School of Computing
CA326 Year 3 Project Proposal Form

SECTION A

Project Title: Social Distancing App

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Staff Member Consulted: Dr. Michael Scriney

Project Description:

Since COVID-19 has spread across the world, the entertainment industry has ground to a halt. Many venues comprise mainly of standing sections where it is virtually impossible to ensure social distancing guidelines are being adhered to. Because of this many governments across the world have forced venues to close their doors for the foreseeable future, leaving many artists without a viable source of income.

Our solution to this problem is an app which uses Bluetooth and GPS in tandem to measure the distance between concert attendees and ensures that a minimum distance of 2 meters is maintained. Before going to the event each ticket holder must download the app. They will then have an option to register devices belonging to people within their “social bubble”. They may then attend the concert. The app will continuously send out Bluetooth pings to other devices and measure the round-trip time and GPS co-ordinates to calculate the distance between the user’s device and others. When the round-trip time is below a certain threshold, indicating that social distancing is not being adhered to, the app will send a notification to the device informing them of this and recommend they move at least 2 meters from other attendees. There will also be a tracking aspect where contacts are recorded, and analytics can be performed upon this data.

The app itself will have a clean interface which is easy to use. As mentioned above there will be an option to pair with other devices belonging to people within the user’s “social bubble”. The user will turn the app on as soon as they arrive in the venue and it will run in the background allowing the user to take photos or videos on their device all the while.

Division of Work:

Both members will divide the work equally across the span of the project. We will both be equally involved in requirements specification, design, development, testing and deployment.

Programming Language(s):

- Kotlin/Java
- HTML/CSS
- Python/Django

Programming Tool(s)

- Android Studio
- Git
- PyUnit
- Docker
- Android Virtual Device
- VS Code

Learning Challenges

- Full Stack Development
- Mobile Development
- Determining close contacts
- Graph Databases
- Graph Analytics

Hardware/Software Platform

- Laptop
- Android Mobile Phone(s)