

No Schema for Science

(or Country for Old Men either)

Nitin Borwankar, Independent Consultant
twitter: @nitin nborwankar@gmail.com

Agenda

- Physical and Logical Models in Databases
- Case Studies
- Conclusions
- Data in Science project – volunteering

Background

- Academic - BS EE IITBombay, MS, PhDMath studies USC, LA
- Ingres - 1991
- Sybase - 1993
- Internet/Database/Web 1994-2005
- More Better Internet/Database/Web 2005-
 - tags, social data, user-table-self-joins
- CouchOne 2101-Jan2011

Detour

- Database
- Logical Layer – data model, access lang,..
- Physical Layer – indexes, partitions, performance

Detour (cont)

- Databases
- Logical Model – shape of the data in the domain of the user
- Physical Model – shape of the bits on disk

Current Discourse

• Physical Model

- Indexes, Performance, etc

This talk ...

- User Data

- Logical model

Case Study 1

- Global 5 Pharma Company
- Research on Cell Lines
- Multiple researchers - cutting edge research
- Oracle admin and team too rigid
- Data ends up in excel

Data in spreadsheet

- excel

Case Study 2

- Leading Web 2.0 job site
- User data in
 - Cookies
 - Relational database
 - Lucene
- No unified view of what a user wants

Other similar

- BibTex citation databases
- Automobile service stations
 - repair data, manuals
- Student Admission records in K-12 process
 - multiple different formats and forms

Google Contacts

- extending address record
- adding custom types

Overall observation

- Need flexibility in data foundation for anything other than accounting data
- Need adaptive schemas
- Need typeless or loosely typed systems
- Need ability to aggregate-disaggregate = denormalize-normalize at very low cost

Case Study 3

- Pacific Northwest – Killer Whales
- Whale Museum
- but first a segue

Circa Mar 2010

- Killer Whale incident
- Trip to Davis
- Research
- Insights
- Data

Field Trip



Biotelemetry Laboratory

Department of Wildlife, Fish, & Conservation Biology

University of California, Davis

Researcher Contact

Personnel: Giles

Deborah A. Giles

Position: Graduate Student Researcher

Campus Address:
1354 Academic Surge
Department of Wildlife, Fish, & Conservation Biology

Phone: (916) 531-1516

Email: dagiles@ucdavis.edu

Degrees:

Present: University of California, Davis – Doctoral student, [Geography Graduate Group](#)

2007: University of California, Davis - M.A. Geography

2004: University of California, Davis - B.A. Philosophy

2000: Sacramento City College - A.A. Hons. Social Science

Honors and Awards:

National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Research Contract to study biogeography of Southern Resident killer whale behavior, 2007-2008

Henry A. Jastro and Peter J. Shields Research Fellowship Award, 2006-2008

UC Davis Geography Graduate Group Research Grant: Student Support Awards, 2008-2005

Office of Graduate Studies, Travel Award, to present research at AAG annual conference, 2007



Encounter

The Seattle Times
Winner of a 2010 Pulitzer Prize

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Boy's orca encounter short, scary

Whale researchers say it was highly unusual for a killer whale to bump a 12-year-old boy splashing in shallow water near Ketchikan. Ellis Miller found himself...

By **The Associated Press**

KETCHIKAN, Alaska — Whale researchers say it was highly unusual for a killer whale to bump a 12-year-old boy splashing in shallow water near Ketchikan.

Species of Killer Whales

- Resident vs
- Transient

Data for Science Project

- same problem
- volunteers needed
- contact me to volunteer
- nborwankar@gmail.com
- @nitin on Twitter

Contact

- Nitin Borwankar
- twitter:@nitin
- nborwankar@gmail.com