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:** First 10-15 minutes of class, mostly Tuesdays and some Thursdays
  - No makeups, 2 lowest grades dropped for unavoidable absences (keep 10 out of 12)

• **In-class exercises:** Almost every Thursdays and some Tuesdays
  - No makeups, 2 lowest grades dropped for unavoidable absences (keep 10 out of 12)

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

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

• **Final exam:** Comprehensive closed-book/note
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/spring2020/cs4640s20/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 course staff 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%
- **Homework assignments (project)**: 30%
  - hw1: Project proposal
  - hw2: Frontend
  - hw3: Backend and data persistence
  - hw4: Final deliverable
  - EC: Ajax
  - Showtime: Final project presentation
- **Quizzes**: 30%
- **Final exam**: 20% (comprehensive)

By default, grades will not be rounded in this course