

CSE 91, Fall 2007

Perspectives in Computer Science

Class Project Discussion

October 9, 2007

Class URL:

<http://vlsicad.ucsd.edu/courses/cse91-fa07/>

Why A Project? To Learn...

- ...About a topic that interests you
- ...About teamwork and collaboration
 - Constraints
 - Schedule + Personalities + Resources (e.g., time)
 - Keeping the end goal in mind
- ...About how to learn
 - Research processes
 - Information sources
 - Wikipedia, uspto.gov, Google Scholar, ieeexplore.ieee.org, portal.acm.org/dl.cfm/ ...
 - Scoping what you do
 - Need depth → not too broad
 - Need relevance → not too narrow
 - Need meaning → not too trivial

Why A Project? To Learn...

- ...About how to communicate
 - Telling a story
 - Motivations
 - Objectives / Goals
 - Background
 - What we did / What we found
 - Discussion / Analysis / Conclusions
 - Open Questions / Future Directions
 - Writing skills
 - Organization
 - Mechanics
 - Clarity
 - Presentation skills
 - 9 minutes = 4 persons x 135 seconds/person

Project Mechanics

- Find a team
- Choose a topic
- Deliverables
 - Milestones/Checkpoints
 - Oct 18: Project Initial Proposals Due --- Form 4-person team, submit 2-page writeup
→ Proposed topic, why we think it's interesting,
 - Oct 30: Project Selections Finalized
 - Nov 27: Project Draft Reports Due
 - **Nov 29: Project Review Feedback Due (?) == review another team's materials**
 - Dec 4: Project Draft Presentations Due
 - Dec 6: Project Final Reports Due
 - Dec 8: Project Presentations Final Upload Due
 - Dec 9: Project Presentations (10 min x 25 projects) 2pm to 7pm with pizza dinner
 - Written report (PDF, 11pt font, 6-10 pages including references)
 - 10-minute PPT presentation (9 minutes + 1 minute transition time)
 - Optional: project webpage (convenient portal, richer presentation, ...)

“Business” Project Topics

- Web 2.0 topics
 - Optimization of WebPages for Search Engines
 - Search Engine Spider/Crawling Algorithms
 - People Search Engines (Spock, Zoominfo, WikiYou, PeekYou, Wink, etc.)
 - Reputation-Based Systems (RapLeaf, etc.)
 - Emerging Business Models
 - A new product and its business plan, perhaps with a fictitious (mocked-up) website
- Analysis of other CS/business topics
 - Copyright and Open Source
 - The Future of Linux
 - Does Moore's Law Matter for CS?
 - Convergence of Mobile Consumer Devices
 - Measuring the Internet

“Sociology” Project Topics

- Video/website: Why I (we) chose UCSD CSE?
- What subfield of CSE is most interesting, and why I am (we are) considering a focus on this over the next 4 years
- How the Web is changing conferences and trade shows
 - E.g., www.siggraph.org or www.dac.com
- Design and implementation of part of a CSE 91 wiki
- How the Web is changing K-12 teaching
- How the Web is changing the traditional undergraduate education 'business model' of universities
- Comparison of CSE curricula across universities and countries
- Demographics of computer science - students, teachers, professionals, career trajectories

Many (Any) Other Topics!

- “Technology” aspect
 - Good project topic will mix in the Technology aspect
 - Technology + Business = Relevance
 - Technology + Society = Relevance

(No, this does not imply that Business = Society ...)
- See, e.g., Prof. Paturi’s 2005 project topics list
 - Online gambling
 - Artificial intelligence
 - Spyware
 - Clickstreams
 - P2P
 - Data clustering
 - Social networking
 - Privacy
 - Unsuccessful vs. successful internet business models

Ideas for Topics (real-time discussion)

- Spam / advertisements / social engineering (phishing)
- Whether Web2.0 is a bubble or not
 - How to bound / answer this? # startups founded or folded each year; amount of venture \$; usage of the websites; ... (assumes access to online research firms)
- How the political climate affects the engineering climate
 - E.g., misinformation, lobbyists, etc.
 - Regional (world geographies) vs. temporal/party affiliation (Dem / Rep)
 - Bounding, quantifying, etc. is a challenge
- Net neutrality – control / pricing of bandwidth
- Performance impacts of hardware vs. software
 - E.g., synergy between multicore architectures and the software that runs on these architectures
- IPv6
 - Implementation, infrastructure, timeline, eventual impacts...

Q & A

- Q1. What if all teams want the same project topic?
 - A1. (i) This won't really happen. (ii) First-come-first-served, no more than 3 teams on any given topic.
- Q2. How should we go about forming teams?
 - A1. (i) Make an on-line community at UCSD (cf. Math 20A). (ii) Facebook group.
- Q3. Can we / how should we reference other sources, e.g., a friend in Finland?
 - A1. Certainly, it's okay to go out to such sources. Just cite in a standard way. E.g., T. Huola, *interview*, (or, *personal communication*), October 20, 2007.

Next Meeting: Thursday, October 11

- October 11: Professor George Varghese, “Adding Value in the Networks Space”
 - “I will review the start of some of the companies in the networking space and how they added value. Examples include Cisco, Juniper, and Procket. I will also talk about some recent startups in the space. The emphasis will be both on the technical aspects (what idea did they have, a computer science question) and how they created value for shareholders (a business question).”
- You must check announcements on the class webpage – e.g., homework, readings, survey, etc.
- Question from student: How to generate PDF from MSWord? A. Will post on web.