TeleTag

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Project Idea

- We are creating a game where we play tag using our phones. We will create the tag app using Android Studio and Kotlin. Through the app players will be able to connect to each other's phones via Bluetooth. Once the tagger gets within the range of the other player, the tag button will light up so they player can click on it. Once the players are out of range the button will not be pressable. Our app also has a database that stores the information of the players such as the number of times they were tagged or the number of times they tagged someone else.

Competitive Analysis

- **We have four reasons on why our project is unique:**

    1. Our code is open source meaning that anybody can change, use, study, and distribute our code.
    2. Our app will be free for anybody to download and play. With plenty of games being costly and closed source, having a free and open source game makes us competitive in a vast market.
    3. Our game has a leaderboard so players can know at all times where they stand among other players.
    4. One key difference between the current game and the game we are developing is the ability to store who has gotten tagged, when, and how many times someone has tagged someone else or been tagged themselves. Utilizing database software can allow the game to be more heavily focused on playing the game itself.

Technical Approach

1. **System Architecture - MVC**

    - For this app, since it contains a GUI, it seems preferable to choose MVC as our architecture, as it will help to streamline the organization of the different parts of our application. Our application will involve background processing of Bluetooth data, which will be contained within the Model class of our application. The View will contain the blueprint for our interface, and the Controller will contain the information about the times each player has been tagged and tagged someone else.

2. **Technologies**

    - One defining feature of this application is its use of Bluetooth. When Bluetooth is enabled on a device, it is constantly scanning for devices to pair to, and with at least one other device unpaired to any devices, the distance between the 2 devices searching for a compatible device can be calculated.

3. **Tools**

    - Our IDE of choice for this application is Android Studio, as this is initially being built as an Android application written in Kotlin. A port may be possible to iOS devices, but initial testing will be completed using Android Studio smartphone emulators, and android phones.
    - We will be using SQLite as the database management system to keep track of the tagger, and the IDs of the phones that are in the game
    - A GitHub repository will be maintained throughout the development of this application, and testing will be conducted using Github's native testing software.

Serious Challenge

- Our biggest challenge for this project is fully understanding Kotlin and utilizing all of its features to build a good, efficient, and fully functional app.