Open Source Software Development

Instructor: Professor Shreae L. Daniel
244 Mervis Hall
(412) 624-0316 (voice)
sdaniel@andrew.cmu.edu

Course Description

Over the past decade the phenomena of Open Source Software has moved from a technical curiosity to the mainstream of business practice. With the emergence of production quality systems such as Linux, MySQL, and Apache, Open Source technologies are now a viable option for firms developing their IT infrastructure. However, the distinctive nature of Open Source communities, firms, and technologies gives rise to many issues different from those encountered when acquiring systems from traditional vendors.

In this course, we will examine issues associated with Open Source technologies. Through a combination of readings, discussion, presentations, and hand-on projects we will examine (i) characteristics of key Open Source technologies (including, but not limited to, Linux, MySQL, and Apache), (ii) the nature of Open Source communities and development processes, and (iii) the evolving structure of the Open Source industry. In each case, the focus will be on understanding the implications for businesses interested in making use of Open Source technologies.

Course Materials

The required texts are:


Both of these books are available from various online stores (Amazon, Barnes & Noble, etc.).

Online materials, including the course administrative documents, assignment descriptions, and some supplemental reading, will be accessible on CourseWeb (http://www.cmu.edu/blackboard/index.shtml). To login to CourseWeb use your Andrew id and password.

Case studies that will be used in class can be accessed through http://harvardbusinessonline.hbsp.harvard.edu/relay.jhtml?name=cp&c=c50091.
We will also use online resources such as (but not limited to):

• Open Source Initiative: http://www.opensource.org (Open Source license archive)
• Sourceforge.net: http://sourceforge.net/ (Collection of Open Source projects)
• Newsforge: http://www.newsforge.com/ (Open Source industry news)
• Information Week: http://www.informationweek.com/ (General IT industry news)

Computer Use

During this course you will be asked to complete assignments that involve exploring a variety of web sites, downloading both source code and executables, and experimenting with Open Source software packages. As we will learn in the class, these systems vary in quality and stability. While the majority of tools we will be looking at are stable and well vetted, it is never possible to predict with certainty how a system’s behavior will change after new software is added.

Neither Carnegie Mellon University, nor the instructor of this course is responsible for the reliability of your computer. It remains your responsibility to choose whether it is possible to complete the assignments on a particular computer or whether it is necessary to make other arrangements.

As always, it is recommended that you take appropriate precautions to ensure the reliability of your computer. This includes, but is not limited to, (a) ensuring that you virus protection software is installed and up-to-date, (b) creating a recent backup, and (c) keeping a change log that records what software packages you have installed and how they can be removed.

Classroom Computer Use

You are welcome to use notebook computers to take notes as long as it does not hinder your ability to actively participate in the class discussion. There may be times, such as when we are examining software, communities, or firms, where having a computer in class is helpful for following the material. However, when computers are not needed – for example, during a guest speaker’s presentation – you are expected to close your machines.

Homework Assignments

The readings and discussions in this course will expose you to an overview of Open Source technologies, development methods, communities, and firms. However, technologies rarely look the same in use as they do in documentation. Development methods present a clean picture of an activity that is usually much “messier”. Firms often find that general issues associated with implementing IT can become much simpler (or more complex) when decisions have to be made.

The homework assignments are designed to provide you with exposure to what the technologies, development methods, and firms “look like” in real life. In addition to gaining personal experience (either through experimentation or observation) with a particular aspect of Open Source, the assignments give you an opportunity to evaluate the general frameworks presented in the course reading relative to the reality you encounter.
Each assignment will be graded on a 8 point scale. A grade of 8 indicates outstanding work (selection of an interesting example with a clear description provided, solid answers to each of the questions, thoughtful consideration of issues and questions raised by juxtaposition of the homework case and the course readings), 4 indicates adequate performance (an appropriate example, adequate answers to the questions, reference to the course readings) and 1 indicates poor work (inappropriate example, little or no description, minimal answers to the given questions, no reference to the course readings or discussion).

The instructions for each assignment will be distributed through CourseWeb. Each assignment is to be turned in both electronically (by e-mailing a copy to the instructor) prior to class and on paper at class time. The electronic copy may be added to the course materials in CourseWeb for reference by your colleagues.

**Participation**

This class will be conducted as a seminar, which means that everyone is expected to read all material prior to class and to actively participate in the classroom discussions.

You participation grade will be based on three components: quizzes, preparation for cases and contribution to the discussion. The quizzes will be short (less than 10 items) exercises designed to motivate and assess your engagement with the concepts, terms, and methods we will be discussing each week. In lieu of an exam, the bulk of your participation grade (26 points) will be based on the quizzes. The quizzes will be given at the start of class and there will be no opportunity to make up for missed quizzes.

Your case study preparedness will be assessed based on questions and comments that you will submit by email to the professor at least 12 hours before the start of class. There will be 6 cases and submitting the email with quality questions and comments will be worth 4 points. The point of this exercise is to ensure students have read the cases and are prepared with questions and comments for the discussion in class. Each email should include 3-5 questions or comments that can be discussed in class.

Your discussion participation will be evaluated on quality – not just quantity – of comments. In addition, participation is evaluated on whether you added to the discussion, whether you maintain the continuity of the discussion (versus going off on tangents), and whether your comments reflect an understanding of the material. In particular, you should come to class able to describe and discuss the example that you worked with in the homework assignment.

Please talk to me if you have any concerns or questions about your class participation.

**Grades**

In this class, an "A" denotes outstanding performance, a "B" denotes good performance, and a "C" denotes acceptable, but unremarkable, performance.
Grades for this course will be based on:

Homework Assignments 40 points (5 assign.* 8 points each)
Participation
Quizzes 26 points (2 quizzes*13 points each)
Case Study Prep. 24 points (6 cases* 4 points each)
Discussion Contribution 10 points
TOTAL: 100 points

Discussion Topics and Weekly Assignments

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<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading</th>
<th>Homework Due</th>
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<tr>
<td>Week 1</td>
<td>(M) May 16th Overview &amp; Introduction to Linux</td>
<td>Fink, Chapter 1: The Business of Open Source and Linux</td>
<td>None</td>
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<td>(W) May 18th</td>
<td>*The Mozilla Foundation: Launching Firefox 1.0</td>
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<td>Week 2</td>
<td>(M) May 23rd Open Source Software</td>
<td>Fink, Chapter 5: Distributions – Completing Linux</td>
<td>HW1: Package Review and Evaluation</td>
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<td>(W) May 25th</td>
<td>*IBM and Eclipse Case</td>
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<td>Week 3</td>
<td>(M) May 30th Memorial Day – Enjoy the Holiday!</td>
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<td>HW2: Open Source Community Profile</td>
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<td>(W) June 1st</td>
<td>Raymond, Revenge of the Hackers (p. 167-192)</td>
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<td>Fink, Chapter 13: Human Resources – Getting Top Talent</td>
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<td>*Open Source Salvation or Suicide?</td>
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<td>Week 4</td>
<td>(M) June 6th Open Source Development (External)</td>
<td>Fink, Chapter 9: The Corporate Bazaar</td>
<td>HW3: Option 1 Open Source Firm Profile Option 2: Profile of Firm Open Source Use and Policies</td>
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<td>(W) June 8th</td>
<td>Raymond: The Magic Cauldron (pp. 113-166)</td>
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<td>Week 5</td>
<td>(M) June 13th Open Source Licenses</td>
<td>Fink, Chapter 12 (pp. 191-202 only): Integrating Open Source Into your Business</td>
<td>HW4: Open Source Licenses</td>
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<td>(W) June 15th</td>
<td>Fink, Chapter 3: Open Source – Navigating the Legal Path to Freedom</td>
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<td>Raymond, Homesteading the Noosphere (pp. 65-112)</td>
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<td>Week 6</td>
<td>(M) June 20th Business Use of Open Source Technologies</td>
<td>Fink, Chapter 12 (p. 203-208): Integrating Open Source Into your Business</td>
<td>HW5: Option 1 Experiencing Linux on the Desktop Option 2 Open Source Resource Review</td>
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<td>(W) June 22nd</td>
<td>*Novell Case</td>
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THIS SYLLABUS AND SCHEDULE MAY CHANGE.
ALL CHANGES WILL BE ANNOUNCED IN CLASS.