

Web 2.0 meets Databases 2.0

Alexandros Labrinidis

Advanced Data Management Technologies Laboratory
Department of Computer Science
University of Pittsburgh



Databases use Relations

ID	Make	Model	Year
1	Toyota	Corolla	1988
2	Volkswagen	Passat	2004
3	Ford	Focus	2002
5	Ford	Mustang	2008
6	BMW	325xi	2003

- Relational model (proposed in the 70s)
- All data are stored in tables
- Relationships between data also stored in table form
- Operations on tables return tables

What if we want to make changes?

ID	Make	Model	Year
1	Toyota	Corolla	1988
2	Volkswagen	Passat	2004
3	Ford	Focus	2002
5	Ford	Mustang	2008
6	BMW	325xi	2003

What if we want to make changes?

ID	Make	Model	Year	Made in
1	Toyota	Corolla	1988	Japan
2	Volkswagen	Passat	2004	Germany
3	Ford	Focus	2002	USA
5	Ford	Mustang	2008	USA
6	BMW	325xi	2003	Germany

What if we want to make changes?

ID	Make	Model	Year	Made in	Color
1	Toyota	Corolla	1988	Japan	Silver
2	Volkswagen	Passat	2004	Germany	
3	Ford	Focus	2002	USA	
5	Ford	Mustang	2008	USA	Blue
6	BMW	325xi	2003	Germany	

Answer: Semi-structured data (XML)

```
<cars>
  <car ID="1">
    <make>Toyota</make>
    <model>Corolla</model>
    <year>1988</year>
  </car>
  <car ID="2">
    <make>Volkswagen</make>
    <model>Passat</model>
    <year>2004</year>
  </car>
  ...
</cars>
```

```
<cars>
  <car ID="1">
    <make>Toyota</make>
    <model>Corolla</model>
    <year>1988</year>
    <madein>Japan</madein>
  </car>
  <car ID="2">
    <make>Volkswagen</make>
    <model>Passat</model>
    <year>2004</year>
    <madein>Germany</madein>
  </car>
  ...
</cars>
```

```
<cars>
  <car ID="1">
    <make>Toyota</make>
    <model>Corolla</model>
    <year>1988</year>
    <madein>Japan</madein>
    <color>Silver</color>
  </car>
  <car ID="2">
    <make>Volkswagen</make>
    <model>Passat</model>
    <year>2004</year>
    <madein>Germany</madein>
  </car>
  ...
</cars>
```

XML Example: RSS Feed

- RSS = Real Simple Syndication
- Simple XML format STANDARD
- **Example:**
 - <http://db.cs.pitt.edu>
 - <http://www.google.com>
(using iGoogle, with <http://db.cs.pitt.edu/group/feed/admt>)

XML as enabling technology

- **Yahoo Pipes:** <http://pipes.yahoo.com>
(build simple pipe to process RSS feeds)
- **Mashup:** combine data from different sources
 - <http://www.rockstarapps.com/samples/map-compare/>
 - <http://www.housingmaps.com/>
 - <http://www.zillow.com/>
 - http://www.mibazaar.com/education/medical_school.html

Let's talk about Blogs

A blog (an abridgment of the term web log) is a website, usually maintained by an individual, with regular entries of commentary, descriptions of events, or other material such as graphics or video. Entries are commonly displayed in reverse chronological order. "Blog" can also be used as a verb, meaning to maintain or add content to a blog.

<http://en.wikipedia.org/wiki/Blog>

Example: <http://www.google.com>

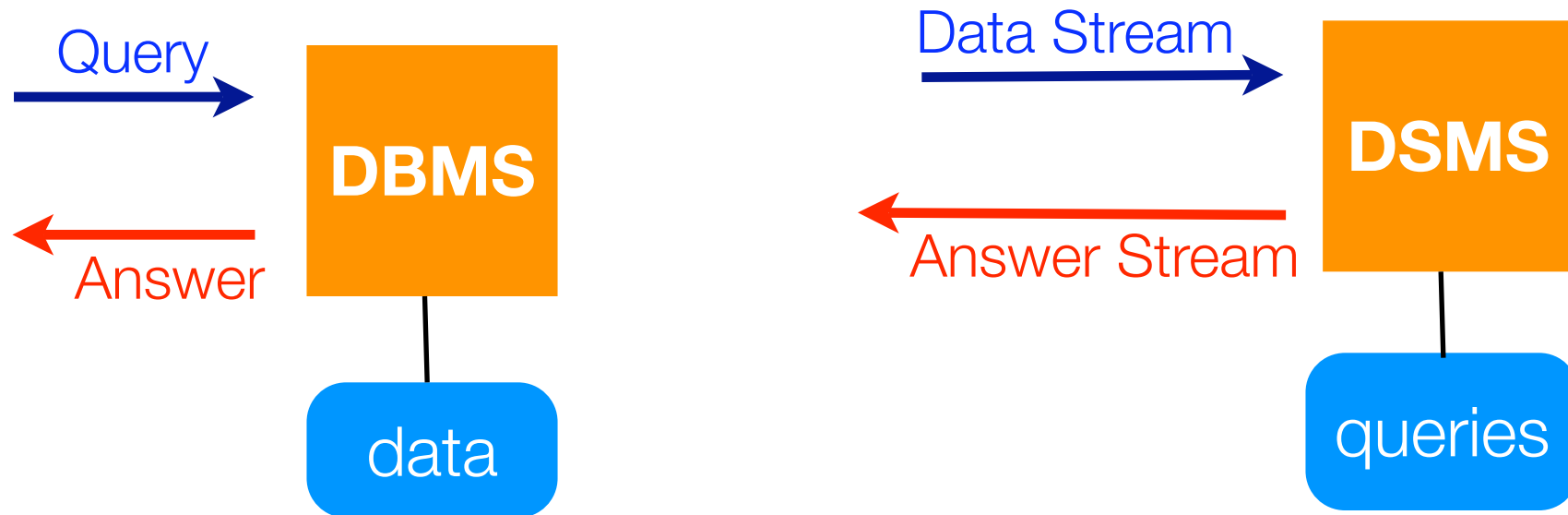
(using iGoogle, with <http://behind-the-enemy-lines.blogspot.com/>)

Analysis Tool: <http://www.blogscope.net>

What happens when you have lots of updates?

- <http://www.youtube.com/watch?v=uWvWcGIHPPQ>

Data Stream Management Systems



Examples: google alerts, orbitz traveler alerts

Questions?

Dr. Alexandros Labrinidis

Advanced Data Management Technologies Laboratory
Department of Computer Science, University of Pittsburgh



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