

Microsoft®



Microsoft®

Research Faculty Summit 2012

ADVANCING THE STATE OF THE ART



The End of Applications

David Karger

MIT



Summary

One standard data model is coming

Google/Microsoft/Facebook knowledge graphs

Schema.org

Big benefits for end-user information management

Power to author (not program) my own information management tools

Over whatever data I care about

More control of my data

Loss of power by content carriers (disintermediation)



Personal Information Management

Hard to define

Information I work with "for me" (but may encompass my work roles)

Casual (but some people take it very seriously)

Unsophisticated users (except for those who are very sophisticated)

Key: personalization aspect

Everyone wants to work with own information selection

Organize, visualize, interact with information their own way

Computers' main contribution: obstacle!

Force us to manage info their way

Square Pegs in (Many) Round Holes

Applications force us to fragment our information

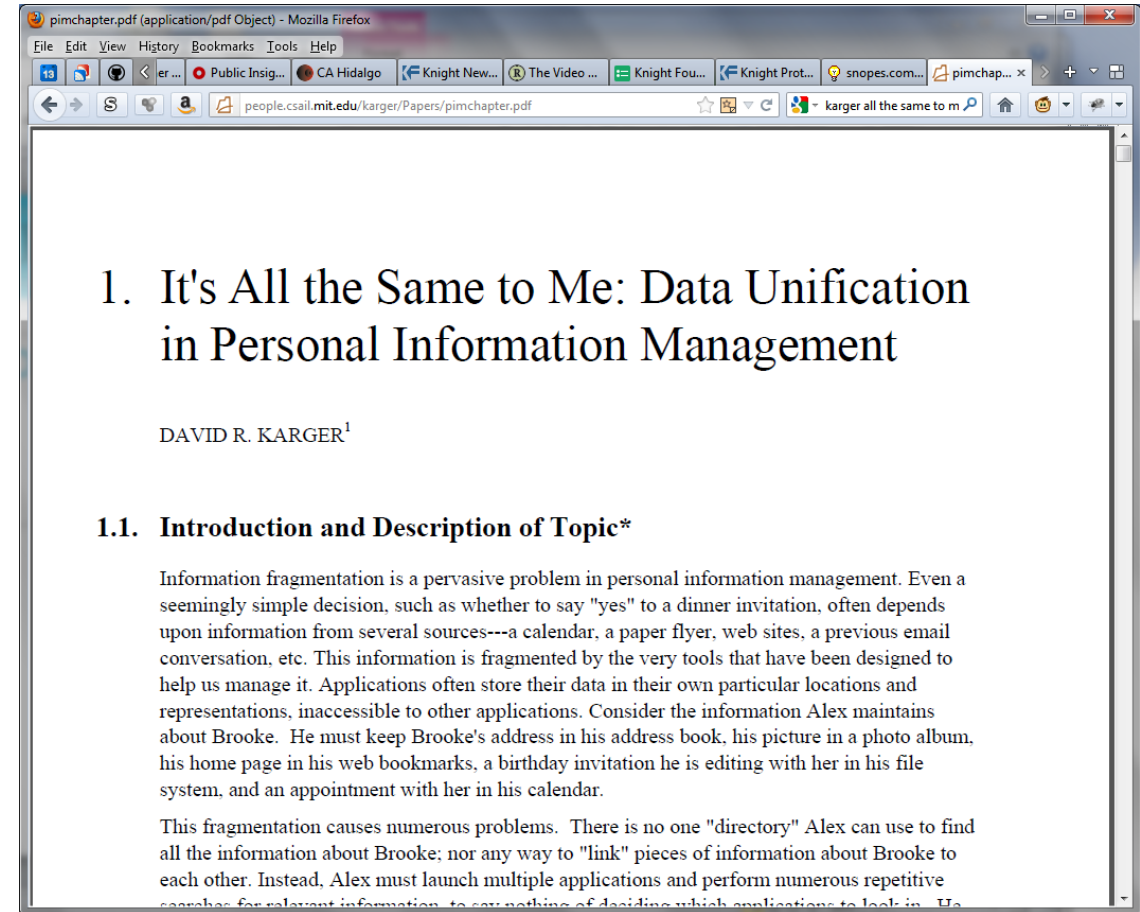
Schemas/visualizations are set by developers
Can't store, view, or connect what we want

Long-recognized problem

Desire for unified, task-oriented interfaces
Very little progress

Data renaissance will solve it

Everyone shapes own applications for own tasks
Gathering necessary data at will



Jones, Teevan (Eds.) PIM 2007



A Data Renaissance: Dark Ages → Modern

Data Baronies

Companies create rich structured data sites
People only create text --- blogs, wikis

Data Fortresses

Domain-specific sites/applications
Rare to work across application boundaries

Data Serfs

Users author content
Companies hold it tight and monetize it

Data Democracy

Everyone authors rich structured data
No programming/database/UI expertise needed

Free Movement

Flexible interfaces gather all data needed for a task
No boundaries, just overlapping data assemblies

Data Freeholders

User content all in personal repositories
User permits access by companies/services

Today's Data Baronies

The screenshot shows the Epicurious website search results for the keyword 'fish'. The page features a navigation bar with 'Recipes & Menus', 'Articles & Guides', and 'Community'. The search results are displayed in a grid format, listing various fish recipes such as 'Fish Tacos', 'Recolor Fish with Mango and Shrimp', and 'Traditional Fish Stock'. A sidebar on the right offers filters for 'main ingredient', 'meal/cuisine', 'dietary consideration', 'type', 'holiday/celebration', 'preparation method', and 'in season'. The bottom of the page shows 'recent searches'.

The screenshot displays LinkedIn search results for the keyword 'computer'. It shows a list of 2,066,213 results, sorted by relevance. The top results include profiles for Peter Froehlich, Bob Sloan, and Alex Groce, all of whom are associated with computer science or engineering roles at various universities. A 'Modify Your Search' sidebar on the right allows users to refine their search by relationship, keywords, and other criteria.

The screenshot shows YouTube search results for 'Microsoft E3 2012'. The page features a navigation bar with 'Home', 'Movies', 'Upload', 'Create Account', and 'Sign In'. The search results are sorted by relevance and include several videos, such as 'Pella Windows & Doors - Need new windows/patio doors?', 'The NeoCube - Build your own world.', and 'Microsoft E3 2012 Press Conference'. A 'Windows' section at the bottom highlights the official YouTube channel for Microsoft Windows.

The screenshot displays Flickr search results for 'South Uist'. The page shows a grid of photos from various users, including 'From Douglas', 'From David', and 'From Hildebrand'. A prominent photo of a sunset over the ocean is featured. The right sidebar includes a 'South Uist from Barra, a very calm day Summer 07' advertisement and a list of photographers who have tagged their photos with 'South Uist'.

The screenshot shows Barnes & Noble search results for the keyword 'apples'. The page features a navigation bar with 'Books', 'NOOK Books', 'NOOK | Textbooks | Newsstand | Teens | Kids | Toys & Games | Home & Gifts | DVDs | Music | Gift Cards'. The search results are displayed in a grid format, listing various books and audiobooks related to apples, such as 'The Great Mathematics with Apples', 'Apple: A History', and 'Apples: A History'. A sidebar on the left offers filters for 'Price Range', 'Format', 'Hardcover', 'Paperback', 'NOOK Book', 'Audiobook', 'Large Print', and 'Picture Books'.

The screenshot displays CNET reviews search results for the keyword 'phone'. The page shows 1,323 product results for 'phone' in Cell Phones. The top result is the 'T-Mobile G1 (b)', which is described as the most popular phone reviewed on CNET. The page includes a 'Narrow search' section with filters for 'Cell Phones', 'By service provider', and 'By price'. A 'Compare SE' button is visible at the top right.

The screenshot shows Ravelry search results for the keyword 'sweater'. The page features a navigation bar with 'search', 'patterns', 'yarns', 'people', 'forums', 'groups', and 'shop'. The search results are displayed in a grid format, listing various sweater patterns, such as 'SWEATER', 'Sweater: Whisked by Bea Freeman Ent.', and 'Dog Sweater Tutorial by A Dog In A Sweater'. A sidebar on the left offers filters for 'Has photo', 'Craft', and 'Availability'.

The screenshot displays HousingMaps search results for the keyword 'rent'. The page shows a map of Seattle with various rental listings marked by red pins. A prominent listing for '1,800 - 3rd' is featured, with details such as '2,320 sq ft - Spacious 3 Bedroom Renton Split Level Home, Great Neighborhood!'. The right sidebar includes a list of rental listings with details such as 'City', 'Price', 'Rooms', and 'Pictures'.



Most Sites Are Same-Old CRUD

All provide same interactions

CRUD: Create, Read, Update, Delete information
Over some sort of relational data model

All draw from same visualization/interaction palette

View a collection of items (list, thumbnails, map)
Presented in a uniform template
With faceted browsing and text search to navigate
And forms to edit

Many sites are just CRUD for a specific domain

Flickr (photos), Youtube (movies), Epicurious (recipes), Ravelry (Yarn), B&N (books)....

Data

Items (Recipes)

Each has properties

Title

Source magazine

Publication date

Rating

Ingredients

Can imagine as spreadsheet

One item per row

Columns for properties

The screenshot shows the Epicurious website interface. At the top, the 'epicurios' logo is displayed in white on a green background. Navigation links include 'epishop', 'video', and 'forums'. A menu bar contains 'RECIPES', 'FEATURES', 'COOKING', 'DRINKING', 'RESTAURANTS', and 'MEMBERS'. Below this, a secondary navigation bar lists 'recipe collections', 'slideshows', 'forums', and 'find a recipe'. The main content area is titled 'browse' and includes links for 'advanced search', 'browse all recipes', and 'search our drinks database'. The current filter is 'browsing by: Vietnamese'. A 'refine by' section lists various categories such as 'Main Ingredient', 'Course', 'Dish', 'Season/Occasion', 'Recipe Category', 'Preparation', and 'Healthy Options'. A grid of ingredient counts is shown, including Beans (1), Fruits (7), Mushrooms (4), Pork (5), Soy (3), Beef (13), Garlic (6), Nuts (3), Potatoes (1), Tomatoes (1), Chicken (8), Ginger (2), Onions (4), Poultry (7), Vegetables (8), Citrus (6), Greens (7), Pasta (13), Rice (6), Fish (5), Herbs (10), Peppers (6), and Shellfish (11). Below the grid, it states '55 recipes found for: Vietnamese' and provides a 'sort results by' dropdown menu set to 'Best Match'. The recipe list includes columns for 'rating', 'recipe name', and 'at a glance'. Four recipes are visible: 'HANOI TURMERIC GRILLED FISH WITH DILL AND ONION' (Epicurious, October 2006), 'GREEN PAPAYA SALAD WITH BEEF AND LIVER JERKY' (Epicurious, October 2006), 'SHAKING BEEF' (Epicurious, October 2006), and 'HUE NOODLE SOUP' (Bon Appétit, January 2006). The page ends with a 'Done' button.

Views

Show a collection

Sortable list (here)

Bar chart

Map

Thumbnail set

Bound to properties

Sort by property?

Plot map using which property?

HTML:

```
<view type="list" sort="price"/>
```

The screenshot shows the Epicurious website interface. At the top, the logo "epicurios" is displayed in white on a green background. Navigation links include "epishop", "video", "forums", "RECIPES", "FEATURES", "COOKING", "DRINKING", "RESTAURANTS", and "MEMBERS". Below the navigation, there are links for "recipe collections", "slideshows", "forums", and "find a recipe".

The main content area is titled "browse" and shows "browsing by: Vietnamese". Below this, there are filters for "refine by:" including "Main Ingredient", "Course", "Dish", "Season/Occasion", "Recipe Category", "Preparation", and "Healthy Options".

A grid of ingredient counts is displayed:

Beans (1)	Fruits (7)	Mushrooms (4)	Pork (5)	Soy (3)
Beef (13)	Garlic (6)	Nuts (3)	Potatoes (1)	Tomatoes (1)
Chicken (8)	Ginger (2)	Onions (4)	Poultry (7)	Vegetables (8)
Citrus (6)	Greens (7)	Pasta (13)	Rice (6)	
Fish (5)	Herbs (10)	Peppers (6)	Shellfish (11)	

Below the filters, a search result summary shows "55 recipes found for: Vietnamese" with a "sort results by" dropdown menu set to "Best Match". The results are displayed in a list view with columns for "rating", "recipe name", and "at a glance".

rating	recipe name	at a glance
🍴🍴🍴	HANOI TURMERIC GRILLED FISH WITH DILL AND ONION Epicurious, October 2006	
	GREEN PAPAYA SALAD WITH BEEF AND LIVER JERKY Epicurious, October 2006	🕒
🍴🍴🍴	SHAKING BEEF Epicurious, October 2006	
🍴🍴🍴	HUE NOODLE SOUP Bon Appétit, January 2006	

Templates

Format per item

HTML with "fill in the blanks" from data

HTML:

```
<template>
  <div> <b> <span content="title"/> </b> </div>
  <div> <span content="magazine" />
    <span content="date"/>
  </div>
</template>
```

The screenshot shows the Epicurious website interface. At the top, the logo 'epicurious' is displayed in white on a green background. Navigation links include 'epishop', 'video', 'forums', 'RECIPES', 'FEATURES', 'COOKING', 'DRINKING', 'RESTAURANTS', and 'MEMBERS'. Below the navigation, there are links for 'recipe collections', 'slideshows', 'forums', and 'find a recipe'. The main content area is titled 'browse' and shows 'browsing by: Vietnamese'. A 'refine by' section lists various filters like 'Main Ingredient', 'Course', 'Dish', etc. A grid of ingredient counts is shown, including Beans (1), Beef (13), Chicken (8), Citrus (6), Fish (5), Fruits (7), Garlic (6), Ginger (2), Greens (7), Herbs (10), Mushrooms (4), Nuts (3), Onions (4), Pasta (13), Peppers (6), Pork (5), Potatoes (1), Poultry (7), Rice (6), Shellfish (11), Soy (3), Tomatoes (1), and Vegetables (8). Below this, it states '55 recipes found for: Vietnamese' and 'sort results by Best Match'. A list of recipes follows, with the first one, 'HANOI TURMERIC GRILLED FISH WITH DILL AND ONION', highlighted in yellow. Other recipes include 'GREEN PAPAYA SALAD WITH BEEF AND LIVER JERKY', 'SHAKING BEEF', and 'HUE NOODLE SOUP'. The page ends with a 'Done' button.

Facets (& Text Search)

Way to filter a collection

Specify a property

E.g. ingredient

User clicks to pick

Restrict collection to matching items

HTML

```
<facet type="list" expression="ingredient"/>
```

epicuriously
epishop • video • forums
RECIPES FEATURES COOKING DRINKING RESTAURANTS MEMBERS
recipe collections • slideshows • forums • find a recipe

advanced search
browse all recipes
search our drinks database

browse

browsing by: Vietnamese

refine by: Main Ingredient | Course | Dish | Season/Occasion | Recipe Category | Preparation | Healthy Options

Beans (1)	Fruits (7)	Mushrooms (4)	Pork (5)	Soy (3)
Beef (13)	Garlic (6)	Nuts (3)	Potatoes (1)	Tomatoes (1)
Chicken (8)	Ginger (2)	Onions (4)	Poultry (7)	Vegetables (8)
Citrus (6)	Greens (7)	Pasta (13)	Rice (6)	
Fish (5)	Herbs (10)	Peppers (6)	Shellfish (11)	

55 recipes found for: Vietnamese

sort results by
Best Match

rating	recipe name	at a glance
	HANOI TURMERIC GRILLED FISH WITH DILL AND ONION Epicurious, October 2006	
	GREEN PAPAYA SALAD WITH BEEF AND LIVER JERKY Epicurious, October 2006	
	SHAKING BEEF Epicurious, October 2006	
	HUE NOODLE SOUP Bon Appétit, January 2006	

Done



A Very Simple Language

Data

E.g. spreadsheet

Rows are items, columns are properties

Views

Ways of looking at collections of items

Lists, Thumbnails, Maps, Scatter plots

Specify which properties determine layout

Templates

Describe how to display a single item

What properties should be shown where

Facets

For filtering collection

By lists, numeric ranges, text search

Specify filtering property

Ebay

The screenshot shows the eBay homepage with search results for "bicycle". The browser window title is "bicycle, great deals on Sporting Goods, Collectibles on eBay! - Mozilla Firefox". The URL is "http://shop.ebay.com/i.html?_trkparms=65%253A1%257C66%253A2%257C39%". The search bar contains "bicycle" and the results show "31,516 results found for bicycle". A "Sort by" dropdown menu is open, showing options like "Best Match", "Time: ending soonest", "Price + Shipping: lowest first", etc. The "List View" is selected. The "Refine search" section shows categories like "Outdoor Sports (19,114)", "Wholesale Lots (171)", "Exercise & Fitness (107)", "Other (117)", "Collectibles (4,804)", "Transportation (3,763)", "Paper (288)", "Fantasy, Mythical & Magic (186)", "Photographic Images (101)", "Clothing, Shoes & Accessories (1,783)", "Men's Clothing (1,069)", "Unisex Clothing, Shoes & Accs (361)", and "Women's Clothing (141)". The "Featured Items" section includes "AOSOM 2IN1 DOUBLE BABY BICYCLE BIKE TRAILER/STROLLER" and "EIGHTHINCH SCRAMBLER V2 FIXED GEAR TRACK BIKE BICYCLE!". The "Templated items" section shows "1953 Wheaties Cereal West Virginia Bicycle License Plat" with 1 bid for \$0.99.

Text search

Sort by properties

List View

Faceted browsing

Templated items

HousingMaps

For Rent For Sale Rooms Sublets

Powered by [craigslist](#) and [Google Maps](#)
(this site is in no way affiliated with craigslist or Google)

City: Boston Price: \$1500 - \$2000 Hide Filters Refresh Link

Keywords: Rooms: Any Pictures Dogs Cats

pics	price	bd	description	city	date
	\$1500		Pristine Two Bedroom - Steps away from Tufts Univ!	Somerville	10/07
	\$1900	3bd	Free Rent* 3 BR Apartment Huron Village	Cambridge	10/07
	\$1550	2bd	2ba - "Reduced Price" Brand New Boston Condo	Dorchester	10/07
	\$1836	2bd	2x2 + Office W/D Included, Bay Window Free Rent!	Canton	10/07
	\$1865	1bd	Distinctive Apartment Living is now in Medford!	Medford	10/07
	\$1750	1bd	1 Bedroom Apartment Available	Boston	10/07
	\$1500	1bd	Furnished One Bedroom In The Heart Of Boston Available November 1ST!	Boston	10/07
	\$1700		Luxury one bedroom loft downtown, rooftop pool, fitness center	Boston	10/07
	\$1995	3bd	No Bank Qualify! Rent to Own, 3 Bed / 2.5 Bath House	Lynn	10/07
	\$1799	2bd	Luxury Apartments close to Commuter Boat Available	Hingham	10/07
	\$1800	3bd	3/4 bedroom in south quincy	Quincy	10/07
	\$1600	3bd	Lg. 3 BR in highly sought after neighborhood	Malden	10/07
	\$1500	2bd	Gracious Two Bedroom Townhouse	North Chelm:	10/07
	\$1760	1bd	1 bedroom - 3rd floor with fireplace, 800 sq ft! Luxury!	Burlington	10/07
	\$1920	2bd	Close Out Specials! Luxury 1&2 bedrooms! 1-2 months free!	Burlington	10/07
	\$1500	3bd	3 Bedroom apartment available in Grove Hall	Boston	10/07
	\$1650	1bd	Charming Apartment w/ Many Amenities & Parking	Boston	10/07
	\$1650	2bd	Water front apartment available	Quincy	10/07
	\$1595		Modern Studio-ht,hw, a/c incl! Parking available. On Red & Green Lines!	Cambridge	10/07

Text search

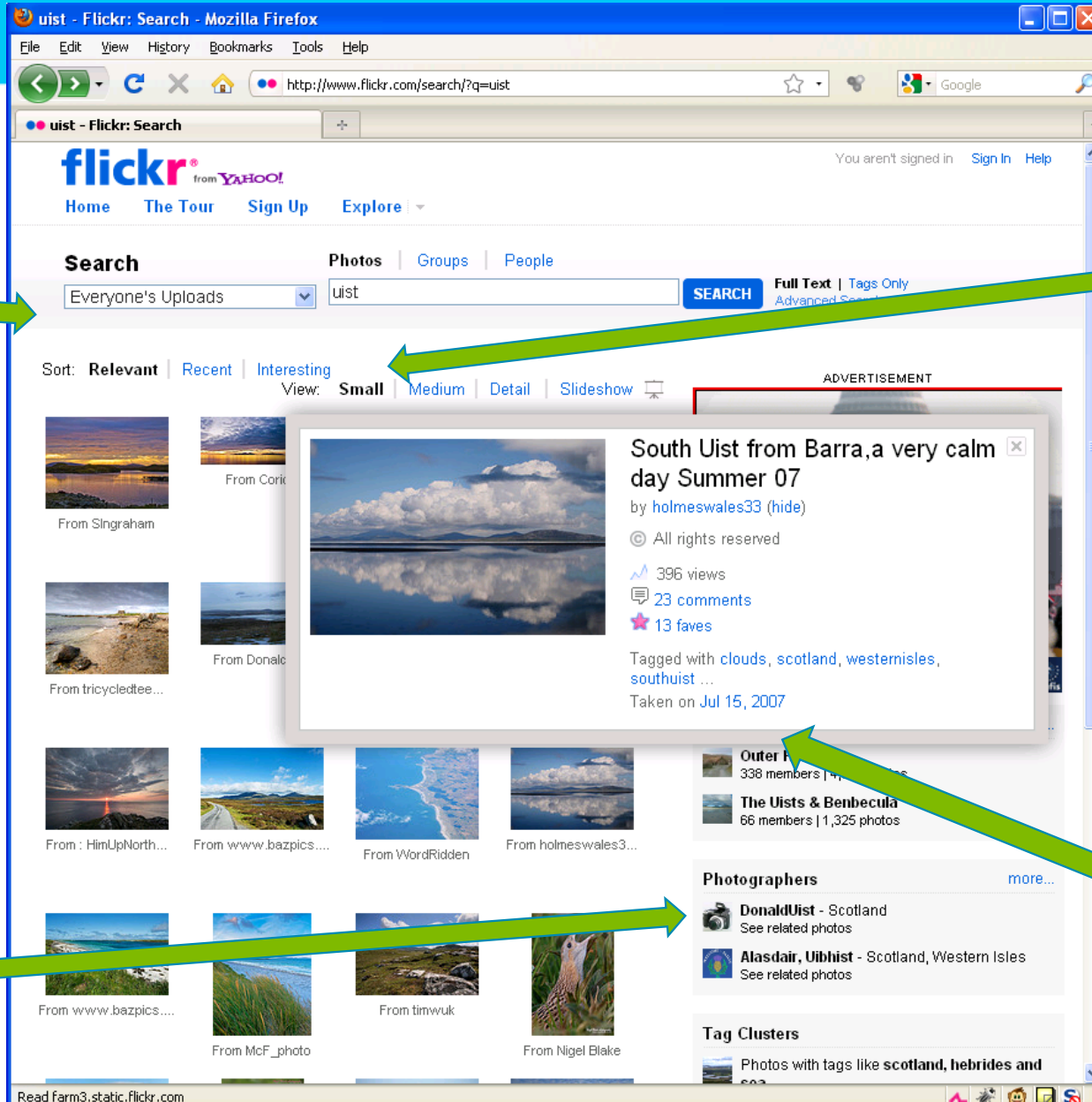
Sort by properties

Map View

Faceted browsing

Templated items

Flickr



Text search

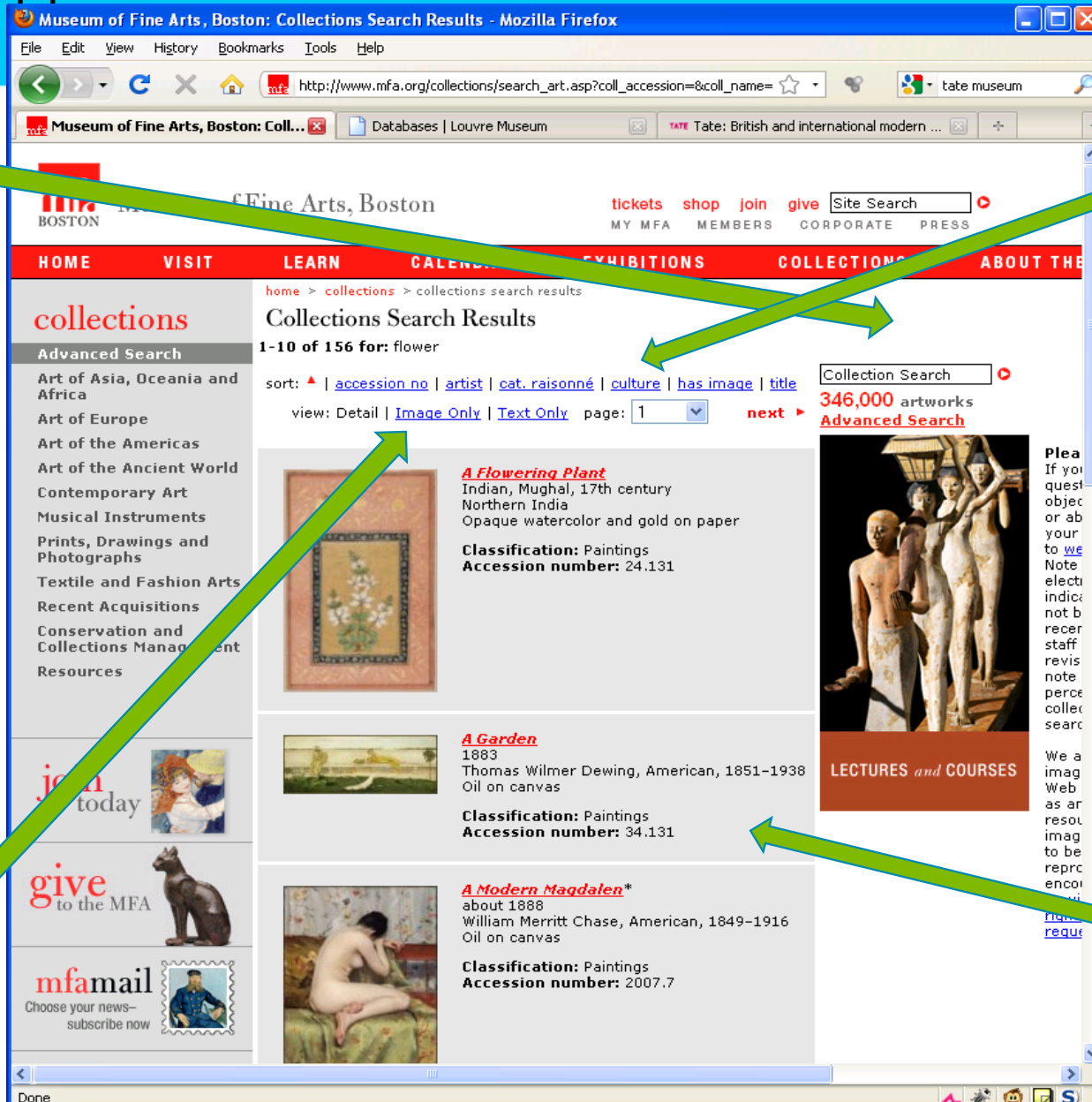
Sort by properties

Thumbnail View

Faceted browsing

Templated items

Museum



Text search

Sort by properties

List View

Faceted browsing

Templated items



Putting End Users in Charge

Over a common data model

Identify common visualization elements

Define new html tags describing them

End users author (not program) these tags

Users personalize applications to their tasks/data

Developers no longer involved

Could Users Author This?

Already doing so in spreadsheets

The application of choice when there is no application

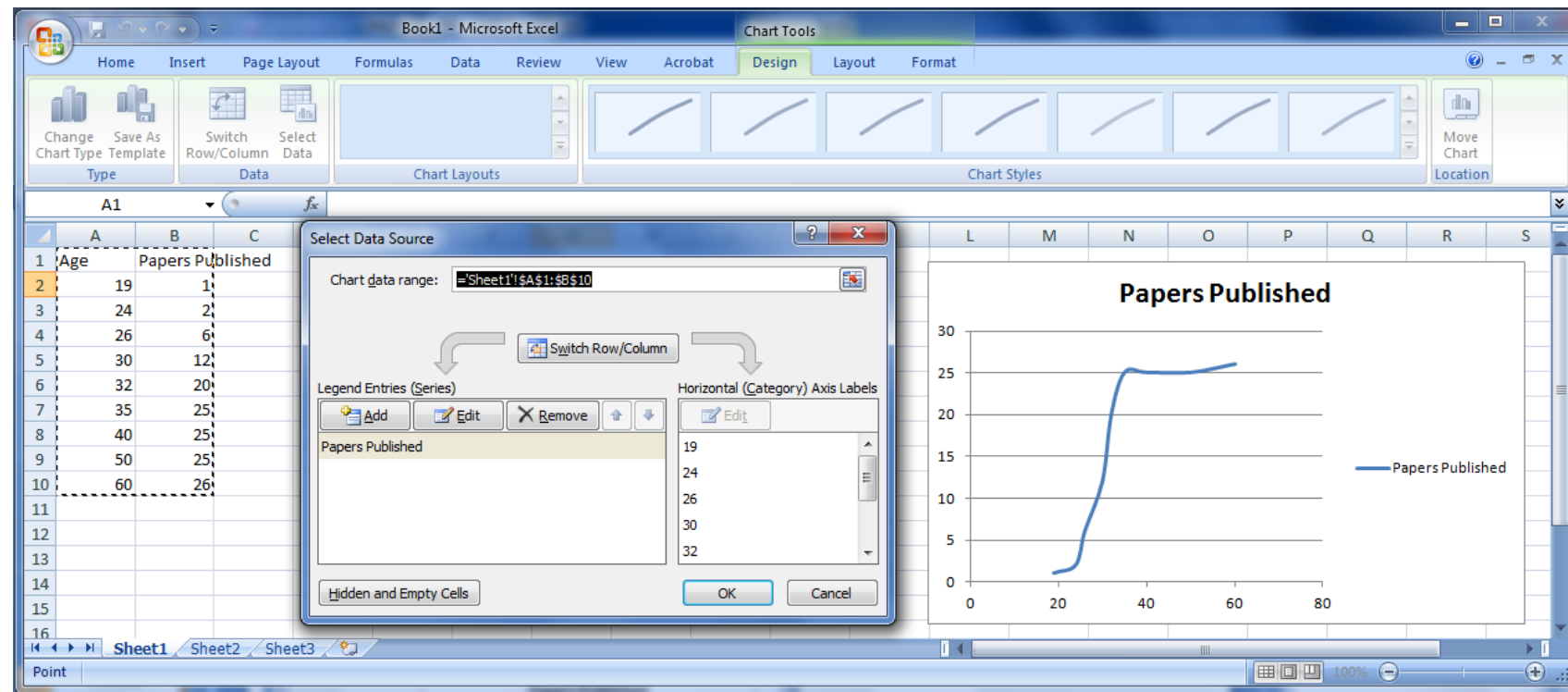
Write some data (spreadsheet columns)

Choose a view from a collection of possible charts

Associate with data columns

Style as you like

Web equivalent?



In HTML?

Image tags

Commonplace

Any user expects to be able to embed in their documents

Built in

All editing tools support
Because it just involves placing a tag in the document

The screenshot shows the Epicurious website interface. At the top, there's a browser window with the URL 'http://www.epicurious.com'. The website header features the 'epicurious' logo and navigation links for 'epishop', 'video', and 'forums'. A search bar is present with a 'GO' button and options for 'advanced search' and 'browse'. Below the header, there's a 'browse' section with a filter for 'Vietnamese' and a list of ingredients with their respective counts: Beans (1), Beef (13), Chicken (8), Citrus (6), Fish (5), Fruits (7), Garlic (6), Ginger (2), Greens (7), Herbs (10), Mushrooms (4), Nuts (3), Onions (4), Pasta (13), Peppers (6), Pork (5), Potatoes (1), Poultry (7), Rice (6), Shellfish (11), Soy (3), Tomatoes (1), and Vegetables (8). The main content area displays a list of recipes found for 'Vietnamese', sorted by 'Best Match'. The first two recipes are 'HANOI TURMERIC GRILLED FISH WITH DILL AND ONION' and 'GREEN PAPAYA SALAD WITH BEEF AND LIVER JERKY'. A 'Best Buy' advertisement is overlaid on the bottom right of the page, featuring a man in a blue shirt and a refrigerator.



Proof of Concept: Exhibit

An interactive web site from 2 static files

Author HTML + data-HTML to describe presentation

Link to a data file: spreadsheet, CSV, XML, JSON...

Exhibit JavaScript library

Interprets new data-HTML tags

Implements widgets the tags specify on the data

All runs in user's browser

Nothing to install or configure

Deployed in 2007

1800 sites, 1M hits

Examples

Department directory

MIT

The screenshot shows the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL) website. The page is titled "PRINCIPAL INVESTIGATORS" and displays a grid of 10 portraits of faculty members. Each portrait is accompanied by the person's name, office location, phone number, and email address. The website includes a navigation menu with options like "ABOUT CSAIL", "RESEARCH", "NEWS + EVENTS", "RESOURCES", and "PEOPLE". A sidebar on the left provides filters for "DIRECTORATES" and "POSITIONS".

MIT COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE LABORATORY

CSAIL YOUTUBE | INDUSTRY AFFILIATES | C

ABOUT CSAIL RESEARCH NEWS + EVENTS RESOURCES PEOPLE

PEOPLE

Principal Investigators

All Members

DIRECTORATES

- 11 AI
- 22 Systems
- 73 unknown

POSITIONS

- 2 Adjunct Professor
- 7 Assistant Professor
- 17 Associate Professor
- 1 Chancellor
- 1 Co-Director
- 1 Delta Electronics Professor of EECS
- 1 Director
- 3 Institute Professor
- 1 Principal Research Associate
- 9 Principal Research Scientist











Home

PRINCIPAL INVESTIGATORS

View the [Printer Friendly Version](#) (PDF Format)

106 Items

sorted by: name; then by... grouped as sorted

 Scott Aaronson Office: 32-G638 +1 (617) 324-8356 aaronson@csail.mit.edu	 Hal Abelson Office: 32-386H +1 (617) 253-5856 hal@mit.edu	 Edward Adelson Office: 32-D424 +1 (617) 258-9501 adelson@csail.mit.edu	 Anant Agarwal Office: 32-G782 +1 (617) 253-1448 agarwal@csail.mit.edu	 Saman Amarasinghe Office: 32-G744 +1 (617) 253-8879 saman@csail.mit.edu
 Arvind Office: 32-G866 +1 (617) 253-8090 arvind@csail.mit.edu	 Hari Balakrishnan Office: 32-G940 +1 (617) 253-8713 hari@csail.mit.edu	 Regina Barzilay Office: 32-G468 +1 (617) 258-5706 regina@csail.mit.edu	 Bonnie Berger Office: 32-G574 +1 (617) 253-1827 bab@csail.mit.edu	 Tim Berners-Lee Office: 32-G524 +1 (617) 253-5702 timbl@w3.org

Examples

Unsafe bridges

Minneapolis Star Tribune

Firefox

StarTribu... x Florida's do... Foreclosure ... Teacher Bo... seMissouria... Factory Port... Publication... SimileResou... Data

Friday February 24, 2012

StarTribune

READY TO SAVE
50% off tickets to Israel's Miserables star Dudu Fi

News Local Sports Business Politics Opinion Lifestyle Entertainment Obituaries Classifieds Autos Housing Jobs

Local | Nation | World | Investigators | Weather | Obituaries

Auto loan rates as low as 1.99% APR* for 36 months. Buy new or used, or refinance your current auto loan.

*APR = Annual Percentage Rate. Click here for full disclosure.

EnduraFinancial.com | 612.951.1500

Endura financial FEDERAL CREDIT UNION

infoCenter

Bridge watch: Rating Minnesota's bridges

More than 300 Minnesota bridges receive special scrutiny because of structural deficiencies, outdated design features that make them functionally obsolete or use of gusset plate connectors similar to those on the Interstate 35W bridge that collapsed. Not all of these bridges rank low on the federal government's 100-point rating scale, however. Generally, a rating below 80 means the bridge needs some rehabilitation, while those of 50 or less may need to be replaced. The map includes main highway bridges and about 35 local bridges that use gusset plates. The data is from the most recently available National Bridge Inventory database and from Minnesota Department of Transportation reports.

Filter map by ...

Status

- 191 Functionally Obsolete
- 19 Not Deficient
- 106 Structurally Deficient

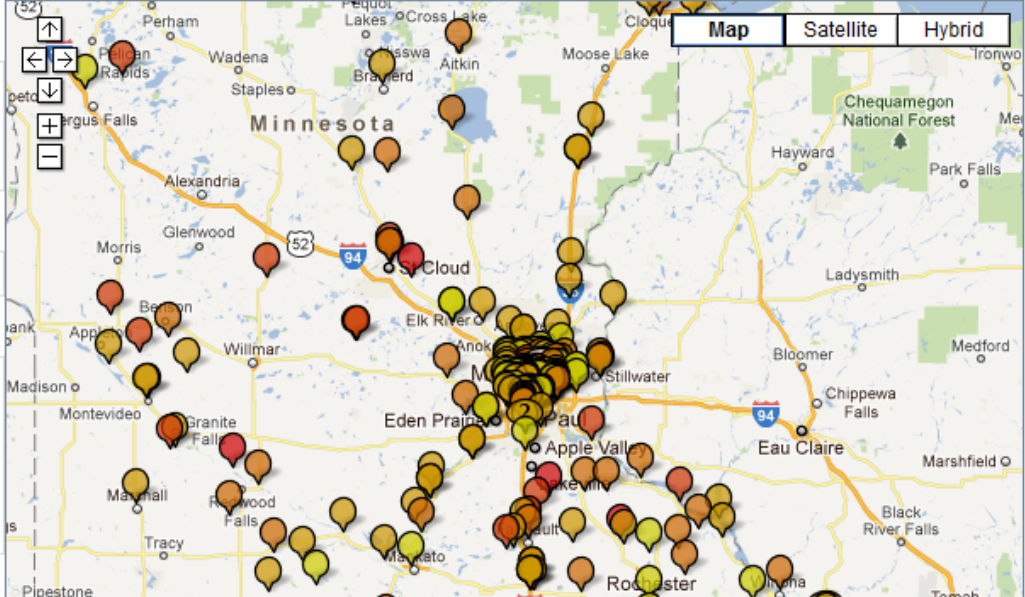
Special gusset plate inspection

- 57 On inspection list

Rating (out of 100)

- 6 0 - 20
- 25 20 - 40
- 61 40 - 60
- 153 60 - 80
- 71 80 - 100

Daily traffic



Examples

Russian Justice Initiative

Cases at the European Court for Human Rights

The screenshot shows a web browser window displaying the Russian Justice Initiative website. The browser's address bar shows the URL 'http://...tassets'. The website header includes the text 'RU Правовая инициатива по России' and 'EN Russian Justice Initiative'. A navigation menu on the left lists 'About us', 'News', 'Legal work', 'Cases', 'Security', 'Impact', 'Chechnya', 'ECHR', and 'Resource Center'. Below this menu are 'QUICKLINKS' such as 'Make a donation', 'Summary of cases', 'E-mail newsletters', 'Add headlines to your site', and 'RSS Feed'. There is also an 'E-MAIL NEWSLETTERS' section with an email input field and a 'Join' button. The main content area is titled 'ECHR Cases from the North Caucasus' and contains the text: 'This page contains select cases from the North Caucasus that are pending before the European Court of Human Rights. The list is not complete.' Below this, it shows '330 Cases' and 'sorted by: status; then by...' with a 'grouped as sorted' checkbox. A filter section on the right includes 'text search:' and 'status' with a dropdown menu showing '184 .Decided', '3 Admissible', '142 Communicated', and '1 Inadmissible'. Another filter section for 'violation' shows a list of categories with counts: '3 Death due to negligence', '254 Disappearance', '1 Extradition', '37 Extra-judicial execution', '16 Ill-treatment', '16 Indiscriminate bombing', '1 Killing', '1 Mines', '6 Non-return of bodies', '1 Private property right', '5 Property', and '1 Property right'. The main content area lists cases, with the first one being 'Sambiyeva v. Russia, (20205/07)'. The case details include: 'Judgment: 2011-11-08', 'Communicated: 2009-03-11', 'Lodged: 2007-03-20', 'Date of violation: 2003-08-13', 'Violation: Disappearance', 'Location: Chechnya', and 'Representative: SRJI'. The case description states: 'On 13 August 2003 Said-Emin Sambiyev and Mr V. M., both working at the Security Service of the Chechen President, were riding a taxi to the village of Makhety. Their taxi was stopped in the village of Tevzani at the checkpoint manned by military unit no. 28337-A. Both men were taken to the location of 45th regiment of the Airborne Forces in the village of Khatuni. On 25 August 2003 Mr V. M. was released. He described how he and Said-Emin had been detained in two separate pits not far from each other and that Said-Emin had been severely beaten. Said-Emin was never released and remains missing. The investigation into his detention and disappearance has not yielded any results.' Below the description are links for 'Judgment' and 'Communication'. The second case listed is 'Tashukhadzhiyev v. Russia, (33251/04)' with a judgment date of '2011-10-25'.

Examples

State of Oregon

Mineral Information Layer

The screenshot shows the MILO website interface. At the top, the browser tabs include 'MILO-2 ...'. The main heading is 'MILO - Mineral Information Layer for Oregon' with the subtitle 'OREGON DEPARTMENT OF GEOLOGY AND MINERAL INDUSTRIES'. Below this, the breadcrumb trail reads 'Oregon Historical Mining Information | MILO Home » Benton County'.

Mineral Information Layer for Oregon-Release 2 (MILO-Release 2) is a geospatial database that stores and manages information regarding Oregon's mineral occurrences, prospects, and mines. A **subset of the data** is shown on this data viewer site; see the bottom of this page to order the full data set.

To view the map, your browser must be JavaScript enabled and must allow cookies. *Internet Explorer users:* If you get a message asking if you want to stop loading slow scripts, click "No" or view in another browser (e.g., Firefox, Safari, Chrome).

Respect the rights of private property owners. Understand that recreation in or around inactive mine sites is extremely dangerous and can result in serious injury or death. Stay out and stay alive!

MILO Data Viewer - Due to the large number of data points, please select a county area from the dropdown menu first. After selecting an area, you can view data as a **MAP**, by **DETAILS**, or as a **TABLE**. Click on the map image above to view a large PDF of the map.

Filter by:

- Commodity Type**
 - 164 [aggregate](#)
 - 10 [industrial mineral](#)
 - 1 [metal](#)
- Commodity**
 - 6 [clays](#)
 - 1 [gold, silver, platinum](#)
- Site Name**
 - 1 [Albany Rock Products 1](#)
 - 1 [Alder Creek](#)

175 Items

LOCATION MAP • DETAILS • TABLE

Map | Satellite | Terrain

Map labels: Dallas, Monmouth, Stayton, Albany, Lebanon, Sweet Home, Newport, Toledo, 101, 20, 34, 99E, 22.

Examples

Publications

Education Policy and Data Center

The screenshot shows the Education Policy and Data Center (EPDC) website. The header features the EPDC logo and the tagline "Making sense of data to improve education." The navigation menu includes Home, About, Data, Data Visualization, Projection Tools, Policy Analysis, Client Services, and News. The current page is "Policy Analysis", as indicated by the breadcrumb "Home > Policy Analysis > Policy Analysis".

The main content area is titled "Policy Analysis" and contains a search bar and several filter categories:

- Search:** A text input field.
- Paper Type:** A list with 6 items: GMR Background Paper (6), Policy Brief (7), Report (4), and Technical Paper (5).
- Topic:** A list with 4 items: Education Inequalities (1), Educational Attainment (2), Data Quality (7), and Education (10).
- Author:** A list with 4 items: Barrow (5), Cameron (3), and Carrol (4).

The search results show 38 items, sorted by labels, then by... and grouped as sorted. The first two results are:

- 1. Educating the World's Children: Patterns of Growth and Inequality**
Author: Wils, Carrol, and Barrow
Year: 2005
Topic(s): Education Inequalities
Type(s): Report
Description: This report analyzes long-term historical trends of primary and secondary school entry, presents projections of education growth to 2025 for 70 countries, and provides alternative estimates for when these countries will reach universal primary education. It examines sub-national inequality of schooling and the impact of inequality on education growth.
Comment
- 2. Educational Inequality within Countries: Who are the Out of School Children?**
Author: Ingram, Wils, Carrol, and Townsend
Year: 2007
Topic(s): Education Inequalities
Type(s): Policy Brief
Description: This policy brief calculates the correlation of school attendance with four characteristics of pupils - household income, region of residence, urban/rural residence, and gender - and finds independent relations for each of the four characteristics. The relations are strongest for income and region, and

Examples

Floorball in Europe

Firefox

R Cases... Choice and ... HIK Conflic... Castnet Ozo... http://...taset... http://...t.aspx Municipios ... Electronic R... Inneban... x

50% off in Woodinville
\$21 for a 1/hr batting cage session (\$42 value)
Buy Now
Google offers beta
Woodinville, WA
Offer ends 11:45PM, July 24, 2012
Presented by Entertainment.com

Information -
Feedback

Innebandycuper - Floorball - Unihockey - Salibandy

Land/Country

Australien Canada
Danmark Estland
Finland Frankrike
Lettland Nederländerna
Norge Österrrike Polen
Ryssland Schweiz
Slovakien Slovenien
Spanien Sverige
Tjeckien Turkiet
Tyskland Ukraina
Ungern USA

Månad/Month

April Augusti
December Februari
Januari Juli Juni
Maj Mars
November
September

Boys/Men Girls/Women

HJ18 DJ18 (7)
(19)
HJ19 (4) DJ19 (4)
HJ20 DJ20 (10)
HJ20 DJ21 (1)
(8) Foo (24)

85 Innebandycuper



Map Satellite Hybrid

85 Innebandycuper

Hemsidor	Land
13-dagscupen 2-5/1	Sweden
Amsterdamm 9-10/7	Netherlands
Ankarspelen 25-27/3	Sweden
Assistcupen 21/11	Sweden
Australian Floorball Open 19-22/5	Australia
Austrian Open 17-19/7	Austria
AXA Floorball (f.d Viking Line) Cup 17-20/5	Sweden
Bästcupen 23-25/9	Sweden
Big Apple Floorball Cup USA 28-29/3	USA
Buster & Starlet Cup 28-1/5 & 6-8/5	Sweden
Canada Cup 20-22/5	Canada
Caperio Täby Floorball	Sweden

Kalender

UEFA EURO2012 SHOP
Supportersplace.com
For Fans Since 1999
KLICKA HÄR
www.supportersplace.com

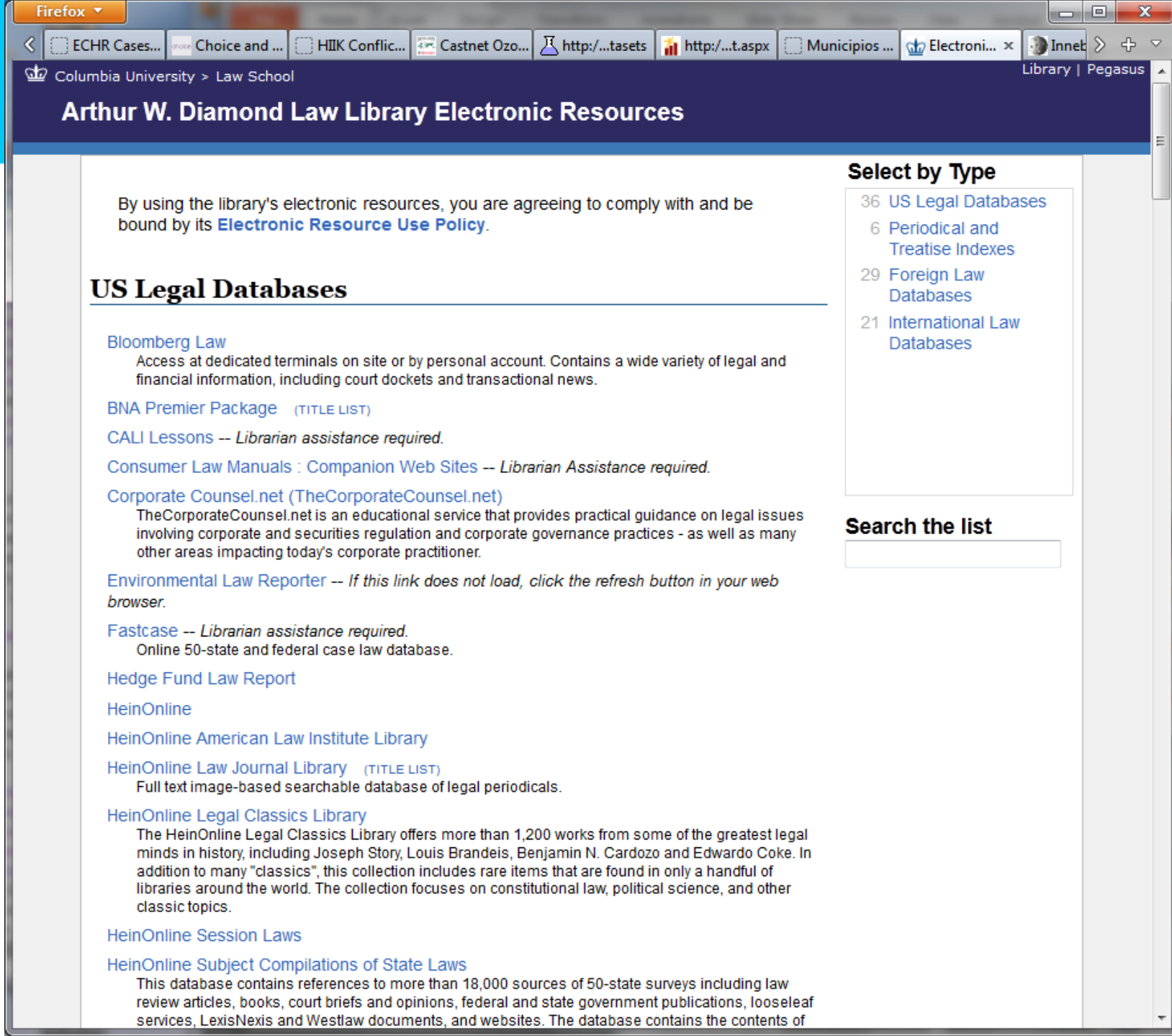
Körkort
Alla körkortsfrågor. Gratis teoriprov.
www.korkort.se

BLÄCK till din skrivare
1*

Examples

Library holdings

Columbia Law Library



The screenshot shows a Firefox browser window displaying the "Arthur W. Diamond Law Library Electronic Resources" page. The browser's address bar shows the URL "http://...tassets". The page header includes "Columbia University > Law School" and "Library | Pegasus". The main content area features a disclaimer about electronic resource use, followed by a section titled "US Legal Databases". This section lists various resources such as Bloomberg Law, BNA Premier Package, CALI Lessons, Consumer Law Manuals, Corporate Counsel.net, Environmental Law Reporter, Fastcase, Hedge Fund Law Report, HeinOnline, and HeinOnline Subject Compilations of State Laws. A sidebar on the right titled "Select by Type" lists categories like "US Legal Databases" (36), "Periodical and Treatise Indexes" (6), "Foreign Law Databases" (29), and "International Law Databases" (21). Below this sidebar is a search box labeled "Search the list".

By using the library's electronic resources, you are agreeing to comply with and be bound by its [Electronic Resource Use Policy](#).

US Legal Databases

[Bloomberg Law](#)
Access at dedicated terminals on site or by personal account. Contains a wide variety of legal and financial information, including court dockets and transactional news.

[BNA Premier Package](#) (TITLE LIST)

[CALI Lessons](#) -- *Librarian assistance required.*

[Consumer Law Manuals : Companion Web Sites](#) -- *Librarian Assistance required.*

[Corporate Counsel.net](#) (TheCorporateCounsel.net)
TheCorporateCounsel.net is an educational service that provides practical guidance on legal issues involving corporate and securities regulation and corporate governance practices - as well as many other areas impacting today's corporate practitioner.

[Environmental Law Reporter](#) -- *If this link does not load, click the refresh button in your web browser.*

[Fastcase](#) -- *Librarian assistance required.*
Online 50-state and federal case law database.

[Hedge Fund Law Report](#)

[HeinOnline](#)

[HeinOnline American Law Institute Library](#)

[HeinOnline Law Journal Library](#) (TITLE LIST)
Full text image-based searchable database of legal periodicals.

[HeinOnline Legal Classics Library](#)
The HeinOnline Legal Classics Library offers more than 1,200 works from some of the greatest legal minds in history, including Joseph Story, Louis Brandeis, Benjamin N. Cardozo and Edwardo Coke. In addition to many "classics", this collection includes rare items that are found in only a handful of libraries around the world. The collection focuses on constitutional law, political science, and other classic topics.

[HeinOnline Session Laws](#)

[HeinOnline Subject Compilations of State Laws](#)
This database contains references to more than 18,000 sources of 50-state surveys including law review articles, books, court briefs and opinions, federal and state government publications, looseleaf services, LexisNexis and Westlaw documents, and websites. The database contains the contents of

Select by Type

- 36 [US Legal Databases](#)
- 6 [Periodical and Treatise Indexes](#)
- 29 [Foreign Law Databases](#)
- 21 [International Law Databases](#)

Search the list

Examples

Ocarina catalog

Firefox

ce and ... HMK Confl... Castnet Ozo... http://...taset... http://...t.aspx Municipios ... Electronic R... Innebandyc... Ocarina ... x

Price Range in USD	Style	Tuning	Range	Appearance	Material	Retailer
63 1-50	110 Asian	1 A	6 Set	18 Zelda	132 Clay	10 6th Street Ocarina
49 51-100	45 Pendant	4	33 A4-F6	9 Animal	21	2 Claudio Colombo
14 101-150	25 Multi-Chamber	Bb	15 A5-F7	57 Black	Wood	5 Fabio Menaglio
9 151-200	21 Inline	114 C	7 C5-E6	50 Blue	17	14 Focalink
5 201-250	18 Novelty	6 D	1 A3-C6	4 Bronze	Plastic	5 Groth Music
11 251-300	7 European	1	6 A3-F5	28 Brown	2	11 Hind Ocarina
6 301-350	5 Mini	Eb	1 A4-A7	1 Crackle	Metal	3 Langley Ocarinas
6 351-400	4 Polyphonic	21 F	1 A4-B5	6 Gold		8 Mountain Ocarinas
2 401-450		34 G	1 A4-C6	2 Gray		16 Noble Ocarina
2 451-500			7 A4-C7	36 Green		3 North Country Workshop
1 601-650			1 A4-C8	6 Hand Painted		
2 651-700			1 A4-F7			
1 701-750			5 A4-G7			





Search

TABLE • PHOTO

172 OCARINA(S)

sorted by: retailer; then by... • grouped as sorted

6th Street Ocarina

 <p>6th Street 9 Hole Soprano \$42 F5-A6 Buy: USA</p>	 <p>6th Street 10 Hole Soprano \$44 F5-Bb6 Buy: USA</p>	 <p>6th Street 10 Hole Alto \$54 C5-F6 Buy: USA</p>	 <p>6th Street 9 Hole Zelda \$56 C5-E6 Buy: USA</p>
---	---	---	---

Examples

Approved drug list California Dept. of Health

The screenshot shows a web browser window displaying the California Department of Health's Health Care Services website. The page is titled "Search Medi-Cal Formulary:" and includes a search bar with a magnifying glass icon. Below the search bar, there is a navigation menu with links for HOME, SERVICES, INDIVIDUALS, PROVIDERS & PARTNERS, FORMS, LAWS & PUBLICATIONS, and DATA & STATISTICS. The main content area features a search bar with a trash can icon and a pencil icon. Below the search bar, there is a section titled "PLEASE READ THIS" with the following text:

PLEASE REPORT MEDI-CAL FRAUD: 1-800-822-6222

PLEASE READ THIS
Source data for this look-up tool was LAST UPDATED 03MAY2012
This tool searches the CONTRACT DRUG LIST and returns all items in the therapeutic class.
If your search yields too many items, click on the HIGHLIGHT button.
This will highlight the requested search term within the results.
If your search returns no results, the drug requested may not be part of the Contract Drugs List.
To clear the search field, click on the GARBAGE CAN button.
The Medi-Cal Contract Drug List is also available on Epocrates.

ANALGESICS, NARCOTICS

FENTANYL 25MCG/HR PATCH, TRANSDERMAL 72 HOURS
Restricted to NDC labeler code 50458 (Janssen) and to a maximum of ten (10) transdermal patches per dispensing and a maximum of three (3) dispensings of any strength in a 75-day period only.
mfg codes:50458
DURAGESIC

FENTANYL 50MCG/HR PATCH, TRANSDERMAL 72 HOURS
Restricted to NDC labeler code 50458 (Janssen) and to a maximum of ten (10) transdermal patches per dispensing and a maximum of three (3) dispensings of any strength in a 75-day period only.
mfg codes:50458
DURAGESIC

FENTANYL 75MCG/HR PATCH, TRANSDERMAL 72 HOURS
Restricted to NDC labeler code 50458 (Janssen) and to a maximum of ten (10) transdermal patches per dispensing and a maximum of three (3) dispensings of any strength in a 75-day period only.
mfg codes:50458

Examples

Teacher Bonuses

Tampa Bay Times

The screenshot shows a web browser window with multiple tabs. The active tab is titled 'Teacher ...'. The page content is from the Tampa Bay Times website, featuring a search results page for 'Teacher bonuses by school'. The page includes a navigation menu, a search bar, and a list of schools with their respective bonus statistics. A 'Refine results by:' sidebar is visible on the left, showing filters for 'School Name' and 'Level'.

Tampa Bay Times HCA West Florida You're not just a CAREGIVER you're devoted to caring. Explore our Allied Health TOGETHER, PERFORM

Home News Politics Opinion Sports Things to Do Money Features Blogs Weather Traffic Classifieds Jobs Real Estate

Search Site Web Archives - back to 1987 Google Newspaper Archive - back to 1901 powered by Google

213 Items sorted by: [school](#) and [Name](#); [then by...](#) • grouped as

Teacher bonuses by school

About 4,700 Hillsborough educators received a \$2,100 bonus through the state's Merit Award Program. Teachers, school-based administrators, guidance counselors and other instructional personnel were eligible. Student test scores and performance evaluations from 2006-07 determined who got the money.

Use the links to see how schools stacked up as of last spring:

Refine results by:

School Name

- 1 [Adams Middle](#)
- 1 [Alafia Elementary](#)
- 1 [Alexander Elementary](#)
- 1 [Alonso High](#)
- 1 [Anderson Elementary](#)
- 1 [Apollo Beach Elementary](#)

Level

- 3 [Combination](#)
- 133 [Elementary](#)
- 33 [High](#)
- 44 [Middle](#)

Adams Middle

Level: Middle

- Merit pay recipients: 38
- Educators eligible: 85
- Percent receiving bonus: 44.7
- Percent of students on subsidized
- Percent of minority students: 54

Alafia Elementary

Level: Elementary

- Merit pay recipients: 30
- Educators eligible: 51
- Percent receiving bonus: 58.8
- Percent of students on subsidized
- Percent of minority students: 27

Alexander Elementary

Level: Elementary

- Merit pay recipients: 25
- Educators eligible: 54
- Percent receiving bonus: 46.3
- Percent of students on subsidized
- Percent of minority students: 90

Alonso High

Level: High

- Merit pay recipients: 74
- Educators eligible: 177
- Percent receiving bonus: 41.8
- Percent of students on subsidized
- Percent of minority students: 59



Authoring

HTML language extension, so author like HTML

Hackers can edit source

And lots of people “author” pages by copying someone else’s

Others can use any favorite tool

Write in a blog using blog post editor (Datapress extension for Wordpress)

Write in a wiki using wikitext (Wibit extension for Mediawiki)

Write a document with a WYSIWYG editor (DIDO editor)



Beyond CRUD

Sometimes, task-specific data processing

Calendar alarm, spell check, music library cleanup, reconcile checkbook, complex queries

Data standard will simplify end-user programming

Computational widgets can be wired to data (e.g. facets)

Single data model makes them general purpose, interoperable

End users can author and share 'macros'

"App store" for views and widgets

Example: Atomate (2009)

User writes rules and actions in controlled natural language

Refers to entities and relations in their data

When data changes to make rules true, actions are triggered

On the web: If This Then That (ifttt.com)



Personal Data Repositories

Natural consequence

Sites hold data because only they can manage it
Once anyone can manage it, why use a site?

I keep my own data

I own it
I decide who can do what with it

Data hosting providers

Hold my data
But can't see it (encrypted)
Dropbox, Microsoft, Mastercard, Post Office?
Different pieces may be in different places
Libertarians keep it on personal devices

Services ask me for it

I write a review "on Amazon"
It's actually in my own repository
It shows up at Barnes and Noble too
Wordpress posts it on my "blog"
(just a feed of anything I want public)
Netflix uses it to recommend movies to me

No more facebook?

Everyone generates their own "feed"
Friends have permission to access
Hosting provider serves requests for it
Aggregation is a commodity service



The End of Applications

People can manage and visualize their data their way

Content verticals shrivel to dumb data repositories

Providers will humbly offer to process my data for me

Grim future for embedded advertising

“App store” for views, facets, templates, widgets

In-page structure improves speech interaction (Louise)



End

David Karger

<http://simile-widgets.org/exhibit>