SCAV: Scav Communication Application for Victory

Placeholder Studios
Rina Shkrabova, eshkrab@gmail.com
Anton Melnikov, anton@uchicago.edu
Our Aim

- We decided to build an app that helps UChicago students who participate in the annual Scavenger Hunt.

- The app is meant to ease the pains of Scav by providing a standardised vehicle for communication that makes the most of mobility of smartphones and tablets.
Basic Architecture

- Scav app requires client-server communication

- On a basic level, data is split into Items, Teams, and Users:
  - each User belonging to no more than one Team and having a user name (Cnet ID), password and email;
  - each Team having a captain, members, and a name;
  - each Item consists of list number, description, points, and a completion status
Technologies

- Using Google App Engine, Datastore, Cloud Messaging, Cloud Endpoints
- Google’s services were meant to provide backend for the server, an API for both iOS and Android devices to implement, along with other services that should ease the developers’ tasks.
- Google’s Datastore service stores data as Entities, as opposed to a traditional datatable, which seemed like a natural approach
Problems

- In practice, Google Cloud Endpoints only became widely available on February 14th of this year and the services is in its experimental stages, so there is little documentation apart from Google’s own basic IO presentation – CloudNotes

- Because Datastore does not allow direct posting to the database, API Explorer must be used to test API methods
Solutions

- After deciphering and reverse-engineering Endpoints and Datastore usage, we could only implement the Item entity storage and API methods because of the problems of ownership between Teams and Users.

- We had to quickly build our own light-weight server, using a RaspberryPi and a simple JSON database and Pythonflask library and a RESTful API for the server.

- Establishing the server-client communication, along with Eclipse fixes took most of the time allotted for the project, and we were able to recreate only a very basic interface.