CS142 - Web Applications

http://cs142.stanford.edu

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Today: CS142 FAQ

- What is this course about?
- How is my course grade determined?
- Who is teaching the course?
- How do I communicate with the course staff?
- What kind of programming projects will I have to do?
- What kind of computing environment do I need?
- Do I need to buy a textbook?
- Are the course lectures recorded on video?
Course is about Web Applications

Technologies used to build modern web applications

Note: CS14x (computer systems course in Computer Science department)

Full stack: Browser ⇔ Web server ⇔ Database system

Goal: Learn how a web application is built

How to build a web application

Learn MEAN stack (AngularJS, Node.js Express.js, MongoDB)
Web Application Architecture

Web Browser

Web Server / Application server

Storage System

Internet

LAN

HTTP

CS142 Lecture Notes - Intro
CS142 Technologies and Concepts

HTML/CSS/JavaScript/DOM - Markup, separation of content & style, reuse
Document object Model (DOM) - Document structure
Angular.js - Model View Controller, Single page applications

HTTP/AJAX/REST - API design
Cookies/Sessions

DBMS - Schema, Objects, CRUD, indexes, transactions

End-to-End - Scale and Security

Removed from last teaching of cs142: Ruby/Rails/ORM/RDMS/SQL
Grading

55% Projects - 8 projects (Due on Thursdays - First due 1/14, last due 3/10)

15% Midterm Exam - Monday, February 8, 7:30-8:50 P.M.
   Closed book, with limited note pages

30% Final Exam - Thursday, March 17, 8:30-11:30 A.M.
   Closed book, with limited note pages
## Course Staff

Instructor: Mendel Rosenblum ([mendel@cs.stanford.edu](mailto:mendel@cs.stanford.edu))

Course Assistants ([cs142-win1516-staff@lists.stanford.edu](mailto:cs142-win1516-staff@lists.stanford.edu))

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<th>Odetta Du</th>
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<tr>
<td>Alexander Leishman</td>
<td>Raymond Luong</td>
<td>Don Mai</td>
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<td>Santiago Seira</td>
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Course Communication

   Good for questions/comments where everyone can see the reply

2. Email - cs140-win1516-staff@lists.stanford.edu
   Good for private communication with the course staff (CAs and myself)

3. Mendel Rosenblum - mendel@cs.stanford.edu
CS142 Course Project Evolution

Previous quarters of cs142: Ruby on Rails with a SQL relational database

New for this quarter:

- AngularJS - JavaScript-based browser framework for apps
- Node.js - JavaScript-based server engine
- MongoDB - An object database

Pro: Learn cutting edge technology  Con: Be a pioneer
Project details

1. HTML & CSS
2. JavaScript
3. Browser DOM
4. Learn AngularJS - Single page application
5. Photo Sharing App
6. Backend server - Node.js and MongoDB
7. Sessions state and validation
8. Security
Class software requirements

- A modern web browser
  Chrome is strongly suggested, Internet Explore (IE) is strongly discouraged

- Node.js
  Installs fairly easily on modern OS environment (Linux, MacOS, Windows)
  npm (in Node.js install) is used for fetching assignments and dependencies

- MongoDB
  Easy to install (for a DBMS) on modern OS environments
Stanford Honor Code

We want you to do the projects individually
Questions?