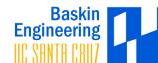


Web Applications

CSE183

Fall 2020

Introduction



Notices

- Administration 1 & 2 due 23:59 Thursday October 15
- Assignment 1 due 23:59 Thursday October 8

2

Today's Lecture

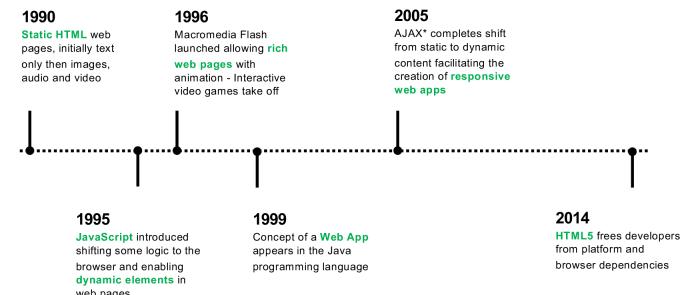
- Introduction
- Resources
- Course Outline
- Assessment
- Grading
- Academic Integrity

- Assignment 1
- Questions

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Early History of Web Applications

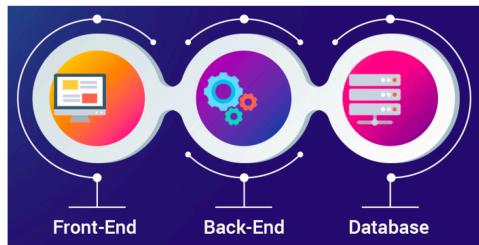

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* Asynchronous JavaScript and XML

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1

Full Stack Web Applications



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<https://tinyurl.com/ywz-cohort/uploads/2019/01/Full-Stack-Development-Services-1.jpg>

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UC Berkeley Extension Academic Areas Student Services Blog Berkeley Global

Introduction to Full Stack Web Development
COMPSCI X443.1

Learn the fundamentals of full-stack web development using some of the most popular open-source libraries. The stack is comprised of Angular.js/Handlebars (front-end), Node.js/Express (back-end) and MongoDB (NoSQL), MySQL or Postgres (Relational) (DB technologies). In addition, you learn HTML5/CSS3/JavaScript/jQuery and DevOps/Software Development skills. Full-stack web development is an important skill set to build fully-functional web applications. Learn more by e-mailing the instructor at mkremer@berkeley.edu.



76,713 already enrolled



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Full Stack Web Applications

Browser



Server



Storage



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Software Requirements

- A Modern Browser
 - Chrome strongly recommended, Firefox is good too
 - Try to avoid Internet Explorer and Safari
- Node.js
 - JavaScript runtime environment
 - Installs easily on Windows, MacOS, Linux
 - Includes npm (Node Package Manager)
- PostgreSQL
 - "The worlds most advanced open source database"
 - Derived from UC Berkeley Ingres project
 - Team Leader (Michael Stonebreaker) won Turing Award in 2014



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The NERP* Stack

- | | |
|-------------------|---|
| Node.js | JavaScript runtime environment |
| Express.js | Web Application framework for Node.js |
| React | JavaScript library for building user interfaces |
| PostgreSQL | Database management system |



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* I totally made that up, not a recognized acronym. ©

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Resources

- People
 - David (Instructor) dcharris@ucsc.edu
 - Alex (TA) arinaldi@ucsc.edu
 - Hayden (TA) hchen222@ucsc.edu
- Course pages
 - <https://canvas.ucsc.edu/courses/36577>
 - Lecture handouts & Zoom recordings available shortly after each lecture
- Instructor office hours
 - 16:30 to 18:00 every weekday, excluding holidays
 - Zoom link on Canvas
 - Waiting room if it gets crowded
 - Arrive prepared
 - Invite your study buddies to join at the same time

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Course Outline

- **Browsers**
 - Markup, separation of content & style, reuse, scripting
 - The Document Object Model
- **User Interface**
 - Model View Controller, React, Single Page Applications, Responsive Web Design
- **App Servers**
 - Browser/Server Comms., Web Servers, Node.js, Express.js
- **Storage**
 - PostgreSQL, Cookies, Session Data
- **Miscellaneous**
 - Input Validation, State Management, Security, Scaling

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Assessment

| | |
|-----------------------------------|---|
| Administration x 2 | (not graded, mandatory) |
| Individual Assignments x 8 | 50% (4% x 2 & 7% x 6, 1 week each) |
| Group Assignment | 20% (3 weeks) |
| In-Class Quizzes x 5 | 10% (2%, 25 minutes each) |
| Final Examination | 20% (3 hours in finals week) |

NOTE: Administration tasks are mandatory, and you must pass every component (assignments, quizzes, and examinations) to pass the class. E.g., doing well on the final and quizzes but submitting too many poor assignments will see you fail the class.

HOWEVER: Doing badly on one or two assignments or quizzes but well on the others, is fine so long as the aggregate grade for the assignments/quizzes is a pass.

REMEMBER: If you do not pass the final, you do not pass the class.

HOWEVER: Failing any single quiz or assignment is *not* an instant fail.

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Assignments, Quizzes, Final

- **Individual Assignments**
 - Single new concept coding exercises
- **Group Assignment**
 - Multi concept “realistic” full stack Web app
 - Teams of two
 - Equitable distribution of work must be demonstrated
- **Quizzes**
 - Small number of small questions
 - Reinforces lecture material
 - Encourages you to produce your own study guides
- **Final**
 - Larger number of larger questions
 - Sample examination with solutions provided two weeks before final

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Submissions

- **Individual Assignments**
 - Released 08:00 Fridays
 - Due 23:59 Thursdays
- **Group Assignment**
 - Released 08:00 Friday November 20
 - Due 23:59 Thursday December 10
- **In-Class Quizzes**
 - Approximately every second Friday
 - During lecture slot
 - Random start times
 - Randomized Canvas Quiz
 - Zoom Proctoring

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Grade Bands

| Grade | Range | Characterisation |
|-------------|---------------|--|
| A+ | 95-100 | Outstanding |
| A | 88-94 | Excellent |
| A- | 81-87 | Excellent in most respects |
| B+ | 75-80 | Very good |
| B | 70-74 | Good |
| B- | 65-69 | Good overall, but some weaknesses |
| C+ | 60-64 | Satisfactory to good |
| C | 55-59 | Satisfactory |
| * C- | 50-54 | Adequate evidence of learning |
| * D | 45-49 | Some evidence of learning |
| F | 0-44 | Below the required standard; fail |

* Pass, but cannot be used to satisfy a major requirement or a general education requirement, and cannot satisfy a prerequisite for another course. <https://registrar.ucsc.edu/navigator/section4/performance/letter-grades.html>

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Academic Integrity

- Assignments are individual tasks, but...
 - We encourage you to work, study, and think together
 - But ensure the final product is yours and yours alone
- All course work is submitted electronically
 - No late submissions allowed
 - Checked for collaboration & plagiarism
 - If you copy another student, you fail the assignment ☹
 - If you copy a solution found on the web, you fail the assignment ☹
 - In both cases you may get kicked off the class, or even out of school ☹ ☹
- Examinations (quizzes and final) are open book
 - Laptop camera proctoring
 - Canvas quiz monitoring
 - Randomised question selection

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Assignment 1

- Approximately 1,500-word paper
- “A Brief History of Web Applications”
 - Entirely Free format
 - Idea is for you to do some research
- Possible sections:
 - Major milestones
 - Uptake charts/graphs
 - Browser market share
 - Development framework popularity
 - Etc.
- Use charts / images you find on-line
- Include details of a few connections to Santa Cruz and/or UCSC
- Must include references in IEEE style

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Next Lectures

- Monday: Hypertext Markup Language (HTML)
- Tuesday: Cascading Style Sheets (CSS)

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Tasks

- **Administration 1 & 2** due 23:59 **Thursday October 15**
- **Assignment 1** due 23:59 **Thursday October 8**

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