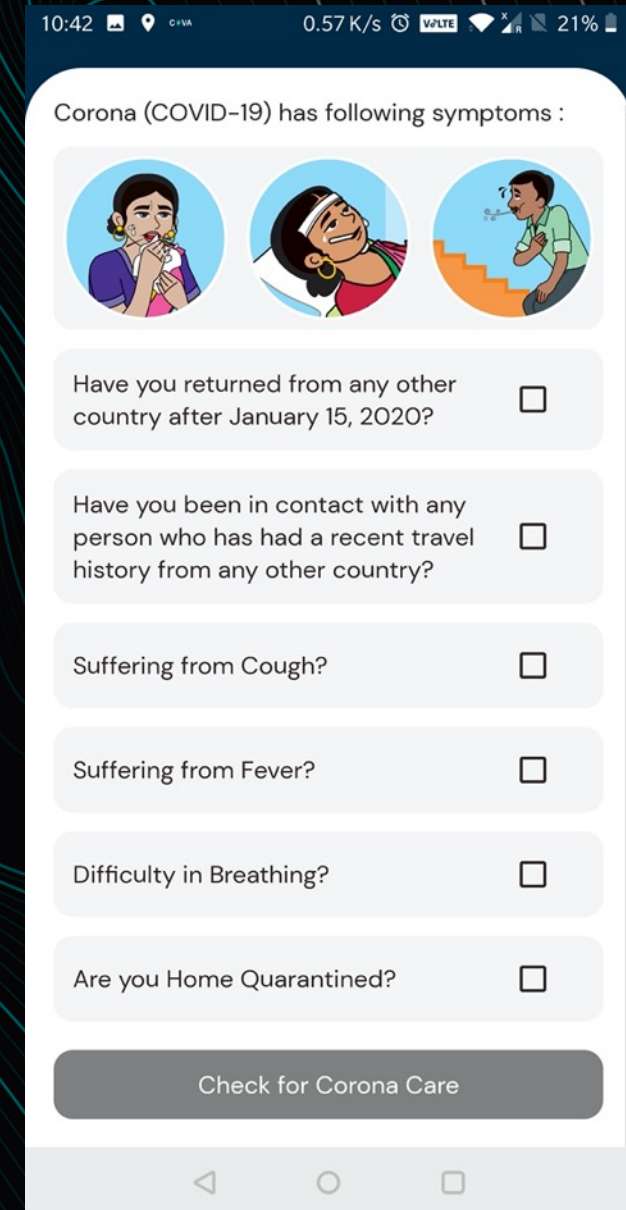
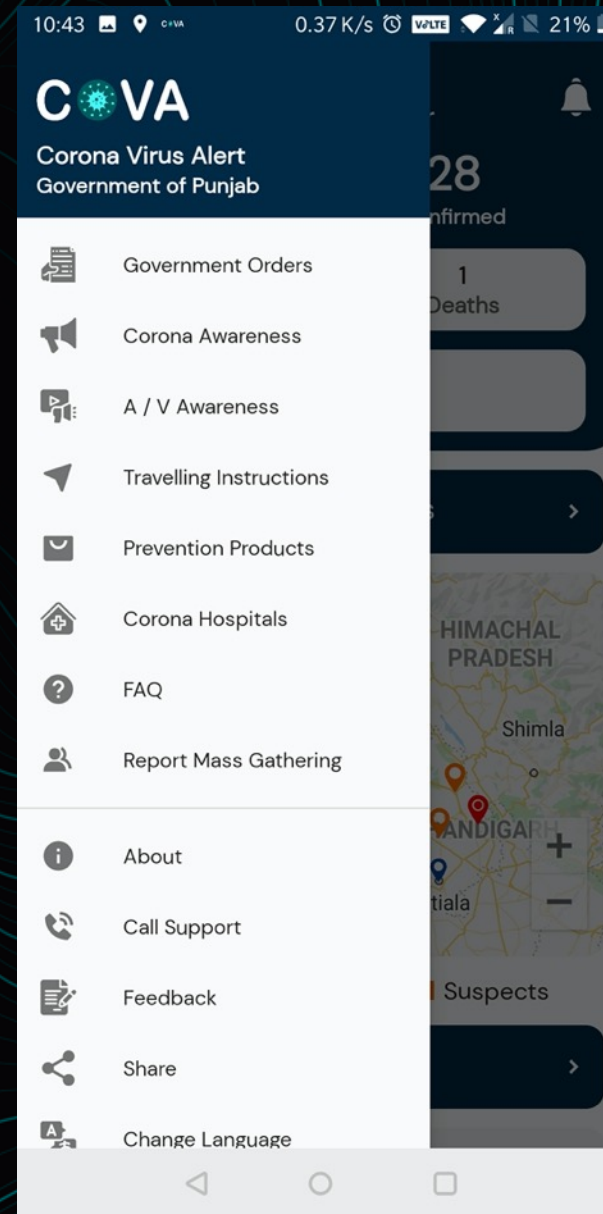
- Admin portal login and Live Track Patients
- Public Portal and Mobile Dashboards
- All nearest Corona Hospitals and Test Centers based on current location
- All Govt Advisories
- Report Mass Gatherings
- eSanjeevni and chatbots being integrated by March 26, 2020.



COVA Mobile App

FEATURES

- Make compulsory for all patients/suspects to install app.
- Live Patient Location Tracking via app.





Current State of Progress...

- All Public Dashboards Live.
- Apps deployed for Punjab State Government.
- Live Tracking of Patients Started.
- CDR data analysis started as batch processing, real-time analysis capability to be reached by March 26, 2020.



Integration Steps

- State Govt / Agency gets in touch by phone/email.
- District/sub-district wise data is released to us by excel sheet/API and custom dashboard for State published in less than 24 hours. The more granular and frequent the data, the better the tracking.
- Admin Portal designed and released in further 48 hours with Patient Tracking (needs more servers, heavy deployment, may involve commercials).
- All dashboards integrable with State Website / Mobile Apps. Code available.



Commercials

- Public facing Dashboards FREE for all Government agencies across India. Just get in touch with us and send your district-wise data everyday, and get it published for your state within 24 hours. Call us for faster integration.
- Admin Dashboards (with Live Patient Tracking and CDR Data Analysis) require several large servers (ESRI Enterprise + GeoAnalytics + GeoEVENT) – License Costs approx. 1 Cr + tax. (usually less than that)
- If state/agency already has ESRI ArcGIS Enterprise License, complete solution including Admin Dashboards will become essentially FREE.
- If any organization doesn't have ability to pay but needs our services, contact us anyway. Ability to pay will not get in the way of DronaMaps services' being rendered in this hour of crisis for the nation & entire humanity.

In this time of crisis, we understand that speed is of utmost importance.



CONTACT

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