Experiences Teaching with Sakai

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Dec 6, 2007
Outline

• Background - What I am teaching
• Prior to the start of class
• Running the course
• Tools and Features
• Voice of my students
• Looking forward
One View

- Chief Architect / Executive Director
- It was always about the next feature or the next adoption
- Adoptions are driven by large lists of features - www.edutools.org
Another View

• Faculty Member
• There is only one choice I have on my campus - it is Sakai
• There is a lot of stuff here. What fits with my teaching approach?
• What are the tricks to bend a feature to my purposes?
• I have an idea - How do I extend this thing?
Beginning Java (SI543)

- Depth-first CS1 course for beginners - www.si543.com

- Java, Java, Java, Object-Oriented Problem Solving, Third Edition Morelli & Walde ©2006 | Prentice Hall

- I used the book’s PowerPoints for Lecture

- Recorded Lectures using MScribe robotic camera and iTunes University

- Switched to Google Android for the last three weeks of the course
I made an Open Courseware Live! site at www.si543.com so I could post stuff to the Google groups forming around Android.

New Android stuff was happening on a daily basis.
From: Dan Morrill  
Subject: An introduction regarding SI543  
Date: December 2, 2007 3:56:54 PM EST  
To: c.severance@ieee.org

Hello, Dr. Severance!

I'm Dan Morrill, with Google Developer Programs. I recently came across your web site at http://www.si543.com/, and was pleased to note that you've done some interesting material on Android.

I just wanted to congratulate you on what looks like a very interesting curriculum. That's the kind of class material I used to enjoy, myself: timely, hands-on, and concrete. I hope the curriculum worked well and that your students enjoyed it.

I also wanted to introduce myself, and invite you to contact me for any reason. If your plans include repeating or expanding on your SI543 curriculum for a future semester, I would be truly excited to help in any way I can.

Best,

- Dan Morrill

P.S. -- I noticed that you're affiliated with the School of Information. My wife is an archivist - Information Science for the win!
Design of Complex Web Sites

- Ruby on Rails
- Breadth-first - many topics - thin depth
- Model-View-Controller, HTTP, HTML, Ruby Language, CSS, Data Modeling, Unit Testing, Ajax, Intellectual Property etc etc.
- Taught Ruby Language, operators, variables, hash maps, lists, strings, classes, an object oriented design in one day! It was Chapter 2.
- www.si539.com
Book Choices - Ruby (SI539)

- Build Your Own Ruby on Rails Web Applications by Patrick Lenz
  http://www.sitepoint.com/books/rails1/

- Learn HTML and CSS: An Absolute Beginner's Guide by Ian Lloyd

  http://www.pragprog.com/titles/rails2
Welcome to the Fall 2007 SI 539 Project.

You can login if you previously created an account. To create a new account, press 'Login' and then 'New Account'. Make an account with a login of 'admin' to administer the system.

For good time, try out the new iPhone task portal.

Sorry about the CSS - perhaps someone will clean it up and make it look prettier.

The portal shows two tasks at a time using Ajax and they operate independently. The tasks work within the context of that site.

Add your comment.

Note: You should press “Save” or “Cancel” before navigating away from this screen.
SI539 Class Song: Ruby, Ruby, Ruby by the Kaiser Chiefs

Rails Commercials
My Approach / Ideas

- Lectures - Recorded / Not Recorded
- Podcasts - Scaffolding - try to move students forward more quickly
- Lecture / Lab - Having me teach both allowed me to see areas I missed and needed to revisit
- Email is key - the course list is a dev-list - cooperative learning
- No office hours - sometimes I would send out an E-Mail and hang out in the student lounge for a few hours if students were broadly stuck
My Approach / Ideas

• It takes a community - not just one teacher - former students, teachers, pals etc.

• Riffing and remixing as a teaching pattern - starting with something gets students into more complex learning moments more quickly

• Have students do focused work in larger applications - also provides sample code - typical assignment - I did X - you do Y

• In class practical midterm and final - allows collaborative learning the rest of the time
My Approach / Ideas

• Like group work and collective learning - do not like group grades

• SI543 - Allowed project option after the midterm

• Make programming assignments - required + optional challenges

• Helps with students of different background - allows me to teach to the beginning without boring the advanced students

• Don’t use synchronous time to do asynchronous things - but what if the students don’t listen to the podcasts. Sheesh
Way Before the Start of Class

- Contacted the prior teacher - Hans Masing / Trek Glowaki
- He gave me access to his CTools / Sakai site and iTunes University site
- Pulled down all materials using web dav and iTunes
- I partially learned Ruby and Rails using his Podcasts
<table>
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<th>Created By</th>
<th>Modified</th>
<th>Size</th>
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<td>SI 539 001 W07 Resources</td>
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<td>Hans Masing</td>
<td>Sep 3, 2005 11:18 am</td>
<td>3 items</td>
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<td>Actions</td>
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<td>Sep 22, 2006 7:40 pm</td>
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<td>Rails Cheatsheets</td>
<td>Actions</td>
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<td>Aug 23, 2006 4:55 pm</td>
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</tr>
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</table>

Show other sites
Prior to the Start of Class

- Monitoring roster changes
- E-Mail Archive Tool - Involved students in the book selection
- QA for the first assignment
- I really missed the Page Order Tool - to prepare materials and then unhide them
Worksite Setup

Creating a New Course Site

Course/Section(s) Selection - WINTER 2008

Please select the course/section(s) for which you would like to create a site.

Course Information

The following roster(s) have access to your site:

2008, 3, A, S1, 182 : 2008, 3, A, S1, 182

2008, 3, A, S1, 182, 001 : S1 182 001 W08, Lecture

2008, 3, A, S1, 539 : 2008, 3, A, S1, 539

Select Group of Sections

- 2008, 3, A, S1, 539, 002 : S1 539 002 W08, Laboratory (Site already exists, select anyway?)
- 2008, 3, A, S1, 539, 001 : S1 539 001 W08, Lecture (Site already exists, select anyway?)

Add course(s) and/or section(s) not listed above...

Continue  Back  Cancel
<table>
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<tr>
<th>Polls</th>
<th>Permissions</th>
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<tr>
<td><strong>Poll list</strong></td>
<td><strong>Opening</strong></td>
</tr>
<tr>
<td><strong>Question</strong></td>
<td><strong>Sep 17, 2007 2:00 PM</strong></td>
</tr>
<tr>
<td>Week 3 - How are we doing so far?</td>
<td></td>
</tr>
<tr>
<td><strong>Edit</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Question</strong></td>
<td><strong>Aug 18, 2007 1:00 PM</strong></td>
</tr>
<tr>
<td>How will you do the programming assignments for this course?</td>
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<tr>
<td><strong>Edit</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Question</strong></td>
<td><strong>Aug 1, 2007 8:00 AM</strong></td>
</tr>
<tr>
<td>Please indicate your level of Software Development Experience</td>
<td></td>
</tr>
<tr>
<td><strong>Edit</strong></td>
<td></td>
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**Update**
You are authorized to send email from: csev@umich.edu
Email sent to the following addresses will be archived and sent to participants:

si539f07@ctools.umich.edu
b3042682-35d9-43dc-8020-a4e6a9dfbdd@ctools.umich.edu

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<tr>
<th>From</th>
<th>Subject</th>
<th>Date Received</th>
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</thead>
<tbody>
<tr>
<td>Charles Severance</td>
<td>Hello and welcome to SI 539</td>
<td>Aug 8, 2007 9:28 AM EDT</td>
</tr>
<tr>
<td>Melissa Perez</td>
<td>Re: Hello and welcome to SI 539</td>
<td>Aug 8, 2007 9:39 AM EDT</td>
</tr>
<tr>
<td>Charles Severance</td>
<td>One more thing -- about the poll</td>
<td>Aug 8, 2007 9:41 AM EDT</td>
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<td>Charles Severance</td>
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<td>Proposed Book for SI 539</td>
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<td><a href="mailto:sergiomb@umich.edu">sergiomb@umich.edu</a></td>
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<td>Aug 27, 2007 3:55 PM EDT</td>
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Running the Course

- Announcements
- Assignments - Homework - Exams, everything
- Grade Off line
- Schedule

- Notification in Resources -
- Sakai 2.4 Resources Tool
- Wiki - Project Reports
- iTunesU - SI543
- Podcasts - did not store data in Sakai - used UM AFS
Lecture Recording Geek

• Sync-O-Matic - 1996 - Real Audio plus images - www.syncomat.com

• ClipBoard-2000 - 1999 - Quicktime Capture on Macintosh

• Web Lecture Archive Project (www.wlap.org) - Atlas HE Physics

• Sakai - ITunesU

• University of Michigan - 2003 - MScribe Robotic Camera

• Screen Capture using iShowU and Omni Dazzle - 2007

• Apple Podcast Producer - 2007
MScribe - SI543

http://www.umich.edu/~mscribe/

Video of speaker instead of disembodied voice

Optional chalkboard images available

Preview slide thumbnails take you to any point of the lecture

High-resolution slides preserve details

Visible and infrared views of the tracking necklace
Podcasts - SI539

- No Lecture Recording - I was not prepared enough - I needed student feedback and needed to be very agile with the material
- Lab Podcasts for Scaffolding - 15-30 minutes per week
- Effectively my “opening statements” for the lab
- iShowU and Omni Dazzle and PhotoBooth - Perfect - Like this talk
- I also use Parallels on my mac to record Windows sessions
- Emergency Lectures - Barcelona and Newport beach
http://www-personal.umich.edu/~csev/

www.si543.com

Sorry No Audio Because I am Making this Podcast During a Meeting.
Step 1 - Download the Pong ZIP to Your Desktop
Step 2 - Unzip
Step 3 - Do stuff In Eclipse

Forms: Interacting with your Audience
Onita, Guettler
Llegv Chapter 7

These slides incorporate, in part, the text from "Building your Own Web Site the Right Way Using PHP, MySQL & XML" by Jennifer Moore from Sams Publishing.
<table>
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<tr>
<th>Assignment title</th>
<th>Status</th>
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<th>In / New</th>
<th>Scale</th>
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<td>Sep 10, 2007 6:05 pm</td>
<td>36/1</td>
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<td>Assignment 2 - User Object</td>
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<td>Sep 18, 2007 11:55 pm</td>
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<td>Sep 25, 2007 11:55 pm</td>
<td>39/1</td>
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<td>Assignment 4 - On to the View</td>
<td>Closed</td>
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<tr>
<td>Assignment 5 - A CRUD Treasure Hunt</td>
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<td>39/0</td>
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## Assignments

### Submissions for "Assignment 9 - Adding Ajax"

Assign this grade to all participants without a grade: [ ] Apply

<table>
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<th>Student</th>
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<th>Grade</th>
<th>Release</th>
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<td><a href="mailto:antranig@caret.cam.ac.uk">antranig@caret.cam.ac.uk</a></td>
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<tr>
<td>Bauer, Jared</td>
<td></td>
<td>Ungraded</td>
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<tr>
<td>Bornhorst, Dustin</td>
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<td>Cohen, Jonathan</td>
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<td>Conway, Martha</td>
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</table>
# Actually grade

find . -name '*.rb' | grep -v '^./public' | grep -v '^./config' | grep -v '^./test' | grep -v route.rb | grep -v schema.rb | grep -v helpers | grep -v application.rb | grep -v MACOSX > /tmp/abc
find . -name '*.rhtml' >> /tmp/abc
find . -name '*.java' >> /tmp/abc
cat /tmp/abc
echo 'Grade (y/n) ?'
set ans=$<
if ( "$ans" == "y" ) then
  foreach ii ( `cat /tmp/abc | sed 's/ /@@@@/g'` )
    set i=`echo $ii | sed 's/@@@@/ /g'`
    more "$i"
  end
pwd
echo ===========================
echo
echo
endif
Upload All

Select an archive file to upload, choose options, and then click 'Upload' at the bottom. Required items marked with *

The archive file should contain a folder for each student. (Download Template) Each folder can contain a comments.txt file, the student's submission with instructor comments you have added, and other files you want to return with the student's submission.

File:
Choose File: no file selected

Choose which elements in the archive file to upload:
- Student submission text (original student submitted text, possibly containing instructor added comments)
- Student submission attachment(s)
- Grade file (grades.csv file at top level of archive)
- Feedback text (the incline comments with student submission)
- Feedback comments (comments.txt file if available in student's folder. Comments are put into the Instructor Comments field for each student's submission)
- Feedback attachment(s)

Select release option:
- Release uploaded information to students
- Do not release uploaded information - I'll release it later
It Takes a Community to Teach
Howdy,

Got a couple questions about the midterm which I'm having trouble with. What is Pass-by-value (primitives) and Pass-by-reference (objects)? And what is Formal parameters versus actual parameters?

Any help is greatly appreciated,

Mark
With "pass by value", alterations made to the local argument inside the function body will not be reflected in the version held in the caller. In essence the function has a separate copy of the argument made at the point of the function call.

With "pass by reference", the caller and the function share the same object, and so modifications made within the function will be seen in the copy held outside after it returns.

In Java, the situation is a bit obscured since in true fact, it *always* uses pass-by-value, it's just that for non-primitive types, the type itself just consists of a reference, which is dereferenced automatically. That is, the reference is passed *by value* into the function, what is shared between the function and its caller is the object at the end of it.

If this last paragraph seems confusing, just ignore it :)

For the last question, "formal parameters" is the term used on the function's side, to represent its local versions of the
For the last question, "formal parameters" is the term used on the function's side, to represent its local versions of the arguments. "actual parameters", or less ambiguously, "actual arguments" are the actual instances used at a particular time by a caller of the function to invoke it.

So, public void f(int x, int y) {
    ... stuff
    here, x and y are formal parameters.

    Whereas in the call f(2, 3), the actual arguments are 2 and 3, for this particular function call.

Hope this helps,
Cheers,
Antranig.
I think I need to dynamically generate divs for the ajax script `visual_effect :highlight` to work in a project site.

Background:
Each "story" has many "candidates". People cast "ballots", which belong to candidates. A collection of candidates are rendered with a partial. The partial links to remote javascript, which references the highlighted element. When people cast a ballot, the specific score should automatically reload and highlight.

-Jon
Hey Jon,

You probably want to identify each div uniquely, if I am interpreting your problem correctly. IDs in HTML *must* be unique (so having ballot_score as the ID many times is an HTML syntax error).

Javascript, when looking for IDs assume they are unique and stops search when it finds the first hit.

Try:
<div id="ballot_score_#{candidate.id}"> Score: 
<%= candidate.ballots_count %> </div>
and
page["ballot_score_#{candidate.id}"].visual_effect :highlight

to give each ballot score div a unique identifier and later find it.

- Trek
Comments from the Students
September 16
Help, what does this mean?
app/controllers/assn2_controller.rb:42: syntax error,
unexpected $end, expecting kEND

November 12
Well, you'll never hear this from me ever again but -- that
assignment was too easy!

November 19
For those interested:
A draft syllabus for the database design class is at http://
www.citi.umich.edu/u/cja/Sl572.pdf
-- Martha
For Sakai, I took Lada Adamic's data analysis class earlier this semester. She had us post each of our assignments - including code, graphics, and analysis - to the Ctools Forum. We were each responsible for responding to others assignments. The Forum worked well for this and I found myself - even after the class was over - going back to classmate's assignment for references. We all did different things for our assignments so we ended up with a broad range of knowledge that's easy to access and a great resource.

Improvements would be if the Fourms used AJAX editing features to speed up scrolling and commenting. At times, it was hard to browse through things because of load time. The 'mark as read' or read/unread feature didn't seem to work automatically like web email - e.g. open the message and it automatically is marked as read.

--- Theodore
-My department conducted chats in Sakai over the summer for incoming students. It was really great to chat with the administration and current students before I came. The chat tool is simple, but overall effective.

-Really like turning in my assignments electronically. Relieves me of the burden of printing out the assignment and turning it in person which as we've all know can be problematic (printer problems, illness, etc.) In Sakai it is easy to attach documents and I like receiving an email confirmation so I know that my assignment was accepted. It's also nice to be able to see the date and time when an assignment is due.

-Only one of my professors conducted polls with the system. I wish more would do so--it was a great way to give feedback to the instructor.

-- Maureen
It would be extremely helpful to redesign the information architecture so that tasks can be done with fewer clicks, particularly repetitive tasks - it took me two hours to manually upload all my students' papers, after which my co-GSI wrote a program to email papers back to students so that we could return them in seconds.

- Elizabeth
Tools and Features

- Acesss under *my* control - who what when why and how!
- Site Info Usability - I use this 2% of the time
- Resources 2.4 - Awesome - the right features and no more
- Assignments - wonderful - a bit clunky - hard to think about how to change it - it is so big that if you fix one thing - you might break something else - I would like a quick entry mode for grades
Tools and Features

- iCal feed - I want to see my course events in my Desktop calendar - and I want it right now!!! - readonly is fine

- Want to not see Observers in my Assignments - function for gradable in Assignments - Next semester I will have multiple sites per class

- Web Dav - Mostly for when another teacher gives me access to their course - there is a conflict between the logical hiding needs of something like a test engine or Melete and the need to exchange whole courses between instructors. It is better than nothing.
Tools and Features

- 100% offline grading - sweet Thursdays at 5AM...
My Next Courses...

• SI182- New Course - Undergraduate? Will the same techniques work as well?

• Public / Friends / Roster - Pull in my prior students

• Peer grading - Forum Hmmm.

• Methodology

• Tools I need to write - podcasts - tracking - annotation
Next Semester

- SI182 - Design of Information Environments
- Innovative data-centric approach to a CS1 course - using Python
- Gateway course for new Informatics Major - data / visualization
- SI539 - Design of Complex Web Sites (again)
- Focus on polishing my materials and Sakai site structure
- Will change the order of the materials - HTML/CSS first
SI182 - Approach

- Asynchronous materials
- Book + Pre-Recorded Basic lectures - always available
- Lab Assignments and supporting podcasts - always available
- I want: Students to be able to have a great experience without ever coming to class - *and* I want 100% attendance at the face-to-face meetings and heavy use of the mail list for all questions.
SI182: Building Applications for Information Environments

Welcome to SI 182 - a new course being taught in Winter 2008 semester at the University of Michigan. SI 182 is an introductory programming course designed to be useful to a wide range of students in all concentrations. Specifically, we designed the course keeping in mind the technology skills students will need throughout their careers. The one thing that you will likely encounter over and over during your undergraduate degree, when you pursue advanced degrees, and once you are working is complex data that needs to be analyzed, understood, and visualized.

While you can do a lot with a spreadsheet, most of the interesting data is never quite in the right format. Sometimes, before you can work with data, you have to “clean it up”, transform it, or even check it for errors. Often, this manipulation of data requires a series of tedious manual steps - and sometimes you have to repeat the steps over and over again for each new data set with which you are working.

This is where programming comes in - programming is a simple way for you to describe a series of steps to the computer and then sit back and watch as the computer happily does your task over and over without making a mistake. As a result, you can turn your focus to exploring and interpreting the data instead of laboring over manual editing.

Automation of these mundane tasks requires some programming skills. It isn’t necessary to be a “super programmer” - just to have an ability to learn and apply the basics. These basics are useful for writing a macro in a spreadsheet, data visualization script, interactive web page, or game to run on your cell phone.

If you want to take more advanced software development course prepare you for the more advanced courses in ECECS. And, if this pretty handy with data and visualization for the rest of your career.

For More Information or to Ask Questions

www.si182.com
Design of Complex Web Sites - SI539

- Build in Open Course Ware from the beginning - three sites
- Course Site - SI539 - Winter 2008
- Project Site - SI539@UM
- Open Course Site - www.si539.com - www.rubylearn.com
Welcome to Teaching Programming with Ruby and Rails

This is a very much under construction web site being initially built by Dr. Charles Severance to collect resources to help in teaching Ruby and Rails to beginning programming students.

The first course I am developing is SI539 - Design of Complex Web Sites being taught Fall 2007 at the University of Michigan. I am using this site to make my materials publically available under the Creative Commons Attribution 2.5.

Textbook
www.rubylearn.com
Personal Learning Environment

SI539@UM Community

SI539
Winter 2008

SI539
Fall 2007
My Personal Research Topics

- Deeply exploring the concept of Open Courseware - Live!
- IMS Tools Interoperability - Functionality Mashup
- IMS Common Cartridge - Easy and constant flow of content and artifacts
- Personal Learning Environments - Goal aware - Learning Objective Aware Software....
Looking forward for Sakai

- As a faculty member, Sakai is perfectly fine for me
- Weaknesses I still see in Sakai 2.4
- Large courses
- Distance Education
- Content Repository - I need 10GB per course with permanent URLs and extremely fast upload and download speed
Technical vision for Sakai

- Powerful and scalable content management is Sakai’s top priority
- Sakai has grown to be far too big (my fault) - that it is now unwieldy as a single released application - we need to be like Moodle
- A small, carefully designed and tested set of basic core capabilities
- Modules are easy to add and versioned to the core release
- IMS Tool Interoperability - Functionality Mashup
Summary

• I really like Sakai as a teacher - I am really glad my campus chose Sakai

• Because of Sakai - the CT tools tech support team has so many tricks up their sleeve if I want to try something

• I am glad that someone took the time over the past few years to build an enterprise scale open source learning management system and got it adopted at my institution

• Teaching is a lot more fun in 2007 that it was in 2001 or 1997.
Web Sites

- www.dr-chuck.com
- www.si543.com (java)
- www.si539.com (Ruby / Rails )
- www.si182.com (Python)
- http://www.umich.edu/~mscribe/