

Problem owner name

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Problem title

Tracker Safe: Improving contact tracing and data privacy for COVID-19 through mobile apps in developing countries

What is the problem you want to solve?

At the moment, in developing countries like where I come from (Colombia), contact tracking apps have been implemented to trace possible contacts and carriers of the virus. However, people have been reluctant to adopt them, since these are apps made by government authorities and they feel they collect too much data about people. They fear their data could be used for other purposes.

Why do you want to solve this problem?

Contact tracing is clearly necessary and helpful to control and monitor the pandemic, but it is also easy to understand the reasoning behind people being hesitant to provide detailed private data and location information to governments. I found it particularly curious that people already shared sensitive information with other entities - like FB and Google - and even with suspicious third-party developers (for example Faceapp), but they never felt threatened until now.

Also, one of the advantages of using contact tracing apps, is that mobiles are used widely by the population that is more likely to transmit the disease (20 - 40 year olds) and be asymptomatic. So the tool to trace is available.

What do you envision as the ideal solution for this problem?

I think the problem lies in how the solution was presented and the potential for data misuse. I think people enjoy the feeling of being 'anonymous' online and in control of their data. I envision a contact tracing app that behaves differently, like a game, that both uses gamification techniques or 'rewards' to encourage social distancing and self-care measures, while securely recording contacts and preserving privacy. An app where people can adopt a 'digital persona' created by themselves. And that it will only be contacted when necessary, and only so much personal data as is essential to give is provided.

What sort of Open Source solution do you think can be created in 48 hours, by a small team of developers, designers and data analysts?

A data secure contact tracing app that also behaves like a reward app i.e. MyFitnessPal, data will be decentralized and encrypted, and only accessed when it is needed. The user data will self-destruct every 21 days (timeframe calculated from an infected person to get in contact with the virus and develop symptoms). This will give even more confidence to the user to use the app, because the data is not stored forever, unlike many apps - including Australian COVID Safe app - that say the data will only be destroyed once the pandemic is over. There is no need to keep data that is not necessary.

Are there datasets or people with domain knowledge that you will be bringing to work with?**What/who are they?**

Coming from Columbia I understand the hesitancy that many people have in providing government organisations with detailed personal information, as well as the problems that might arise in rolling out technology solutions in a developing country. I have been researching current solutions and in the next section I outline what I have found about what other countries have been doing in regards contact tracing apps, and the Google-Apple exposure tracing notification.

What are the current solutions for handling this problem?

Contact tracing apps like COVIDSafe app, used here in Australia. In Colombia, there is the Corona App, used across the whole country, and some cities like Bogota have their own apps, like the GABO app. However, centralised government-controlled data collection has limited uptake.

At the moment, there are 2 ways that contact tracing apps around the world manage user information, in a centralised approach (data which is stored by the government) it requires a lot of user information (depending of the country) such as full name, address, age, health conditions, company you work with, etc. In Qatar and Colombia, for example, very few people installed the contact tracing app due to this.

In a decentralised approach, very little data from the user is required and it is not stored in a government database, because it is stored on the phone, and it is only shared if the user agrees to be shared in case he/she is a COVID-19 positive. The only data stored is encrypted datasets, it doesn't store any sensitive information like user name, age, work location, health conditions, etc. The German Corona Warn app is based on this approach, and it is open source. It uses the Exposure Notification framework (by Apple and Google). It traces based on a methodology of collecting user interactions rather than keeping a record of places where the user has been. The only problem with this approach is that it doesn't allow us to create heat maps and find clusters based on the app findings, because we can't know where these interactions have taken place. They will have to be found through manual contact tracing. Identifying clusters is an important step for epidemiologists to do more localised measurements that have a less impact on the economy, so this is a disadvantage of the decentralised approach.

Also, as part of a gamification approach, it is necessary to have a heatmap. The reason behind this, I envision a solution where there is a roadmap of 'back to normality', reached by steps. Those steps can only be reached if the RT is below 1.0, and the closer it reaches 0, the more restrictions are lifted. There is encouragement to people to reach that goal. It can even turn into some sort of local competition (the suburbs on the southside are getting there faster than the north? We better behave better). It would be good to see that in real time through the app. It is not necessary for the app to ask and store user location, that data will come from the manual tracing, but it will complement the data displayed on the interface so it has a value for the user.

Summary for website (up to ~ 1 page)

PROBLEM

Contact tracing is a very useful strategy to control the COVID-19 pandemic. Around the world, there has been a worldwide use of contact tracing apps to achieve this. At the moment, in developing countries, it has been a struggle to encourage people to use contact tracing apps since they do not feel confident with their data being stored by their governments, and they fear their data will not be used properly.

I consider the reason for the failure of the adoption of these apps is the way the solution was presented. These are apps made by governments, who ask upfront for far too much information about the user. I believe the strategy should be changed. People like to feel they are in charge of their digital personas, and to have certain anonymity online that they can control. People already give too much information about their lives to internet giants like Facebook and Google, for example.

I envision a solution where people can create a 'digital identity' of themselves and behave more like on a game or social network, than a contact tracing app. I also envision that this contact tracing app through gamification techniques encourages users to keep social distancing and to follow self-care measures, and where users do not give their data, unless it is absolutely necessary (a confirmed covid-19 case or he/she has been in contact with one).

At HealthHack, I would like to build a minimum viable product that we could make a reality in a not so distant future for use across the developing world. Many majors in developing countries like where I come from (Colombia) would be interested in a solution like this, if it is available.