Meeting 9/18, 12-2pm

Justin, Jordan (via phone), and Nick

* Justin is CFO. (offered to do “paperwork” stuff, b/c Jordan and Nick are motivated with Software dev)
* Decided to buy Estimote mid-size. Justin should work on doing that soon as possible.
* Discussed applying for Sternheimer award. Decided we might talk to Dr. Bulut about this, and discuss with each other again next week.
* Decided that meeting with Dr. Bulut tomorrow should focus on requirements specification.
  + We would like to try discussing using Xamarin for ios + android + web dev with Dr. Bulut
  + We consider a web interface to be a secondary goal. Until then, "they can use their friend's phone" if needed.
  + Many questions on necessity, as well as security implications, of admin view. Will ask Dr. Bulut.
  + Discuss idea of fixed, university-placed receivers.
    - If equal to any other phone, then should be easy to implement.
    - But, we may want to give special permissions to these receivers. And, maybe they are more aware of their location (ex. What floor they're on). A lot to decide here. Will talk to Dr. Bulut.
  + Other ideas: Should our app work with \*any\* tag?
* Jordan and Nick said they would finish reading security paper before meeting tomorrow.
  + Justin's questions & comments after reading:  
    Cryptography implementation seems very important for us to use.  
    But is centralized server that bad? Will ask Dr. Bulut. Don't understand why encrypted centralized info is bad.  
    How do we handle malicious observers submitting false locations?  
    How do we handle if observers go offline? Does system just lose access to that location forever? Or should we store last "x" records, etc…  
    Since we need to alter the deviceName attribute, does that mean definitely can't use with Tiles, etc.. Only can use with tags that are dedicated to our network…

Meeting 9/19

Justin, Jordan, Nick, Dr. Bulut

* Decided to pursue iOS and Android development in parallel.  
  No need for web interface.
* How the admin/police view will work: An officer can look at his phone and will be shown where on campus has not recently been scanned. Then, he can patrol that area and allow his device to observe any lost items.  
  Officers do not need to be told that a lost item is in their vicinity.
* We should pursue including static/fixed receivers, and those receivers should have extra information (such as the floor in the building).
* Discussed various considerations including how to handle imprecise GPS indoors, possibly storing last n observations (not just last 1),...
* We will plan on talking with VCU PD later in the semester once we have a prototype. Then we can discuss any additional features.  
  Jordan and Justin agreed this means we should prioritize GUI in our timeline.
* Roles loosely assigned: Jordan with iOS, Nick with Android, Justin with backend (firebase)
* Discussed whether to apply for Sternheimer.
* Things to do now:
  + Order Estimotes - Justin. Due asap.
  + Write up a requirements specification and share with Dr. Bulut -Justin will begin in Google Doc. Will be finalized by Monday meeting at latest.
  + Develop a timeline for the semester - will do on Monday meeting.
  + Set up IDEs, GitHubs, etc. that is necessary to begin coding next week - Justin, Jordan, and Nick. Due Monday.
  + Additional item: Storyboards. Come to Monday meeting with storyboards of GUI ready. Will compare designs and select best. -Justin, Jordan, Nick. Due Monday.
  + Also: Progress report is due Friday. -Justin

Meeting 9/25

Justin, Jordan, Nick

* Update from last Thursday: Changed Estimote order to stickers, instead of proximity beacons. Checked with everyone after Thursday’s class, submitted order on Friday.
* Checked with Dr. Dahlberg: It is OKAY to submit status reports every Monday, after our weekly meeting.
* Concern about implementation: Use case where user signs into 2 devices presents problems
  + 1. Can we pair two phones to one tag?
  + 2. How do we transfer private keys to the new device if user’s primary device is itself lost & offline? Can we store that centrally?
  + Need to talk to Dr. Bulut about security requirements and end-to-end encryption models.
* The group approved the draft requirements that Justin drafted, adding a few “extra” features to be added if time permits.
* We set up a GitHub and made some initial user stories based on requirements specification.

Thing to do now:

* Justin: Work on user stories and design, and learn about firebase for backend.
* Jordan: Set up and get familiar with iOS design
* Nick: Begin playing with Android, maybe making some early GUI.
* Wait on Estimotes to arrive

Meeting 9/26

Justin, Jordan, Nick, Dr. Bulut

* Dr. Bulut says Estimotes should arrive within next couple days.
* Dr. Bulut approved our requirements specification without changes. (except implicitly, described below).
* Showed Dr. Bulut some *rough* sketches of GUI.
* Mentioned security implementation concerns. Dr. Bulut said that the encryption is lower priority, and to deal with that later.  
  I.e. Encryption will be implemented near-last. And, use-case of transferring keys from one device to another will be handled later, if necessary.