

# COMP 412: Open Source Programming Project Proposal

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## 1 Abstract

One potentially excellent resource for discovering new and exciting open source projects created using Ruby on Rails is a website called [Opensourcerails.com](http://Opensourcerails.com). While the site is fully functional as is, it could be greatly improved upon in several ways. It currently lacks unit and integration tests, which naturally discourages other developers to contribute to the project for fear that their additions may break existing code. It also is built using Rails version 2, while the latest version, Rails 3, has been around for more than one year now and has made considerable advances. [Opensourcerails.com](http://Opensourcerails.com) also does not implement certain filter functionalities which makes it easy for a user to quickly discover projects interesting to him or her. Lastly, the visual design could be upgraded to make the website seem more current and professional, thereby encouraging more users to utilize it. Our proposal is to make the above stated changes.

## 2 Executive Summary

### 2.1 Intellectual Merit

Since the popularization of the Internet, the web has become a primary resource in the sharing of free and open source software. To get more developers to work on certain open source projects, there have been various attempts at creating useful websites that showcase many different open source projects available for further development and use. There have been fewer websites that target specific development languages or platforms. There seems to be only one website devoted to showcasing open source projects developed using the Ruby on Rails web framework. This site has been implemented and hosted by a Rails developer named Jacques Crocker, and can be found at [Opensourcerails.com](http://Opensourcerails.com). This web application collects many Ruby on Rails projects and lets the user search or browse them to either use them or further develop them. There seems to have been no serious attempt, however, at upgrading this site in recent years, and traffic to this site seems to have diminished. This is unfortunate, since

Opensourcerails.com may be the only website that showcases Rails projects in this way.

## **2.2 Broader Impact**

The effect we are trying to leave on society is to have a functional way to share Ruby on Rails applications that will allow users to quickly find and understand an application to use or develop further. This is an application of Loyola's mission in that it is helping individuals put forth their knowledge to service the community but also allow individuals to further their knowledge by expanding the projects that have already been developed.

## **2.3 Transformative Potential**

This project may have a significant impact on society, because it is an excellent way to further the Open Source Movement. By making this website more palatable from a development perspective, even more developers may use this application to find relevant projects that need further development. It also is an excellent resource for non-developers to simply find great software that is free to use. Exposing the Ruby on Rails framework and applications to a wider audience will increase the utility of this framework for developers everywhere.

## **3 Problem Statement and Related Work**

The existing website, Opensourcerails.com, is a great resource, but is languishing and not being widely used or improved upon. As a gallery of free and open source software built using the Ruby on Rails framework, this site should be the best place to find exciting, new open source applications and uses of Rails. However, as evidenced by the change logs and a brief review of the site, this FOSS project has not been contributed to in more than two years. The upgrade to the most current version of the Rails framework has not yet been attempted. In addition, there are no unit tests for developers who might be inclined to contribute to this project. In fact, there have been comments posted to the website asking when the site will be upgraded to the latest version of Rails so people could be more involved.

## **4 Motivation**

Opensourcerails.org would be a more interesting and capable service if it had some added functionality besides simply listing FOSS Rails projects. The ability to sort and filter (e.g. by name, date or topic of the Rails projects) would make the site much more useful for those trying to find particular functionality in an existing project. Tests are a critical way for developers who contribute to a FOSS project to know if they are producing something that works with existing code, or if their manipulations or edits have broken something. By not

having a test suite available, developers may be discouraged from contributing to [opensourcerails.org](https://opensourcerails.org). Research shows that one of the key obstacles for developers in contributing to open source software is the lack of adequate documentation (Shibuya & Tamai, 2009). Good integration tests can serve as an important form of documentation, as they spell out specifically what the application code must accomplish. By creating a suite of unit tests for the website, we hope to make the project more attractive to other Rails developers as well. While the differences between the most recent version of Rails, Rails 2, and the current version, Rails 3, are not drastic, a website that showcases well done Rails web applications should itself be at the forefront of the technology it professes to support. Also, developers will be more inclined to build upon a site that utilizes the latest technology, especially as Rails 3 is considerably easier to use. We will perform the necessary upgrades from Rails 2 to Rails 3 for the entire site.

## 5 Milestones and Deliverables

As stated above, the milestones we are trying to reach for this project are:

- 1) Upgrade from Rails 2 to Rails 3: Jay will be primary on this task.
- 2) Create test suite with unit tests: David will be primary on this task.
- 3) Add more advanced sort/filter features: All will work on this task.
- 4) Upgrade website design layout: Chris will be primary on this task.

## 6 Timeline, Technical Approach, and Project Management

One major obstacle we will face is the time available to develop this project. We have about two weeks to rebuild the application and revitalize its design. Week one will include the creation of the website's structure via semantic HTML for all the pages plus the identifying of all the website's current functionality that we must replicate. Week two will involve the writing of the integration tests, as we will write the tests prior to the actual development, in accordance with the Agile practice of Test Driven Development. While TDD may increase the time needed to complete a project, research shows that it significantly improves the quality of the software (Bhat & Nagappan, 2006). Week three will aim to cause all the integration tests to pass by building the actual application using the Ruby on Rails framework. This will include several functionalities that are not yet existent in the currently operating website. The new design can be created in parallel during week two, and will be complete by the end of the project. The aesthetics of web design becomes important for a users return/accessibility (Mbipom, 2009). The single advantage to the tight deadline is that we can use the 30 day trial of Basecamp as our project management system.

## 7 Evaluation of Outcome

As our project includes the creation of a comprehensive test suite for every aspect of the website's functionality, the primary means of evaluating the project's success is to have all the tests pass. In addition, we will seek review from our peers to determine if the website is indeed easy to use and a project that they may be inclined to help contribute towards.

## 8 Dissemination Plan

We are developing our application off a fork from an existing project and will submit a "Pull" request to the original author to incorporate our changes for distribution via GitHub. The target audience we are focusing on are the whole web community interested in Free and Open Source Ruby on Rails application. We hope to make the experience about learning or developing applications easier than the current web application.

## 9 Citations

Thirumalesh Bhat and Nachiappan Nagappan. 2006. Evaluating the efficacy of test-driven development: industrial case studies. In Proceedings of the 2006 ACM/IEEE international symposium on Empirical software engineering (ISESE '06). ACM, New York, NY, USA, 356-363.

Michael Hartl. 2010. Ruby on Rails 3 Tutorial: Learn Rails by Example (1st ed.). Addison-Wesley Professional.

Bianca Shibuya and Tetsuo Tamai. 2009. Understanding the process of participating in open source communities. In Proceedings of the 2009 ICSE Workshop on Emerging Trends in Free/Libre/Open Source Software Research and Development (FLOSS '09). IEEE Computer Society, Washington, DC, USA, 1-6.

Grace Mbipom. 2009. Good visual aesthetics equals good web accessibility. SIGACCESS Access. Comput. 93 (January 2009), 75-83.