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Social distancing algorithm

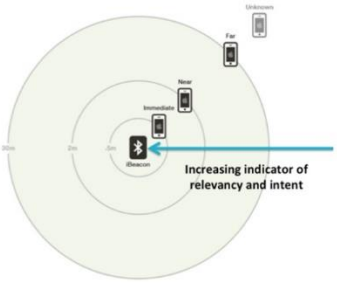
Overview:

Writing algorithm to help perform social distancing in public to limit the spread of COVID-19 with accessible technologies.

Used technologies:

1. GPS
2. Bluetooth Beacon
3. NFC technology

   All these technologies are enhanced by the smart phones. The Bluetooth is battery powered and good for finding the devices in high ranges and the NFC in the emergency for low battery because it is self-powered when another NFC-enabled device appears in its range [1].



Algorithm:

1. Design an App for smart phones (Android & IOS) that make use of NFC, Bluetooth and GPS technologies.
2. Create a server to collect the data from the users when internet is accessible.
3. The app uses the GPS to determine the location of the user.
4. The app should figure the smart phone battery level.
5. If the battery is low, go to the NFC Mode.
6. Else if the battery level is high, go to the Bluetooth Mode.
7. Use these technologies to find the near devices and measure the level of threat.
8. **First case:** If the distance between the devices is larger or equal to 2m, **Safe**.
9. **Second case:** Else if the distance between the devices is less than 2m and larger than 1m, **potential threat. The app should produce sounds to alert the user to keep distance.**
10. **Third case:** Else if the distance between the devices is less than 1m, **threat. The app should produce sounds and vibration to alert the user to keep distance.**
11. If the battery level was low only the third case will be applied.
12. When the device has internet connection, the data (the location and the alerts) should be sent to the server.
13. If the organization (MOH in this case) recognized some locations that does not apply the social distancing instructions, it can take an action to limit the virus.

References:

[1] https://blog.beaconstac.com/2015/07/ibeacon-vs-nfc-vs-gps-which-indoor-location-technology-will-your-business-benefit-from/