Preliminary Project Design

Over the years, social media has redefined how we interact across the web, and in person. As, a general tool they serve their purpose in providing a convenient media for a broad spectrum of interaction. That being said, we feel that particular features that facilitate group interaction, in real life, are lacking. Specifically we are looking to provide a flexible mobile solution that allows individuals within a group to check-in and interact with group leaders based on proximity. While, current solutions allow for location based check-in, they tend to be bound to a specific event or location, as opposed to proximity of a primary moderator or re-definable location. This enables our solution to better adapt to the active lifestyles of our users.

The idea for our solution grew out of the desire to streamline group interaction in the classroom and during sports events. We felt that the archaic method of passing a piece of paper around and having group members physically sign in, was overly time consuming and yielded generally unreliable results, as there exists no automated identity-check. Consequently, there is nothing stopping group members for signing in under another group member’s name. Furthermore, we wish to improve the KU basketball camping experience by implementing a one-click instant check-in process that can be initiated at any time by a group moderator. The issue with camping is that anyone can ask to call roll at any time. If a group isn’t present at roll call, then they will lose their current spot in line. At the moment, camping staff need to call each group one at a time, and physically check if they are present. Our app would allow all groups to instantly check-in based on their location, thus ensuring a group member’s identity and location, and overall improve the overall camping experience.

While stemming from those two specific use-cases, we feel that the versatility our app brings to the market allows for a multitude of real life applications. Because users are no longer confined to check their location relative to a static location, it becomes easier for on-the-go groups to check-in. From group exercise sessions to school field trips, group leaders, moderators, and chaperones can now easily message, and ping, the location of members in their group. This ensures that all group members are on the same page, and provides moderators with peace-of-mind.

*Implementation of Features:*

*Location Check-in:*

Conveniently Google Play Services provides a free Google Maps API for displaying locations with overlays on a map, and FusedLocationAPI for acquiring users’ current location. Something to note is requirement surrounding permissions on android devices. As of Android 6.0 permissions are required to be run at runtime, meaning that anytime we want to use a service that requires permissions (ie. location services), we must check that permissions are granted, and if they aren’t granted then prompt the user for access. In terms of check-in, when the moderator begins a check-in, their location will be acquired using FusedLocationAPI and sent to the server. A notification will then be sent, <using a standard notification process that I am unaware how to do at the moment>, to members of the group prompting them to check-in. Once they acknowledge the request, given that they have already provided location permissions, the app will check the proximity of the user to the moderator’s location, or defined location, and consider them checked-in if they are presently within a moderator-specified distance of the aforementioned moderator or defined location.

*Group Locate:*

For situations in which a group may be spread-out within a given area, we will provide moderators the ability to check member locations on a map. This would be ideal for a vacation to an amusement park or field trip to a museum where chaperones may not always have line-of-sight contact with group members. Put simply, they would always have peace of mind with our one-touch Group Locate feature. Specifically, mapping and overlays are done within the Google Maps API.

We acknowledge that allowing moderators to display member location within an area is potentially a security risk. As such we will provide users with flexible settings options to allow them only to be located during specific time, set by each individual user.

*Group Creation and Management:*

As a whole the core of our app comes down to the interactions between moderators and members of a group. As such we would like to provide a simple registration and login system, allowing users to login specifically to our app using an email, <or though popular social media sites (Facebook, Twitter, Google Plus) … cause why not>. All three social media sites provide API’s for identity validation, and login procedures. A nice consequence of using these services is the fact that, to the best extent possible, we can check the identity of our users. While not foolproof, we are able to cut down on false check-ins.

Most of the work for group creation and management will likely need to be created from the ground up. For starters, we will allow moderators to send group invitations to users, <either through the app itself, or through email, since an email will be used in the login process regardless of method>. Our application will provide moderators with a one-way chat function, allowing them to send important messages to the group. Additionally, while moderators are the only individuals who are able to begin a check-in we will allow user to alert the moderators that they would like to begin a check-in. This specifically addresses the basketball camping issue, since it allow camping groups to easily request role call at any time, and it allows the moderator to initiate an automated role call quickly in response.

*Storage:*

We will store all of our information on a MySQL database which is run off our EECS account.