March 11, 2011

From: Nicholas Poorman

To: Dr. Alex Pantaleev

Subject: Status Report - Advanced Studies in Web Development

Alex,

This week I began by installing Ruby 1.9.2 and Rails 3.0.0. To do this I used a new Ubuntu 10.10 installation and followed the tutorial here: http://toranbillups.com/blog/archive/2010/09/01/How-to-install-Rails-3.0-and-Ruby-1.9.2-on-Ubuntu. Ubuntu out of the box needed lots of dependencies. To install Ruby 1.9.2 I installed RVM which is Ruby Version Manager and then used rvm to install Ruby.

The tutorial goes through setting up Git and a GitHub account. I've looked into GitHub in the past and it seems enough to keep the files on my local computer in Git. Next the tutorial recommends using a service called Heroku (uses Git to easily deploy the server) at https://heroku.com/. After more inspection, I found the service to be free until more resources are needed to host a site. Again my local computer is fine for now.

For testing I have decided to go with RSpec for Rails which seems to be the industry standard at this time. Along with RSpec I installed the gem (a gem is a library for Ruby) Autotest. Autotest will automatically run the test suite in the background based on specific file changes made to the Rails application. There is a nice tutorial on configuring Autotest notifications for Ubuntu here: http://fredschoeneman.posterous.com/pimp-your-autotest-notification.

In the process of doing my research I found and excellent online application called Mockingbird for doing site wireframe mockups at https://gomockingbird.com/.

I decided to add the 'annotate-models' gem to the project because it will automatically add comments about the data model to the model files. Security note: when creating new models make sure to set the 'attr_accessible' method to prevent a mass assignment vulnerability (don't allow users to set things that shouldn't be set).

One interesting thing I found was the concept of an index on a table column. Since I have never taken a database class, in the past I would have done a full table scan to look up something like an email address. Now by using a database index, the writes may be a bit slower but the lookup times will increase greatly. This also seems to take care of a concurrency issue. With the requirement that the indices be unique, if for example a user clicks submit twice the critical section won't allow for duplicate rows to be created using that email address. Since the index must be unique the underlying structure will never have duplicate email addresses.

Side note: I came across a great article for scaling Rails applications: http://axonflux.com/building-and-scaling-a-startup and another one here http://railslab.newrelic.com/scaling-rails. But those are for later.

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I will be implementing the users and comment system in the MVC next week.

Sincerely,

Nicholas Poorman