Application for Maintaining Social Distancing During a Widespread Global Pandemic

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ABSTRACT

During the global pandemic COVID-19, the only way to stop the community spread of the Corona Virus is Social Distancing. **COVID-19 apps** are mobile software applications that use digital tracking to aid contact tracing in response to the COVID-19 pandemic, i.e. the process of identifying persons ("contacts") who may have been in contact with an infected individual. Our application is one such application which directs people in the most basic way to maintain Social Distancing. Provision of certain features makes it feasible and reliable. Use of Swift was applied to prepare the application for IOS platform.

*KEYWORDS: COVID-19APPLICATION, SWIFT, IOS, SOCIAL DISTANCING*

I. INTRODUCTION
1.1. COVID – 19
Preventive measures to reduce the chances of infection include staying at home, avoiding crowded places, keeping distance from others, washing hands with soap and water often and for at least 20 seconds, practising good respiratory hygiene, and avoiding touching the eyes, nose, or mouth with unwashed hands. Social distancing violation is the major border line reason which when violated not only increases the rate of cases but also leads to a widespread in the community.

1.2. APPLICATION FEATURES-
A. **Location:** Mobile location data programs to combat Covid-19 may not be scientifically necessary and could lead to human rights abuses if they are not equipped with effective safeguards to protect privacy. Hence the application does not use the location for data extraction.
B. **Virtual circle**: The application provides citizens, who are users of the application, with the feature of creating a virtual circle. When 2 users come within the given radius of 1 metre their phones will start off a ringing alarm sound directing the person with a direction of safer zone.
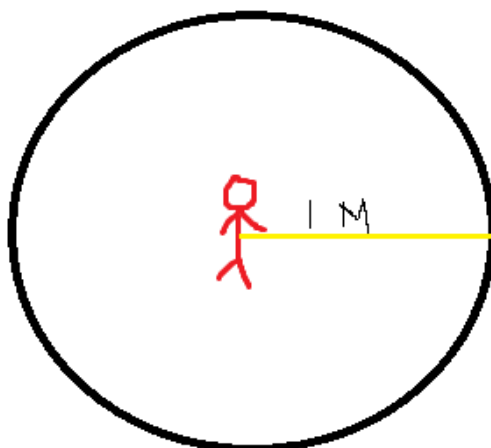

1.1 Image depicting a representation of virtual circle the app uses for detection of violation of social distancing

1.1 Statistics provision

1.2. Why is this application required?

➢ Even after 6 months of being victimized by the corona virus, there is no solid discovery of vaccine which will prevent the community spread.

➢ Unfortunately, the only way we can prevent any further devastating outbreak is through distancing ourselves from crowds, queues and human contact of any kind in general.

➢ Application like ours will not only prove users with statistics of the current COVID positive cases in their locality, but also once the users violate their 1-metre distance radius, their phones will ring an alarm which will only end once they reach in a much safer spot.
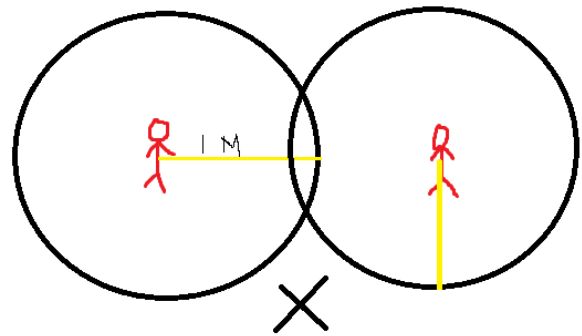
1.3. VIOLATION OF THE 1-METRE VIRTUAL CIRCLE
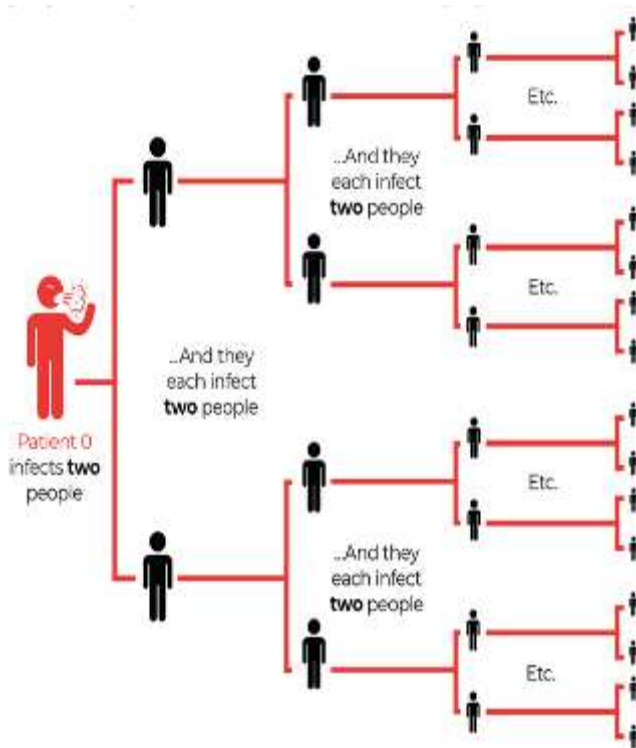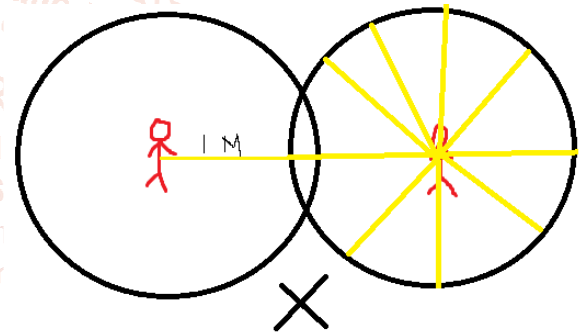
1.3 Community spread
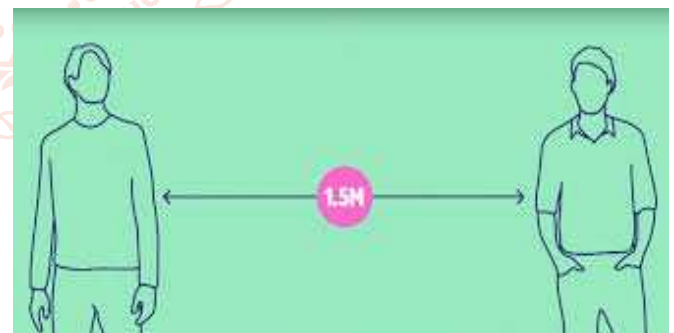
1. ANALYSIS

1.1. Merits of Application

➢ Since the start of the COVID outbreak, a plethora of mobile data collection applications have been developed to help users to report their symptoms and track the disease.

➢ In countries like South Korea these 'apps' have gone even further and provide authorities with the ability to alert users when been in direct contact with a confirmed positive case.

➢ Our Application stands out since it does not require any user information, it only requires both users to have the application on their mobile sets.

➢ The application only requires the geo location comparison since it has the virtual circle parameter set for every individual device.

II. TECHNOLOGICAL GROUNDS USED FOR APPLICATION DEVELOPMENT

➢ The application was developed using the swift language for IOS platform. In order to obtain the geographic location and orientation of a device, we used the framework named CORE LOCATION.

➢ Core Location provides services that determine a device's geographic location, altitude, and orientation, or its position relative to a nearby iBeacon device. The framework gathers data using all available components on the device, including the Wi-Fi, GPS, Bluetooth, magnetometer, barometer, and cellular hardware.

➢ We use instances of the CLLocation Manager class to configure, start, and stop the Core Location services. A location manager object supports the following location-related activities:

➢ To use location services, our app requests authorization and the system prompts the user to grant or deny the request.

➢ On iOS devices, users can change location service settings at any time in the Settings app, affecting individual apps or the device as a whole. Your app receives events, including authorization changes, in your location manager's delegate object, which conforms to the CLLocation Manager Delegate protocol.

III. CONCLUSION

➢ With our application we intend to help the citizens so that they can comply by the precautionary rules essential for the prevention of community spread of the Corona Virus.

➢ The application provides the feature of using users' location and helps them maintain the 1-meter radius by creating a virtual circle around the user.

➢ If under certain circumstances there is a violation of this distance maintaining theory the users' mobile devices will keep ringing an alarming sound until the user procures the safe spot again.

➢ In global crisis as uncontrollable as this the situation gets out of hand and hence until and unless a vaccine is discovered Social distance is the only major preventive method.

IV. REFERENCES

[1]   https://www.bbva.com/en/how-do-covid-19-tracing-apps-work-and-what-kind-of-data-do-they-use/

[2]   https://developer.apple.com/documentation/corelocation/

[3]   https://en.wikipedia.org/wiki/Coronavirus_disease_2019

[4]   https://www.udemy.com/course/ios-13-app-development-bootcamp/?course_id=1778502

[5]   https://www.who.int/docs/defaultsource/coronaviruse/key-messages-and-actions-for-covid-19-prevention-and-control-in-schools-march-2020.pdf?sfvrsn=baf81d52_4

[6]   https://thewire.in/tech/covid-19-mobile-apps-india