Course Overview

CS 4640
Programming Languages for Web Applications
Goals

• Understand the importance of the usability aspect
  • Outside-in vs inside-out
  • Design usable web user interfaces

• Understand and be able to program web applications
  • Client side and Server side
  • Front end framework and Single Page Application (SPA)

• Understand how data stored and shared in web applications

• Understand and able to utilize asynchronous processing
  • Improve interaction between web servers and web clients
  • Improve usability

Which languages / technologies / frameworks should we use??
(Some) [history of web development](#) – many things are not presented in this image
Course Topics

• Split web software into two aspects:
  • The interface aspect
  • The software aspect

• The interface runs on the client side (web client)
  • HTML, CSS, JavaScript
  • Achieving usability is a key, and very difficult

• The software runs on the server side (web server)
  • PHP
  • The key to other quality criteria (reliability, etc.)

• Other technologies
  • AJAX
  • Angular
  • XML, JSON
  • Database (MySQL)
Logistics

- **Class URL:** http://www.cs.virginia.edu/~up3f/cs4640/

- **Textbook:** No text required, additional references will be provided

- **Quizzes:** Weekly, first 10-15 minutes of class
  - No makeups, 2 lowest grades dropped for unavoidable absences (keep 10)
  - Replaces traditional midterm exam

- **In-class exercise:** Almost every Thursdays and some Tuesdays
  - No makeups, 2 lowest grades dropped for unavoidable absences (keep 10)

- **Learning style:** Lab-style work included in lectures
  - Bring your laptop

- **Homework (project):** Group-based; each assignment builds on the last
  - Due at the beginning of class
  - 25% deduction per day for late submissions
  - Not accepted after 2 days past the due date

- **Final:** Comprehensive closed-book/note
Project Assignments

- Build a portfolio-worthy web application piece-by-piece
- Deliverables, (approximately) every 2-3 weeks, follow class topics
- Form two-person project groups

Optional: web service
Information visualization

These are components that you will implement. You may design the system using any software architectural style(s) of your choice (such as page-centric, dispatcher, model-view-control, or combination) to create single-page app, multiple-pages app, or combination). Your system must include client-side and server-side components.
Discussion Board Use

- This course uses Piazza
  - URL: [https://piazza.com/virginia/spring2019/cs4640s19/home](https://piazza.com/virginia/spring2019/cs4640s19/home)
  - You should have gotten an invitation today
  - If not, check your UVA email or check with me

- You are encouraged to join the discussions

- Questions should be posted to an appropriate thread
  - Answered by instructor, TAs, and your peers
  - General questions and answers available for all to see (public)
  - Grade-specific or homework-specific questions should be made private
Grading Policy

- In-class exercises: 20% (drop 2, keep 10, no make-ups)
- Homework assignments: 30% (course project)
- Weekly quizzes: 30% (drop 2, keep 10, no make-ups)
- Final exam: 20% (comprehensive)