Scalable Web Programming

CS193S - Jan Jannink - 1/21/10
Administrative Stuff

- First Assignment is due now
- What was hard, easy?
- Dealing with last minute technical difficulties
Weekly Syllabus

1. Scalability: *(Jan.)*
2. Agile Practices
3. *Ecology/Mashups* *
4. Browser/Client
5. Data/Server: *(Feb.)*
6. Security/Privacy
7. Analytics *
8. Cloud/Map-Reduce
9. Publish APIs: *(Mar.)* *
10. Future

* ASSIGNMENT DUE
Web Building Blocks

- Widget Hierarchy
  - static function - screensaver, clock
  - single source - headlines, stock ticker
  - configurable source - search/parameter based
  - composable - maps, visualizations
Mashup Fail

- MySpace codes
  - proving that most people are not designers
- Google + white pages
  - people rely on privacy by obscurity
- Birthdate to SSN hack
  - hard to predict future uses of data
Account DB cont’d

- For each identity server type
  - Guest ID
  - Guest Credential
- For typical visitors
  - Cookie ID
  - IP address
Normalizing Data

- Stats database
  - ad hoc queries, no predefined access patterns
  - design for change
- Active user state, Account / Profile database
  - predefined query patterns
  - optimize for simple table access
Identity on the Web

- Web transition from anonymity to identity
- googling self, plip, intellius, white pages
- social nets, memberships, email, IM, game IDs
- browser history, cookies, usernames
- Remarkably even ancestry is going online
Serialization

- XML
  - more prevalent
  - verbose
- JSON
  - more concise, readable
  - executable code, security issues
Google Maps Example

- First API was not an API
  - reverse engineered javascript
  - embraced by Google
- So immediately popular that it dominates APIs
  - first mover advantage
  - no quantum leaps in capabilities coming
Visualization

- Distributed pattern matching
  - Many Eyes
  - Gapminder
  - NameVoyager

- Graphing
  - Google Visualization API
Starts with Jan

JAN
Hit 'return' to see only JAN.
More Mashup APIs

- **Trips:**
  - EveryTrail API

- **Places:**
  - FourSquare API
  - Ranked Realtime
  - Topsy’s Otter API
Worth Checking Out

- EveryTrail, FourSquare, Topsy APIs
  - http://groups.google.com/group/foursquare-api/
  - http://code.google.com/p/otterapi/

- Many Eyes, Google Visualization
  - http://code.google.com/apis/visualization/
Project Challenges

- Make GWT app search engine accessible
  - Sitemaps
- Support advertising
  - iframe
- Inter-iframe communication
  - postmessage API
Q & A Topics

★ What next, now that we’ve covered the context
★ Mashup evolution
★ Evolution of anonymity on the web
Project ideas

- Degree Requirements checker
- Specification / Document claim verifier
- Wikipedia / Twitter mapper
- Web based Eclipse IDE