CS 416
Web Programming

Preliminaries

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Central Connecticut State University

Agenda

- Get to know each other
- Walk through syllabus
  - Course description & objectives
  - Grading
  - Assignments
  - Class participation
  - Course calendar
- Begin crash course in HTML

Getting to know each other

- Name
- Prior experience programming/developing web pages, web sites
- What sort of job do you want after graduation
- Something unique about yourself

Basics

- **My office:** MS 303
- **Phone:** 860-832-2719
- **Office hours:** MW 11:00-12:00; TR 10:30-12:00; and by appointment.
- **e-mail:** cwilliams@ccsu.edu
- **Course website:** Blackboard and GitHub
- **Class times:** Monday and Wednesday
  - 12:15 pm - 1:30 pm SSH 209

Text book and references

- **Optional books:**
  - Hartl, Michael. The Ruby on Rails Tutorial (Rails 5) 4e. 2016. It is available for free online at https://www.railstutorial.org/ or you can purchase print or ebook versions at same location.
- Technical reference material can also be found at:
  - w3schools.com
  - Oracle J2EE

What is this class about?

- In depth web programming
  - Browser and server side **programming**
  - Developing web **applications**
  - Learning architectures, mechanisms, and design patterns of application server language (in class J2EE and Rails, but same apply to C#, PHP, Python)
  - Focus on open source tools
  - …and what it is not about

Course objectives

At the end of this course you should:

- Be able to express how web sites become interactive applications rather than a series of web pages
- Be able to explain the role an application server plays in creating dynamic web sites
- Recognize the importance server side processing plays in complex web sites

Course objectives cont.

- Be able to develop and deploy form processing and persistence across HTTP requests
- Be able to make “smart” pages using asynchronous server calls (AJAX)
- Be able to make reusable web pages with complex dynamic content

Course objectives cont.

- Develop web applications that use databases for retrieving and writing web elements
- Develop applications that involve complex database transactions
- Be able to select the best set of web technologies suited for a particular application

➢ **Result: Not only do you know how to develop complex web applications you are also more marketable!**

Course learning outcomes

- Ability to evaluate the **requirements** of a web application and identify the appropriate **technologies for a solution**
- Ability to synthesize solutions that conform with established **web architectural patterns**
- Ability to analyze **data requirements** and identify an appropriate web interface as well as **database model**

Course learning outcomes cont.

- Ability to apply multi-tier concepts to create a **data-driven web application**
- Ability to analyze basic **security considerations** and risks and how to apply appropriate protection measures
- Ability to synthesizing a large team-built project incorporating an **analysis of design choices and implementation methods** covering a broad range of topics discussed

Accounts

Required:

- GitHub – used for class code submissions

Recommended:

- Cloud9 – When we get to Ruby on Rails development, this cloud based development environment allows you to have an IDE and Linux VM preconfigured with the Rails versions used in the textbook. (Note requires a credit card number to create the account, but is free for the functionality used in class. A $15 prepaid Visa from Stop and Shop did the trick nicely for me)
- Heroku – cloud deployment when we get to rails

Grading for the course

Letter grade will be calculated according to the following table:

A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
95-100	90-94	87-89	84-86	80-83	77-79	74-76	70-73	67-69	64-66	60-63	0-59

Percentage of grade:	
Assignments	40%
Midterm	20%
Project	20%
Final exam	20%

- Basic philosophy:
  - Participation and assignments are your chance to learn, effort rewarded
  - Exams and the final project test that you learned from your mistakes

Exams (40% of grade)

Exams

- Midterm (20% of grade)
  - Monday, October 23rd (tentatively)
- Final (20% of grade & cumulative) will be at the university's scheduled time:
  - Monday, December 11th
    - Section 1: 10:30-12:30
- Focus of exams will be demonstrating that you know **when to use which technologies and how** whereas assignments and projects test implementation skills

Assignments (40% of grade)

- Approximately 4 assignments each weighted equally
  - For all assignments **except** the first one you may work in groups of 2-3. For the first assignment you must work individually
  - Start work early!
- All assignments are due 11:59pm Sunday unless otherwise instructed
- All assignments will be submitted through Blackboard

Turning in work late

- I do accept late work with a **penalty of 10% for each day** after the due date
- **No assignment or final project will be accepted after the day of the final exam**
- Keep pace with lectures and assignments otherwise it can be difficult to catch up

Class project (20% of grade)

- You **must** work in teams of 2 to 3 people
  - **Why?** Because in the real world you always will be working on large programming projects with others. Not only will this allow you to take on more challenging projects, but it is also a good learning experience and something that looks good on your resume.
- You will be given quite a bit of freedom in developing a web application that demonstrates the concepts you have learned in the course
- You will need to give an oral presentation and demonstration of your application to the class

What is class participation

- It is **not** just showing up
- It is active involvement that contributes to the class
- I don't expect you to know everything, part of participation is speaking up if something is unclear
- **Thoughtful** contributions regardless of correctness will be rewarded
- How you will be evaluated:

http://www.cs.ccsu.edu/~williams/classes/WhatDoesClassParticipationMean.pdf

Class participation – in class work

- We will often be working through problems together in class getting progressively harder. I **highly** recommend that you work in teams of 2-3 people
- Due to class pace you may not finish a problem in class before we go through it together. Even if you didn't finish it, when we go through the solution together it is critical that you understand what should be done.
- I leave it up to you whether you think you need to finish the work outside of class to polish your understanding.
- This serves two purposes: 1) it helps me understand which areas need additional focus and 2) it shows me the effort you are making in class.

Attendance

- I expect students to attend class regularly not doing so **will** impact your grade
- Each absence over 3 will reduce your overall grade by 1/4th of a letter grade (unless university excused)
- If you miss class it is **your responsibility** to get announcements and determine what you missed from your classmates
- In the event of a weather emergency that requires curtailment or cancellation of classes, listen to WTIC (1080 AM) or call (860) 832-3333

Common Sense

- No cell phones or texting
- Cheating will not be tolerated
  - Any form of academic dishonesty (e.g., plagiarism, cheating and misrepresentation) may result in disciplinary action.
  - If you do turn in work that I suspect is the result of cheating, it will be dealt with **harshly**.
  - Possible disciplinary actions may include failure for part of or all of a course as well as suspension from the University.
- If you choose to work in a group for an assignment you all must clearly indicate as such in the Blackboard submission and **you all** must click submit.

Students with special needs

- Please contact me privately to discuss your specific needs if you believe you need course accommodations based on the impact of a disability, medical condition, or if you have emergency medical information to share. I will need a copy of the accommodation letter from Student Disability Services in order to arrange your class accommodations. Contact Student Disability Services, Willard Hall, 101-04 if you are not already registered with them. Student Disability Services maintains the confidential documentation of your disability and assists you in coordinating reasonable accommodations with your faculty.

How to succeed

- **USE OFFICE HOURS!**
  - Work through practice problems
  - Discuss some topic you are having difficulty with
  - Put simply, **if you are confused come see me**. While I have posted office hours, feel free to stop by anytime or make an appointment with me if you want to make sure I'm available at a specific time.
- **Do all of your assignments**. It is the best way to realize quickly if you are missing any important points so that you don't make similar mistakes on the mid-term, final project, and final exams.
- **Get involved** in lectures. Don't be afraid to ask for clarification or additional explanation, chances are if you are confused someone else is as well.
- **Pay attention to my feedback on all of your returned homeworks and exams**

Keeping up with latest

- Blackboard will have
  - Full version of the syllabus
  - Announcements
  - Assignments
  - Lecture slides
- GitHub site
  - Many of the examples we go through in class