PROJECT PART A

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EE461L

Summary

- Use the skills acquired in the class and labs to create a working web application or a working Android application
- Purpose:
  - Well, it's a big chunk of your grade…
  - Working on this project should be training on how to go about approaching a design project
  - The project should yield real **results**
    - Identifying a need
    - Designing a solution
    - Building a working prototype of this solution
    - Identifying key issues around taking prototype to a useful product

Project A Deliverables

- Proposal (max 6 pages, 11 pt font, including figures)

1. Project title
2. Executive abstract (50-200 words)
3. Team (4-5 students)
4. URL to repository, shared Google Docs
5. Description (see later slides)

- Presentation (PDF/PPT/Keynode): 6 slides ~10 minutes
  - Week of September 29

Description: Motivation

- What is the problem?
- What is your vision for solving the problem?
- What are your “silver bullets”?

Description: Feature Description

- Start with 2-4 user “stories”
- Formalize with UML use cases
- Mocks: use balsamiq (or Google docs, or Adobe Fireworks, or Viso, or something of that sort)

Description: Requirements

- Don’t overlook the non-functional requirements
  - Performance
    - E.g., response times, accuracy of results, etc.
  - Storage requirements
  - Cost per user for deployment

Description: Design Document

- **Architecture**: block diagram, flow charts, class diagram, database schema
- **Timeline**: key dates, effort required in number of hours, roles
- **APIs, services**: what can you exploit to get done fastest
- **Testing plan**: key functionality you will be testing for, what data will you need for testing? How will you get it?
- **Internationalization plan**: charset encodings to cultural issues
- **IP Issues**: what could you patent, could you be infringing

Description: Feasibility

- Things that may lead you to fail
  - Lack of familiarity with APIs
  - Unable to deliver on performance
  - Cost excessive
  - Existing projects
  - Too many features (prioritize)
  - Third party APIs/service may not be reliable

General Issues

- Don’t reinvent the wheel
  - Scheduled tasks → AppEngine cron, Quartz library
  - Build community reporting on Twitter/FB
- Get something that’s simple and working first
  - “Customer” feedback will likely lead to major changes
  - Avoid heavy-duty tools and frameworks
    - GWT: takes a long time, benefits are further out
  - **Use what you’re familiar with** (AppEngine vs. AWS)
- Think mashup: integrate Google search results with Twitter feed
- Have a learning plan: tutorials, strawman exercises

Useful APIs and Services

- HTML/CSS, HTML Forms, Java URL, Java Sockets, Android UI, Sqlite libraries
- Timcat, Java Jetty, GSON, Java Entities, jquery, opencv, Django, GWT, Quartz, htmlparser, Junit, iText, Java Runtime
- ImageMagick convert ffmpeg
- Facebook/Google single sign on, cloud storage, SMTL provider, SMS service

Notes

- You don’t have to touch on all of the aforementioned issues in your proposal or presentation
  - Think about what is important in your special case
- You don’t have to have a specific format to your proposal or presentation
  - Think about the clearest and most direct way to present your ideas
  - Don’t bore us with things that are not relevant
- It’s really important to understand the context
  - What apps are similar to yours?
  - What tools and frameworks will help you out? How will you use them?
  - What unknowns remain? It’s good to know this up front!

Technologies

- **Tools**: SVN/Git, Google Docs, Java, IDE, ANTLR (NLP), Junit, Selenium, Lucene

- **Lirbaries**: log4j URL, Servlet engine, HTML DOM Parser, JavaScript, UI libraries, AdWords, FBAds, Twitter, OpenSocial, GNIP

- **Services**: storage, search, computation

Samples

- http://utravel461l.appspot.com
- http://www.minesweeperduel.com/signin2.jsp
- http://courseez.com
- http://paintchat.info
- http://www.data-ee.com

- http://puzzleme461.appspot.com/
- codewithfriends.tk
- WhoHasItAll.com
- http://walletsave.herokuapp.com/

QUESTIONS?