Pitch Document for House Arrest

Problem:

The problem being addressed is of managing lifestyle behaviors and access to content that someone wants to avoid but on a more contextual basis. The primary features (access being based on GPS and/or network connection) can create and enforce rules based on location, rather than a global restriction. This could be used to enforce or remove habits, an example being a student wanting to reduce distractions from social media sites, and so the app could be used to remove access when at the library to help with studying. Network connections serves as another outlet to location services, as it also would indicate proximity or contexts that the rules would be made for.

Target Audience:

The main target audience is anyone wanting to have tools at their disposal to manage habits that involve the usage of other apps or internet services. Unlike a traditional global restriction, this app would help by providing more options and offering ways to still be able to use those services but only in the right contexts. An additional target audience may be those suffering more serious addictions related to device behaviors. Parents may also find the app useful as a way to manage permissions, but without completely restricting access.

Device/System Requirements:

House Arrest will take the form of an app for mobile smartphone devices. Our team will use a development kit for mobile devices, considering options such as Flutter, to help in creating the application. Also due to the team's access to only Android devices, the app will be targeted to those users (omitting the iOS platform). However, will consider options that are cross-platform where possible but not guaranteed. Due to the scope of the project, it is proposed to develop the project with identified goals with progress towards expanding the range of capabilities. The following is an initial order planned for developing/adding of available features:

1. Creating a working app that can be used to create self-imposed “rules” that can restrict network and app access.
2. Using time, GPS, and network conditions (such as which WiFi network they are connected to) as options in creating rules, to make it possible for contextual restrictions.
3. Create options to allow other users to have roles with the main user, such as authorizing access and adding/editing rules. This addition will require the setup of a web service to connect users.

For the rules to work at all, the critical system requirement is the ability to control network traffic and apps running on the device. With these abilities, the rules could actually be enforced. For the ability to have the rules take location into account, additional necessary requirements is being able to access current physical location, current network info, and current time. For better UI in rule creation, it may also be required to have access to a location api to make inputting locations easier using names (for example, may use the api to translate “Whitworth University” to a set of GPS coordinates).

For end resulting functionality, the app will require full-time access to the mobile device's GPS; camera access; awareness of the device's time data and the device's time zone; storage of metadata which includes keystrokes, app and web usage details, data usage, network details; awareness of the words within incoming messages via both sms and online chats/forums/posts; permission to disable privacy apps which would obstruct House Arrest's functionality; and on-screen text monitoring. Over time, in theory, the app could partner with other applications, like Facebook, in order to assure effective functionality. The app would allow users to make accounts. The app would need server access to store the information it collects. House Arrest would need algorithims which would recognize various forms of concerning activity and implement measures of security, such as notifying a parent or buddy with a linked account.