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CS4720 Web & Mobile Systems:
Final Build (RPi's)

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- **Team Member List:**
  - Taimoor Chatha – tuc4uw
  - William Andrade – wla3ww

- **Pokemon name:** Togepi
- **Project/App Title:** Hot or Cold

Project Pitch

Our android application is a two-person game that utilizes Google Maps/GPS to track one player's current location, while the other player sets a destination location. Once one player sets a destination, it's the other player's objective to figure out where the destination was set by walking around with the Pi (with lights attached), and determining correct movements based on the lights changing color. Thus, the application allows users to set a destination, and keep track of a person's current location. The closer the first player is to the set destination, the closer the color scheme will change towards red (yellow→orange→red). The further the first player is to the set destination, the closer the color scheme will change towards dark blue (light blue→blue→dark blue).

List of Key Features

- Google Maps/GPS
- Facebook integration for sharing location/status update
- Integration with Raspberry Pi

Basic Instructions on Usage

- 1) One player clicks **Set**, which will allow them to set a location that the other player is supposed to find
- 2) Hand the other player the tablet
- 3) Then, click **Play**, which will start the game, and start tracking players location
  - Lights will change color relative to players current location and destination that was set

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How We Use The Lights & Sensors

- We utilize the lights by making them indicators of how close or far the player is from the set destination. The closer the player is, the closer the light color scheme goes to red until they reach the destination (in which case the lights turn fully red). Alternatively, the further the player is, and goes from the set destination, the closer the light color scheme goes toward dark blue. The color green is set to neutral, and just indicates that a location has been set, and that the other player can start to maneuver towards the set destination
- The specific sensor our application uses is GPS to track the current players location and to set a destination location

What Our Third Party Web Service Is and How We Use It

- For our application, we decided to incorporate Facebook. With this addition, the user will be able to login to his/her account, authenticating themselves as proper users, and post their current location if they wanted to.

Lessons Learned

From the beginning of the project, my partner and I ran into some minor problems early on. For MS2, we specifically had trouble with accepting POST commands from JSON requests. After following numerous tutorials, we found one that worked with what we were trying to do. Additionally, buy looking at some of the Halloween Tester code, we were able to configure our code to make it work properly. For MS5 my partner and I ran into some problems when trying to incorporate our third party web service. Specifically, our third party web service was Facebook, and although they had really good documentation online, there was still some confusion on implementing specific methods from an interface. When trying to include Facebook's login functionality, their documentation lead us to use fragments as the main source to transfer the user between our app and their login. This became a problem when we did more research, and were lead to believe we needed to use a OnFragmentInteractionListener interface. There was a method we didn't know how to implement which would provide this core functionality we wanted, and we couldn't find anything online to help us (including their online documentation). To fix this issue, we just

made other activities so that all the UI elements that implemented change happened in other activities. We basically just circumvented everything, and avoided using that interface. In the future, although we think following the documentation helped to an extent, if we run into a problem that we don't see them mentioning as a possible obstacle, we think that we'll spend more time trying to find other ways on how to implement the same web service (whatever it may be), but in a different way. We wasted a lot of time because we assumed Facebook's documentation would lead to a solution, but this wasn't the case.

Link to final APK

http://plato.cs.virginia.edu/~tuc4uw/rpi/final/app-release.apk