

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, pipl, 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

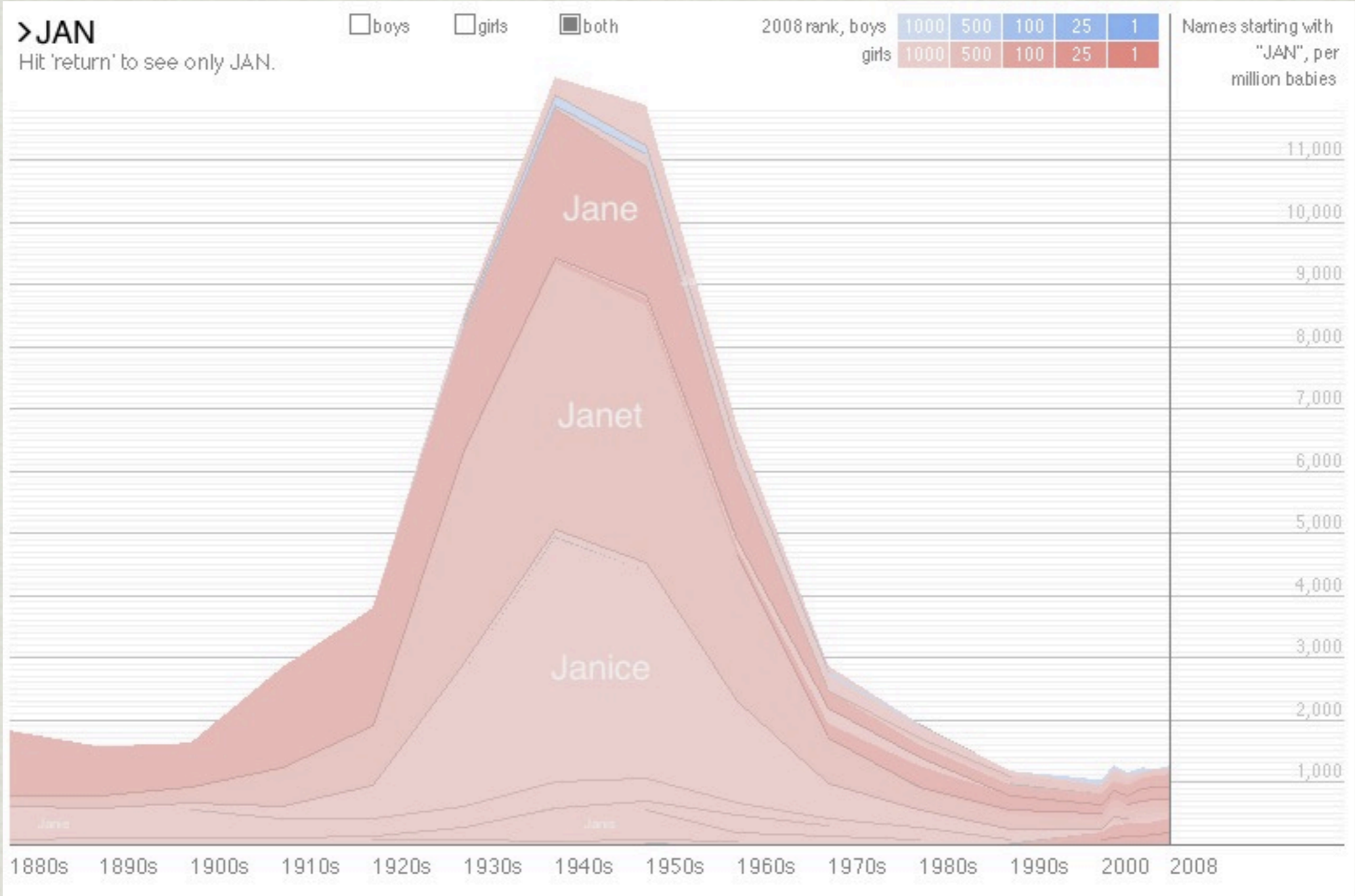
Google Maps Example

- * 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



More Mashup APIs

- ✱ Trips:

- ✱ EveryTrail API

- ✱ Places:

- ✱ FourSquare API

- ✱ Ranked Realtime

- ✱ Topsy's Otter API

Worth Checking Out

* EveryTrail, FourSquare, Topsy APIs

* http://devwiki.everytrail.com/index.php/Main_Page

* <http://groups.google.com/group/foursquare-api/>

* <http://code.google.com/p/otterapi/>

* Many Eyes, Google Visualization

* <http://manyeyes.alphaworks.ibm.com/manyeyes/>

* <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
- *
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