# CONTAINMENT ZONE ALERTING APPLICATION

## LITERATURE SURVEY

Currently there are several research works undergoing in the country to prevent Covid-19 cases from rising. Previously our country was importing medical kits like PPE (Personal Protection Kits), mask from outside, but now it has been successful in developing these kits. Along with taking initiatives to fight this disease, our country has also taken steps to make people aware of the disease. The news and media have a great part in creating this awareness by informing the public about the preventive measures that can keep them away from infection. Awareness among the people to carry out all the preventive measures can immensely help to reduce spread of the virus. The country has created containment zones throughout the cities wherever Covid-19 cases have been reported to prevent further spread of the virus. These containment zones have been kept isolated from the outside public to ensure no contamination occurs outside.

After more than 2 months of the lockdown, the government has relaxed some of the lockdown rules and has permitted reopening of government offices, bus and other road transportation facilities and shopping markets. People can move inside the city for work and other purposes. But the containment zones are still being kept isolated, and new containment zones are being formed wherever Covid-19 cases have been reported. These zones are highly contagious as droplets with virus coughed out from an unscreened asymptomatic patient can travel up to 8 m . Though these containment zones are guarded by policemen, still there remains a chance that people might unknowingly step into them. In this situation where people can move in the city, these containment zones pose a risk of infection to these city dwellers. Therefore, informing people about the location of the containment zones can help them bypass

and avoid these zones and thereby reduce the chance of community transmission.

In this paper, we focus on developing a mobile based application to provide information regarding the Covid-19 containment zones in West Bengal. The application further tracks the user's location and provides notification alert if the user has entered a containment zone. The application also provides daily Covid-19 case statistics to the users to keep them updated. The application is developed on Android SDK and uses Firebase Cloud Firestore to store the location data. Android's geofencing client is used to create geofences around the containment zones and notification manager is used to provide notifications. The application also uses RESTful web services to show the Covid-19 cases in West Bengal.

We have tested our application with different users in different locations across West Bengal and it works efficiently and is able to attain our target.

We have conducted a brief survey on the existing apps published in Google playstore which are related to Covid-19. Efforts have been made to include most of the apps in the survey. The summary of the survey is given in Table Table11 which includes the name of the apps, the description of the apps given in Google Playstore by their developers and our comments on the apps after using them

The application uses Firestore which is a flexible and scalable database for mobile, web and server developments from Firebase and Google cloud platform (Cloud Firestore 2020). In Cloud Firestore, the mobile application supports serverless app architecture where the application connects to the Cloud Firestore database directly without any intermediate servers in between (Cloud Firestore SDKs and client libraries 2020). The application receives data from the database using WebSocket. The Web Socket transfers data at a higher speed than HTTP. The database transfers new data to the user as soon as it is updated.

When changes are saved in the database then all connected clients receive the updated data almost instantly. The Cloud Firestore does not always fetch data from the database unless the data has been changed, it gathers previous data from the cache memory which also enables its offline functioning.

## REFERENCE:


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