The Yale Projects Board

Motivation

As Yale tech community continues to grow and become more robust, more and more projects—either those started independently by students or in connection to an academic department—are being created. Often, those project leaders are faced with the challenging problem of finding talented programmers, designers, and engineers to join their teams, and are unsure where to search.

The Projects Board

I propose solving this coordination with an online projects board that allows those looking for programmers, designers, and engineers (“leaders”) to post their ideas online and recruit talent, and give those looking for projects (“members”) a central location to start their search. The goal is to be professional enough that people take themselves and others seriously on the site, but not so seriously that people short on experience are intimidated. This would also present an exciting opportunity to aggregate data about what kinds of projects are being created at Yale, as well as what skills are most desired.

The Yale Projects Board will be a website that helps the Yale community match talented students with amazing projects. As a start, the project will be targeted specifically for student-initiated projects within the tech community, but will expand to include projects of any kind, as long as they maintain a connection to Yale. It will be built
using the MEAN web framework (Mongo DB, Express.js, Angular.js, and Node.js) and will have the following features:

All users

*Anyone in the Yale community*

- Login with CAS/NetID
- Create profiles about themselves, including affiliation with Yale, personal info, occupation, interests, URL, etc.
- Search through projects with open positions
  - A newsfeed of recommended projects
  - A robust search feature that allows filtering by skills, pay, time frame, type of project, etc. (more below)

Project leaders

*Those who are looking for people to join their projects*

- Create a project and define a set of open positions
  - Each opening will have a description, time frame, payment amount (if it’s a paid position), as well as “skills you need” and “skills you learn”
    - Such an educational component might help attract users
  - To prevent stale openings, all openings will expire after a default of two weeks, though leaders may always reopen an expired opening.
- Contact other students through the site
  - Students searching for projects can specify whether they are actively looking for projects to join
- Search through actively searching potential members

Site administrators:

*Those maintaining the site, or otherwise named an administrator*

- Approve projects before they appear on the marketplace
  - Quality-control for projects
- Edit/delete any projects that violate terms of use
- Answer bug reports, questions, etc.

Building such a site will require extensive programming building a REST API on the
back-end. The site would have to maintain user sessions with CAS login, and create permissions per user action (only project leaders can edit projects, for example). In addition, it is necessary to program an entire admin interface that only administrators could view, with extended functionality. I expect to use the NPM modules Mongoose, Grand Master CAS, Mocha (for testing), among many others.

Although I will be working with fellow senior Computer Science major Bobby Dresser on this system, we will have separate roles in the project and an entirely disparate set of deliverables.

**Deliverables**

1. The main deliverable will be such a site with the described API and functionality, passing tests, and documentation for easy maintainability.

2. Obtaining information about Yale students from the Yale directory is a challenging one for student developers: they have to manually scrape the HTML off the Yale directory page. I plan to create an NPM module that, given valid Yale CAS authentication, allows coders to easily obtain programmatically the information about students that they already have access to via the web.
   a. Stretch goal: a Rubygem with the same functionality.

3. Collect and present data on what kinds of skills are most “coveted” on campus, what kinds of projects are proposed, and use that data to draw conclusions about Yale’s technical landscape.