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INFORMAZIONE E BIOINGEGNERIA

From Service- to UI-Oriented Computing

The Vision of an Intuitive Composition Paradigm

Florian Daniel @ ZEUS, 13-14 February 2017, USI Lugano, Switzerland

After more than a decade since their emergence, why are Web services and SOA still a prerogative of **programmers** only?

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"Don't Just Play on Your Phone, Program It"

Mark DeLoura and Randy Paris

December 09, 2012
09:00 AM EST

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This week is Computer Science Education Week, or "CSEdWeek," an annual campaign highlighting the importance of learning computer science. CSEdWeek is held in recognition of the birthday of computer science pioneer Admiral Grace Murray Hopper, widely known for popularizing the idea of "debugging" a computer—a phrase inspired by her team's removal of an actual moth from a relay in a Harvard Mark II computer in 1947. (Its remains can be found in the group's log book at the Smithsonian Institution's National Museum of American History in Washington, D.C.) This year, non-profit group Code.org is driving CSEdWeek activities in more than 150 countries around the world and sponsoring an "Hour of Code" campaign that

Technology

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Digital Economy & Society

European Commission > Coding - the 21st century skill

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Smart living

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eGovernment

Cybersecurity and digital privacy

Online trust

Content and media

Emergency and support lines

Societal challenges projects

Coding - the 21st century skill

Coding enhances creativity, teaches people to cooperate, to work together across physical and geographical boundaries and to communicate in a universal language. Technology is part of our life, and coding brings it closer to you!



Each and every interaction between humans and computers is governed by code. Whether you create a web app, follow GPS directions when driving or wish to revolutionise social interactions, programming is everywhere and fundamental to the understanding of a hyper-connected world. Coding is the literacy of today and it helps practice 21st century skills such as problem solving, team work and analytical thinking.



Share

Basic coding skills is also needed for many jobs. Did you know that more than 90% of professional occupations nowadays require digital competences, including programming? There is also a talent shortage as the education system is slow to react to new demands. In Europe we will have up to 825,000 ICT job vacancies by 2020.

In order to empower people of all groups in our society, and ensure the global competitiveness of Europe, we need to raise interest in programming and enhance the digital competence of Europe. Therefore we're supporting coding through various initiatives:

- [EU Code Week](#) aims at celebrating the art of creating with code, motivating people to start learning to code, as well as connecting individuals, groups, organizations and companies who are willing to help more people experience the joy and relevance of coding. This year [EU Code Week](#) takes place from 15-23 October. Join the more than [half a million people who took part in 2015 in 46 countries](#) all over the world and organise your own or take part in a [coding event](#) in October.
- Making ICT careers more attractive is one of the objectives of the [Grand Coalition for Digital Jobs](#), a European multi-stakeholder partnership that aims at facilitating cooperation among business, education providers, public and private actors to

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dodding

INFORMATICA

Unplugged



Cominciare a impadronirsi delle tecniche della programmazione attraverso esercizi di informatica svolti senza il computer



1

2

3

Teach **people** how to compose services



Make services **self-explaining** and **supportive**

SOC



Services

Description

Discovery

Composition

SOC

=

Services

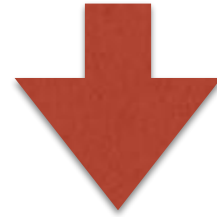
Description

Discovery

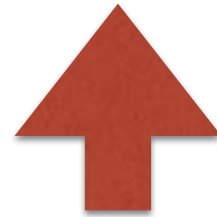
Composition



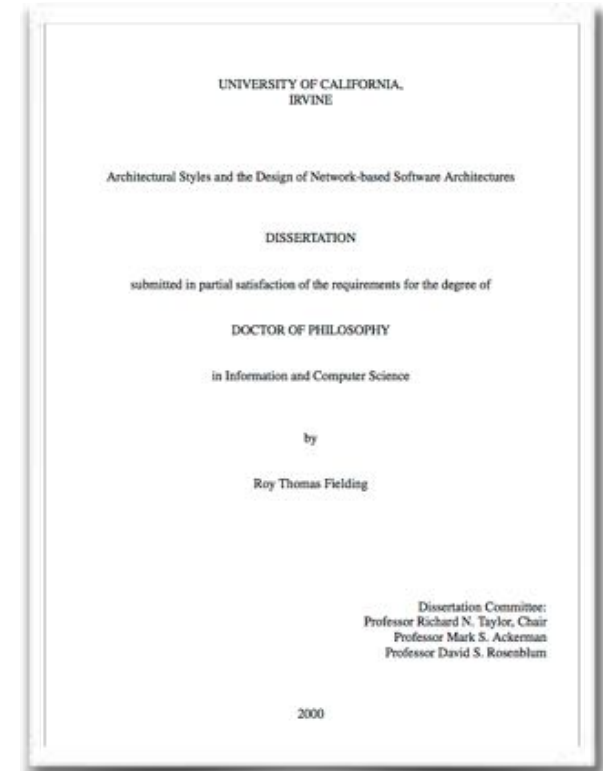
SOAP Web services =
XML over SOAP over HTTP
WS-* family of specifications
stateless and stateful



Software
engineering
abstractions



RESTful Web services =
XML/JSON over HTTP
stateless



SOC

=

Services

Description

Discovery

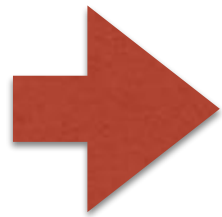
Composition

WADL = description of RESTful resources

WSDL = description of Web service interfaces

WSCI = description of client-server protocols

WS-CDL = description of multi-party business protocols



Oriented toward machines

Documentation still needed

SOC

=

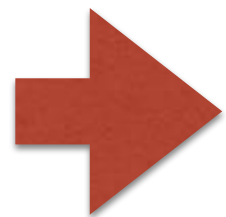
Services

Description

Discovery

Composition

UDDI = Universal Description, Discovery and Integration



Failure (as public registry)

SAP: Article

Microsoft, IBM, SAP To Discontinue UDDI Web Services Registry Effort

UDDI Business Registry (UBR) Will Be Discontinued From January 12, 2006

BY SAP NEWS DESK

ARTICLE RATING: ☆☆☆☆☆

DECEMBER 18, 2005 10:00 AM EST

READS: 27,864

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Microsoft, IBM and SAP are discontinuing the UDDI Business Registry (UBR) project for Web services on January 12, 2006, according to Web-based bulletins from the three companies. UDDI prescribes a specification for setting up directories of Web services for both public and within-the-firewall usage.

According to a Microsoft FAQ about the shutdown, the project, announced in September 2000, was intended to prove the interoperability and "robustness" of the UDDI Web services registry specification, "This goal was met and far exceeded. The UBR ran for five years, demonstrating live, industrial strength UDDI implementations managing over 50,000 replicated entries. The practical demonstration provided by the UBR helped in the ratification of UDDI specifications, as OASIS standards and several software vendors now include UDDI support as a key feature in their software products." Information currently in the registry will be handled "in accordance with the terms of the individual registry to which the information was provided," according to Microsoft. "Publication to the sites will be disabled as of January 12, 2006, and no new information will be accepted," the company said.

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uddi-spec message

[[Date Prev](#)] | [[Thread Prev](#)] | [[Thread Next](#)] | [[Date Next](#)] -- [[Date Index](#)] | [[Thread Index](#)] | [[List Home](#)]

Subject: FW: [members] Closure of OASIS UDDI Specification TC

- *From:* "Mary McRae" <mary.mcrae@oasis-open.org>
- *To:* <uddi-spec@lists.oasis-open.org>
- *Date:* Wed, 2 Jul 2008 14:45:40 -0400

To: OASIS Members:

This is to confirm that the OASIS Universal Description, Discovery, and Integration (UDDI) Specification Technical Committee voted to complete its work in late 2007 and has been closed.

The UDDI Specification TC standardized two versions (v2.0 and v3.0) of the UDDI specification set, as well as a Schema Centric XML Canonicalization Specification V1.0. See: <http://www.oasis-open.org/committees/uddi-spec/doc/tcspecs.htm#uddiv3>
UDDI versions 2.0 and 3.0 were approved as OASIS Standards. See: http://www.oasis-open.org/news/oasis_news_02_03_05.php
and the TC's presentation "UDDI v3: The Registry Standard for SOA", at: http://www.oasis-open.org/presentations/uddi_v3_webcast_20050222.pdf

ProgrammableWeb: the world's largest API repository, **GROWING DAILY**

Search Over 12,559 APIs

Filter APIs

Include Deprecated APIs

API Name	Description	Category	Updated
Google Maps	The Google Maps API allow for the embedding of Google Maps onto web pages of outside developers, using a simple JavaScript interface or a Flash interface. It is designed to work on both mobile...	Mapping	12.05.2005
Twitter	The Twitter micro-blogging service includes two RESTful APIs. The Twitter REST API methods allow developers to access core Twitter data. This includes update timelines, status data, and user...	Social	
YouTube	provides the capability to search for videos, retrieve...		
Flickr	The Flickr API can be used to retrieve photos from the Flickr photo sharing service using a variety of feeds - public photos and videos, favorites, friends, group pools, discussions, and more. The...	Photos	
Facebook	The Facebook API is a platform for building applications that are available to the members of the social network of Facebook. The API allows applications to use the social connections and profile...	Social	

For human consumption!

Search API Directory

Search over 12,559 APIs updated daily

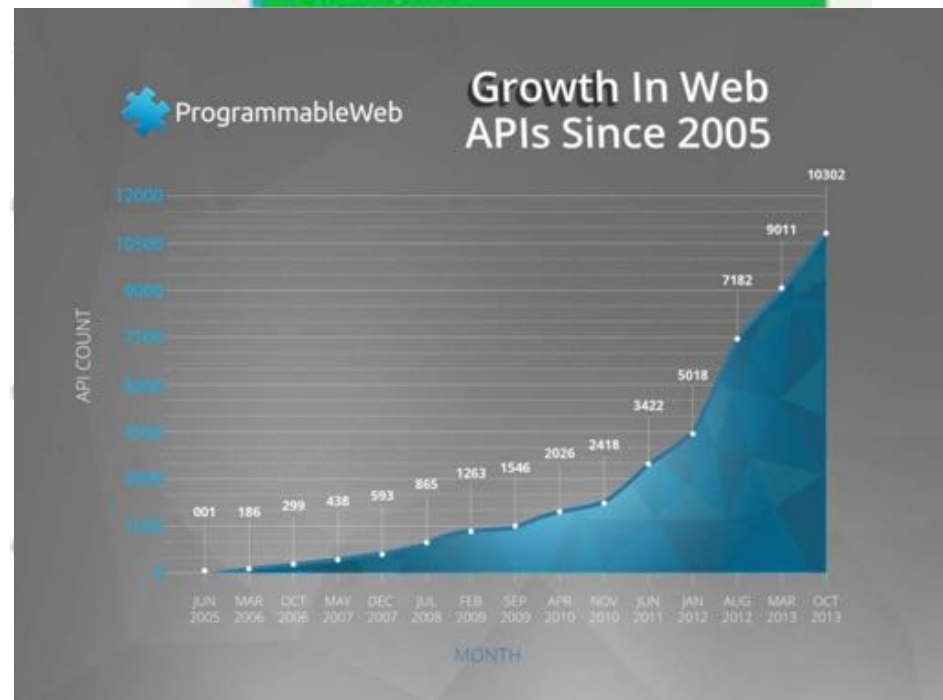
Search APIs, mashups, developers

Browse by Category

Newest APIs

Latest Mashups

Add an API +



SOC

=

Services

Description

Discovery

Composition

BPEL = Business Process Execution Language

Comes with exception handling, transactions,
compensations,...

Java - purchaseOrderProcess - Eclipse IDE

File Edit Navigate Search Project Run Window Help

Package Explorer Hierarchy

- org.edpsw.bpel.examples.orderprocessing [C]
- OASSSampleProcess.bpel 1.1 (ASCII-44)
- OASSSampleProcess.bpelx 1.1 (ASCII-44)
- OASSSampleProcess.wsdl 1.1 (ASCII-44)
- purchase.xsd 1.1 (ASCII-44x)

purchaseOrderProcess

- Selection Tool
- Marquee Tool
- Actions
- Empty
- Invoke
- Receive
- Reply
- Assign
- Control
- Switch
- Pick
- While
- Repeat Until
- Wait
- Faults
- Exit
- Throw
- Rethrow
- Compensate
- Zoom In
- Zoom Out

Outline

- Interface Partners
- Reference Partners
- Variables
- Correlation Sets
- Sequence
- Receive
- Flow
- Reply

purchaseOrderProcess

- Interface Pa...
- purchasing
- invoicing
- shipping
- Reference P...
- scheduling
- Variables
- PO
- Invoice
- POFault
- shippingRequest
- shippingInfo
- shippingSchedule
- Correlation S...

For skilled developers only!

Problems Javadoc Declaration Synchronize Properties

Description

Details

Partner Link: purchasing

Interface: purchaseOrderPT

Operation: sendPurchaseOrder

Create a new Process instance if one does not already exist

Eclipse BPEL Designer

25M of 38M

BPMN 2.0 mapped to BPEL

P:\2010-06-03\Order Fulfillment\Procurement Process with Error Handling - Direct Triotech 3 page.bpm - Yaoqiang BPMN Editor 3.0 Beta Evaluation Edition

File Edit View Model Repository Deployment Simulation Settings Help

Diagram Source

Close Ctrl+W
Close Others
Close All Ctrl+Shift+W

Event

Start Ev. Start Ev. Informa. End Event
Bounds. Bounds. Informa.

Task

Task Send To. Receive. Service...
User To. Manual. Script T. Business...

Gateway

Exclusive. Exclusive. Parallel. Inclusive...
Complex. Event G. Event G. Parallel...

Sub-Process

Sub-Proc. Event S. Transac. Ad-Hoc...

Call Activity

Data

Data Inp. Data Ou. Collect. Collect...

```

graph LR
    Start((Start Event)) --> Check[Check availability]
    Check --> Gateway{Exclusive Gateway}
    Gateway --> Skip[Skip article]
    Skip --> Request[Request shipment]
    Request --> End1((End Event))
    
    Skip -- Error --> ProcessError[Process error]
    ProcessError --> Inform[Inform customer]
    Inform --> End2((End Event))
    ProcessError --> Remove[Remove article from catalogue]
    Remove --> End3((End Event))
  
```

File System Definers Repository

2010-06-03

Item name	Item type	Date Mod
Correlation	File folder	6/11/2010
Diagram Inter	File folder	6/11/2010
initial Yiling	File folder	10/7/2010
Hardware's Ref.	File folder	6/11/2010
Incident Manag.	File folder	6/11/2010
Models & Diag.	File folder	6/11/2010
Notion Price	File folder	6/11/2010
Order Fulfillm.	File folder	6/11/2010
Phone	File folder	6/11/2010
Travel Booking	File folder	6/11/2010

Properties Simulation

Task

General

id 6-199
name Skip article
isForCompensation
isLeaf
stopType none

Ready Mode Edit Scale 91%

For skilled developers only!

Yaoqiang BPMN Editor

List of BPEL engines

From Wikipedia, the free encyclopedia

This is a list of Business Process Execution Language (BPEL) and Business Process Model and Notation (BPMN) engines.

Product	Product Page	Vendor	Edition	Release Date	Framework	Compatibility	License
ExpressBPEL	[1] ↗	CodeBrew Technologies Pvt. [2] ↗	1.1	2012-13	ApacheAxis	WS-BPEL 2.0; BPEL4People: [3] ↗	Proprietary
ActiveVOS	[4] ↗	Active Endpoints [5] ↗	8.0	2010-09	Servlet or Java EE	BPMN 2.0; WS-BPEL; standards ↗	Proprietary
Activiti	[6] ↗	Adhesco and the Activiti community	5.16.4	2014-10-16	Java	BPMN 2.0	Apache 2.0
Apache CDE	[7] ↗ [8] ↗	ASF	1.3.6 1.0.164	2013-10-12 2006-06-07	Apache Axis, JBI Java EE	BPEL4WS 1.1, WS-BPEL 2.0 (WS-HumanTask with Apache HISE ↗)	Apache
BizTalk Server	[9] ↗	Microsoft	Biztalk 2010	2010	.NET	BPEL, BPMN, RFID, WSDL, UDDI, WS-*	Proprietary
iBolt Server	[10] ↗	Magio Software Enterprises			Java EE	BPEL4WS	Proprietary
jBPM	[11] ↗	jBoss	6.0.1	2014-01-27	Java EE	BPMN 2.0	Apache 2.0
Open ESB	[12] ↗	OpenESB Community	2.3.1	2013-10-01	Java EE, JBI	WS-BPEL 2.0	CCDL
Oracle BPEL Process Manager (formerly Collaxa BPEL Orchestration Server)	[13] ↗	Oracle Corporation	11g	2010-04	Java EE	WS-BPEL 2.0, BPMN 2.0	Proprietary
					Java EE		LGPL
Parasoft BPEL Maestro	[14] ↗	Parasoft	5.0.1	2010-02-25	Servlet	WS-BPEL, BPEL4People/WS-HumanTask	Proprietary
					Java EE		LGPL
SAP							Proprietary
Virtuoso Universal Server	[16] ↗	OpenLink Software	4.5	2006		UDDI, WS-BPEL, WS-*	GPL and Proprietary
WebSphere Process Server	[18] ↗	IBM	6.0.1.3	2006-09-29	Java EE	WS-BPEL	Proprietary

Only few **BPEL/BPMN engines** running in practice!

Most service compositions are still coded **manually**

An attempt to **lower the barriers** to development...

Mashups = composite applications developed starting from reusable data, application logic and/or user interfaces typically, but not mandatorily, sourced from the Web

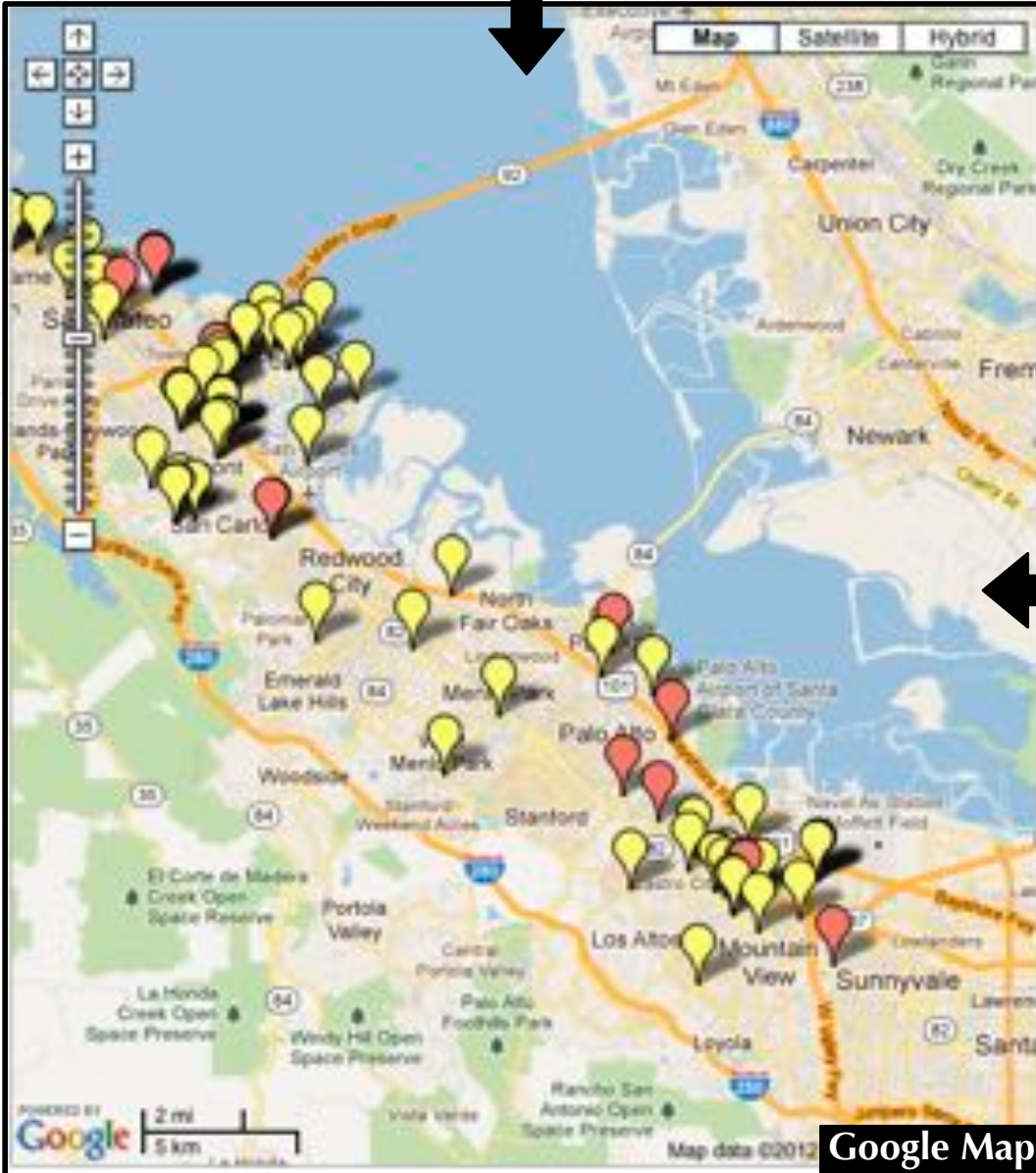
For Rent [For Sale](#) [Rooms](#) [Sublets](#)

Housingmaps.com

Powered by [craigslist](#) and [Google Maps](#)

City: Price: [Show Filters](#) [Refresh](#) [Link](#)

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Google Map

●	\$1743	1bd	550ft² - Available - Updated Junior With A Washer & Dryer!	Foster City	1/30
●	\$1950	3bd	1120ft² - Spacious House (Upper Level) at a convenient location	Daly City	1/30
●	\$1895	2bd	900ft² - Downstairs Unit Downtown Menlo Park!	Menlo Park	1/30
●	\$1985	1bd	1000ft² - Stop Looking! You've Found The Perfect Home!	Los Altos	1/30
●	\$1550	1bd	Spacious 1 Bedroom - Close to 311 & Hillsdale Mall	San Mateo	1/30
●	\$1595	1bd	Great Unit! Great Location - West Menlo!	Menlo Park	1/30
●	\$1650	1bd	770ft² - Fabulous Apartment Home	San Mateo	1/29
●	\$2000	3bd	1200ft² - New 3 Bed/2 bath Condo for Rent!	East Palo Al	1/29
●	\$1875	1bd	One Bedroom and One Bath with Beautiful View in Belmont Hills	Belmont	1/29
●	\$1543	1bd	625ft² - Cozy 1 bedroom home!	Foster City	1/29
●	\$1968	1bd	780ft² - Welcome to the good life	Foster City	1/29
●	\$1699	1bd	780ft² - 1 bedroom	Palo Alto	1/29
●	\$1898	1bd	Cozy one bedroom, renovated, & spacious - Pls. Call For Availability!	Milbrae	1/29
●	\$1895	2bd	1050ft² - Baywood Beauty!	San Mateo	1/29
●	\$1602	1bd	624ft² - Hights Location Near San Francisco! Incredibly Views!	Pacific	1/29
●	\$1932	2bd	874ft² - Roomy 874 sq ft 2 BR in Mountain View	Mountain Vw	1/29
●	\$1840	2bd	Like to Google, hiking, Views	Mountain Vw	1/29
●	\$1650	1bd	770ft² - 770 Sq Ft - Fabulous Apartment Home	San Mateo	1/29
●	\$1500	1bd	648ft² - Waterfront Setting Private Canyon Pool/Picnic Area	San Mateo	1/29
●	\$1825	1bd	835ft² - Spacious 1 bedroom apartment available in Mountain View	Mountain Vw	1/29
●	\$1700	1bd	678ft² - Spacious 1 Bedroom Home	Daly City	1/29
●			700ft² - Welcome Home to Indian Wells Apartments!	Redwood C	1/29

Craigslist.org

Mashup tools...

Yahoo! Pipes = data mashups

The screenshot displays the Yahoo! Pipes editor interface in a Mozilla Firefox browser window. The page title is "Pipes: editing 'Castle Project Events'". The browser's address bar shows the URL: <http://pipes.yahoo.com/pipes/pipe.edit?id=0k934vgs38GjN89YEa8Xw>. The page features a navigation bar with buttons for "Layout", "Expand All", "Collapse All", "Back to My Pipes", "New", "Save", "Save a copy", and "Publish".

On the left side, there is a "Sources" panel with a list of data sources: Fetch CSV, Fetch Feed, Fetch Data, Flickr, Google Base, Yahoo! Local, and Yahoo! Search. Below this is a "User inputs" section and a "My pipes" section.

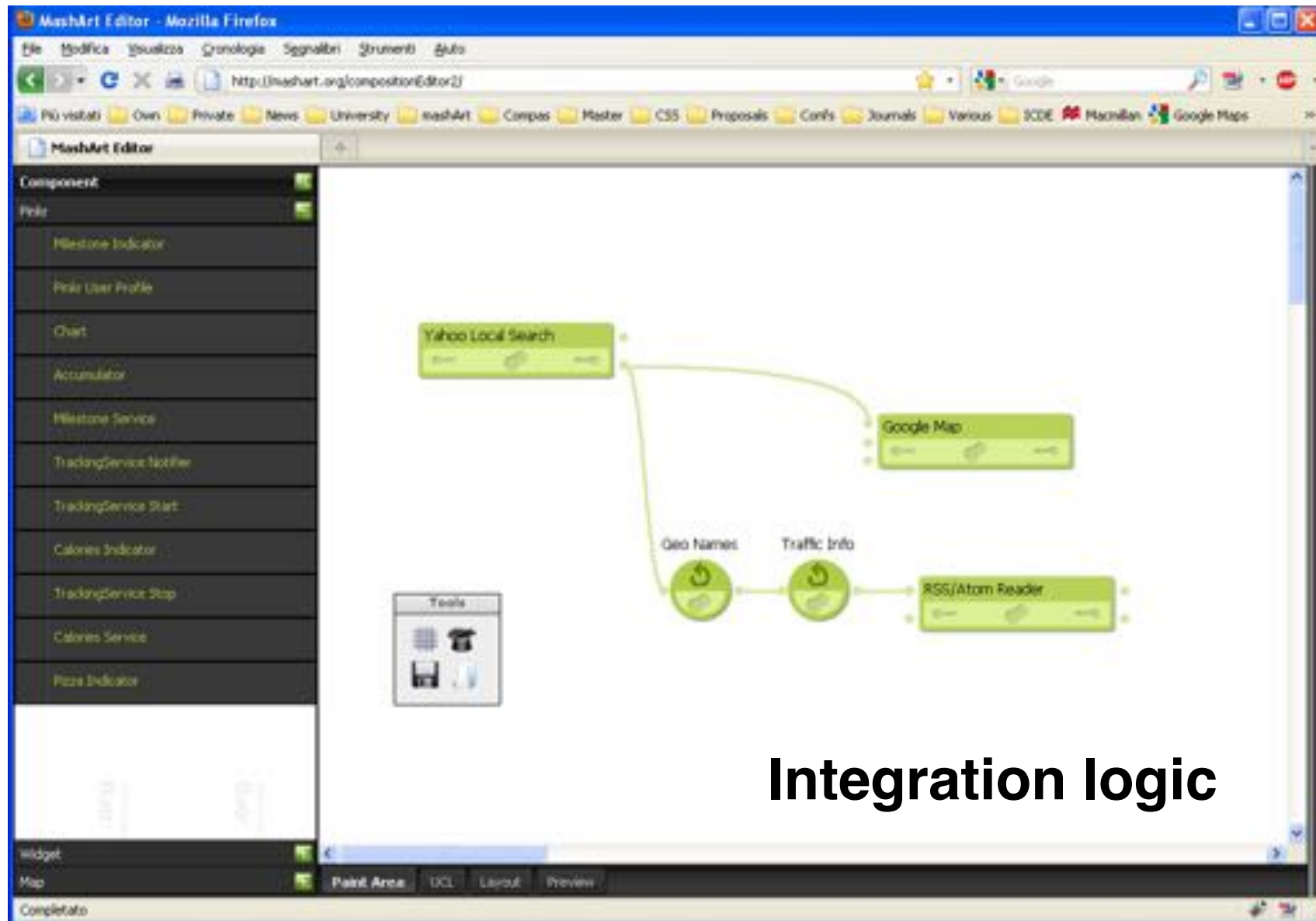
The main workspace shows a data pipeline with the following components:

- Two "Fetch Feed" boxes at the top. The left one has a URL field containing <http://www.dapper.net/services/>. The right one has a URL field containing <http://5sheye3.cenqua.com/char>.
- A "Union" box in the center, which receives input from both "Fetch Feed" boxes.
- A "Truncate" box below the "Union" box, with a field "Truncate feed after" set to 15.
- A "Pipe Output" box at the bottom, which receives input from the "Truncate" box.

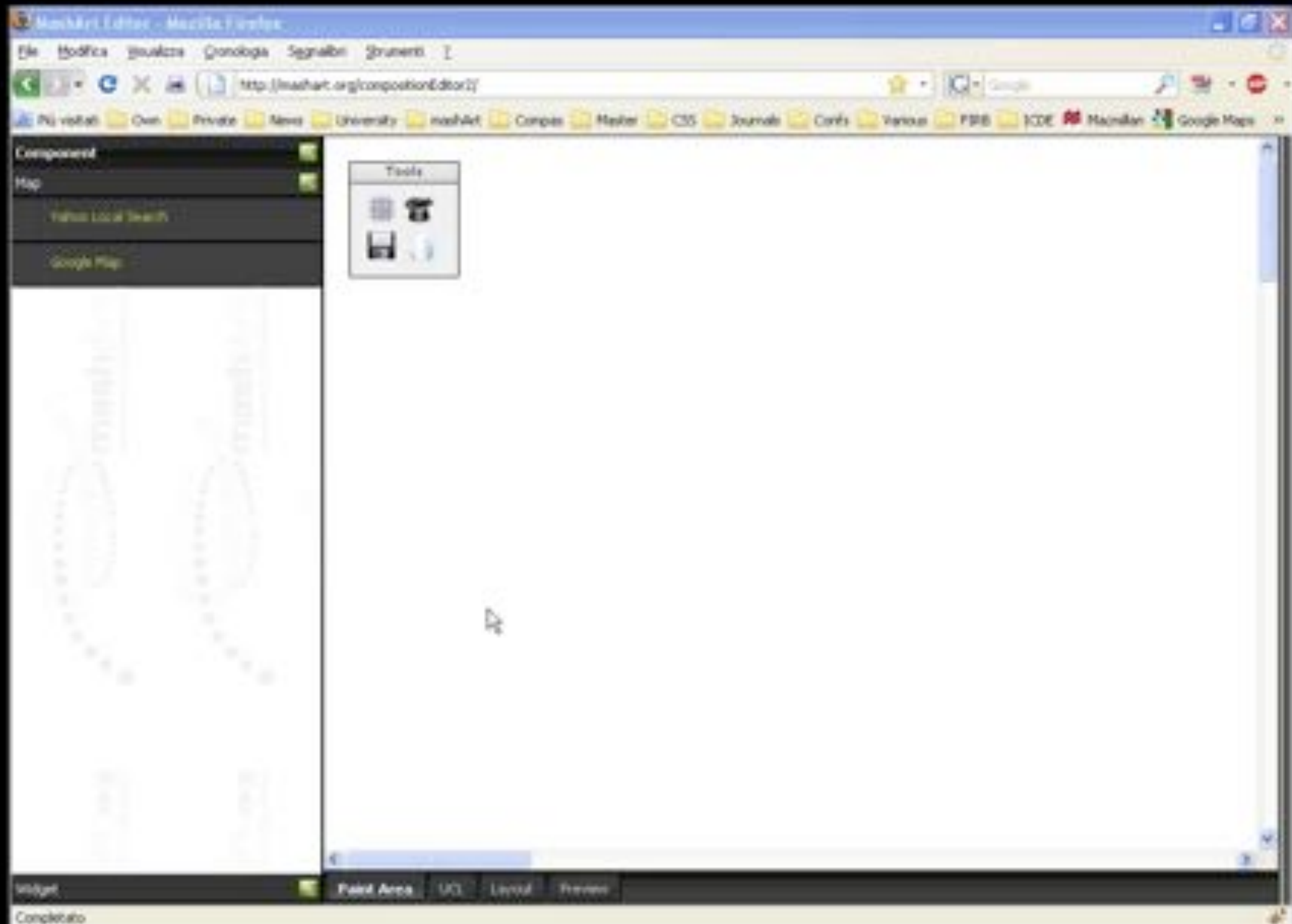
At the bottom of the interface, there is a "Debugger: Pipe Output (15 items)" section. It shows the time taken for the pipe to execute: "Time taken: 0.839835s". Below this, there are three entries indicating build failures:

- Build failed - 7/13/2007 2:10 PM
- Build failed - 7/13/2007 1:01 PM
- Build failed - 7/13/2007 10:50 AM

The status bar at the bottom left shows "Done" and a green progress indicator.



Integration logic



ResEval Mash = domain-specific mashups (research evaluation)

The screenshot displays the ResEval Mash application interface. At the top, there is a menu bar with 'Run', 'Save', 'Save copy', and 'Close'. A status bar indicates 'double click on a component to open its configuration panel. x'. The main workspace shows a workflow diagram with components: 'ISI Researchers', 'Microsoft Academic', 'ISI Performing set_researchers...', 'ISI Ranking', 'ISI Smart', 'ISI Smart', 'ISI Smart', and 'result'. A 'Configuration Interface' panel on the left allows selecting a university or sector, with 'INFORMATICA' selected. A 'Components Panel' on the right lists available components like 'ISI Impact Ranking', 'Publication Impact', 'ISI Index', 'ISI Impact Percentiles', 'ISI Chart', and 'ISI Bar Chart'. An 'Execution Status' panel shows the current status of components. A 'Results' panel at the bottom right displays a bar chart of 'ISI Smart' results across percentiles.

Execution Status: This is a run-time status of a component which allows a user to see the current status of a component (i.e., completed, running, failed).

Components Panel: Shows a list of available components under a particular category.

Configuration Interface: On double-click, components open their configuration panel, which allows the user to set configuration parameters.

Results

Percentile	ISI Smart
0.00	1000000
0.01	900000
0.02	800000
0.03	700000
0.04	600000
0.05	500000
0.06	400000
0.07	300000
0.08	200000
0.09	100000
0.10	50000
0.11	20000
0.12	10000
0.13	5000
0.14	2000
0.15	1000
0.16	500
0.17	200
0.18	100
0.19	50
0.20	20
0.21	10
0.22	5
0.23	2
0.24	1
0.25	1



assisted mashup
development as a service

= assisted mashup development

The screenshot displays the Baya web application interface. On the left, a 'Component toolbar' lists various components like Sources, User inputs, Operators, and URL Builder. The central 'Yahoo! Pipes modeling canvas' shows a 'URL Builder' component being added, with a 'Pipe Output' button below it. On the right, a 'Baya recommendation panel' displays 'Recommended patterns' for the selected component. Below this, a 'Details about selected pattern' panel shows the configuration for the 'URL Builder' component, including its base URL, port, path to elements, and query parameters. The interface also includes a search bar at the top right and a debugger at the bottom.

Newly added component

Recommended patterns

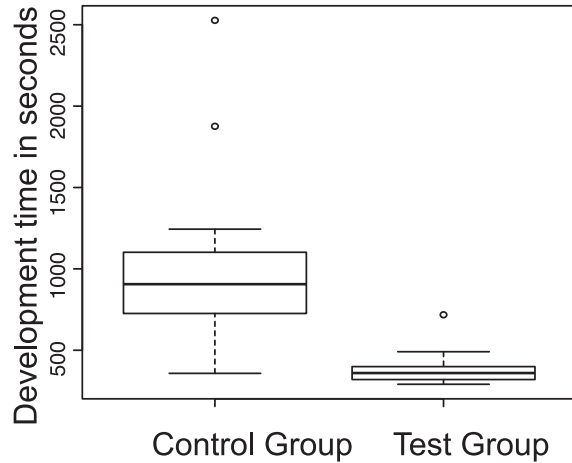
Baya recommendation panel

Details about selected pattern

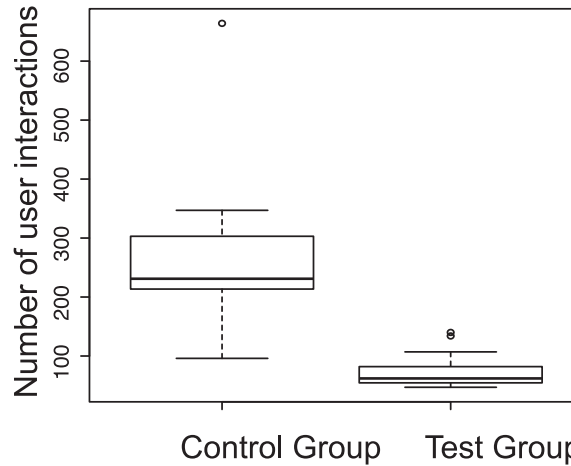
Component toolbar

Yahoo! Pipes modeling canvas

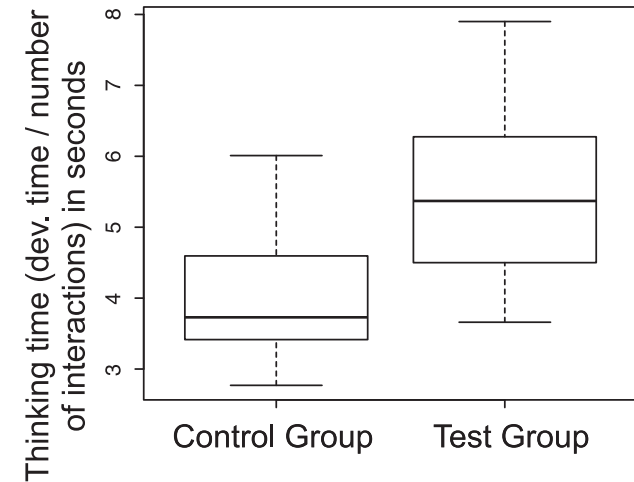
User study: comparison of development with/without Baya



(a) mean development time in designing a pipe without and with Baya



(b) mean number of user interactions in designing a pipe without and with Baya



(c) mean thinking time for designing a pipe without and with Baya



UNIVERSITY
OF TRENTO - Italy

using



CrowdFlower

NaturalMash = natural language mashups

Widgets
are resizable and can be moved around.

Visual Field
renders the mashup output while it is being edited.

Ingredients Toolbar
displays a searchable list of available Web APIs.

Web APIs
are draggable and represented by an icon.

API Dock
shows the list of APIs used in the mashup.

Text Field
allows to edit the mashup description.

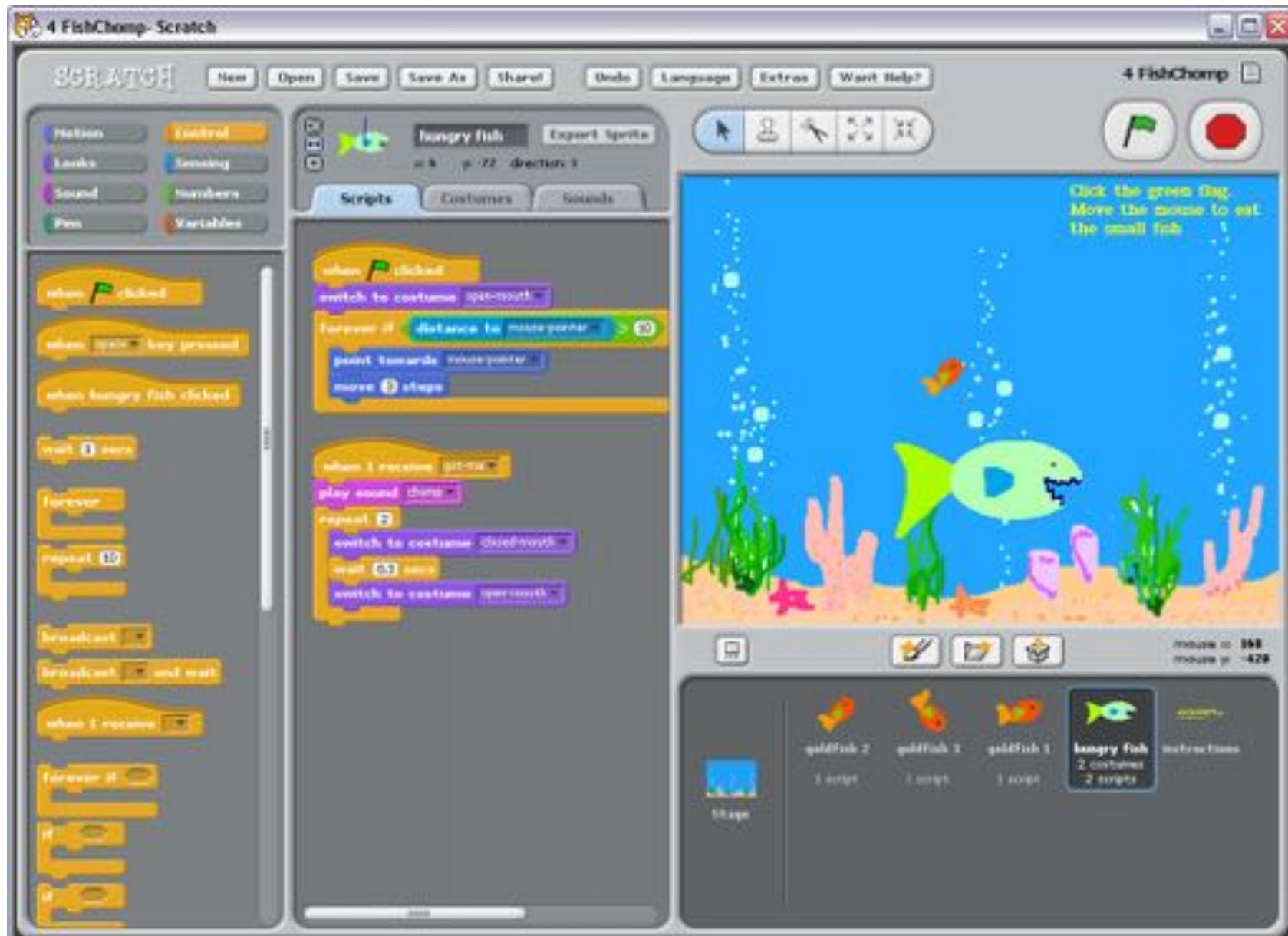
Title	Description
Pop Culture 2hrs mashup	Madison
I Want It All - We Will Rock You Mashup feat. Amagottoh aka Geddo	Queen
Cost Mashup - Just The Way You Are - Just A Dream	The Banders Bells
Like OMG, Baby (Capital FM Summerline Ball Mashup)	DJ Einarsson
Top of the Pops 2011 (feat. The Pops)	Mashup Germany
Set Fire To Everybody (feat Mashup)	Adele vs. Skillet
Mashup: The Dance 2011 - The Followup A. WAG 2011	Major Lazer
Mash-Up	Gym Class Heroes
Whomp Ghent Mashup	Heyoka
I Want It All - We Will Rock You Mashup - Buckle Punch - Original Motion Picture Soundtrack	Queen
Super YoYo Mashup	Louis Santana
There's No Business Like Show Business Mashup: Buckle Up	Original
The Big Mash-Up	Ame
Ladyhawke Mashup	Ladyhawke
The Garden Mashup	MadTomb

find songs titled mashup.
when an item is selected, find youtube videos about Title.
when a video item is selected, post video link to my wall.



SCRATCH

= puzzle-like paradigm



Lessons learned about non-programmers

They don't know what **services** are

They don't know what **widgets** are

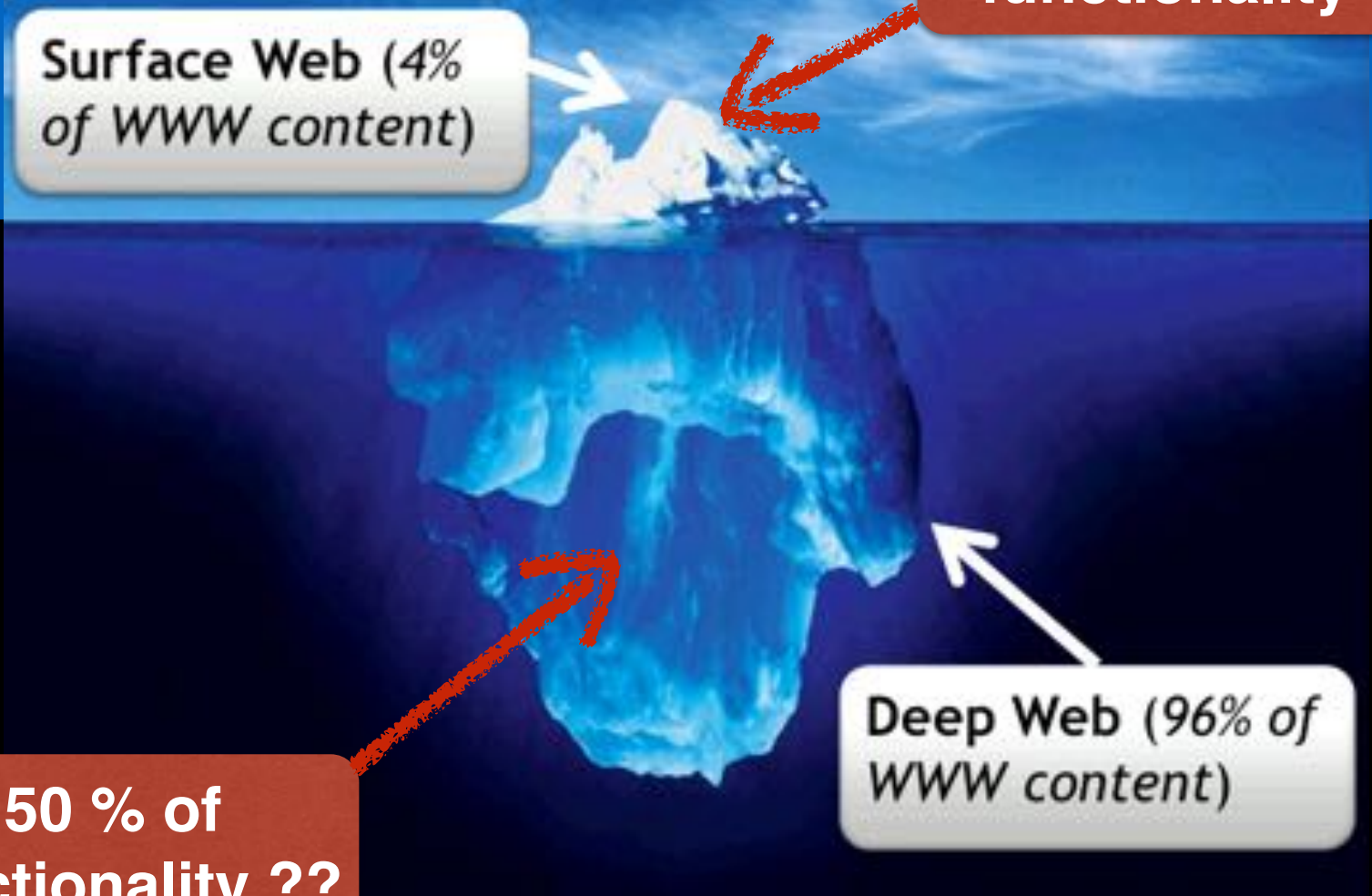
They don't know what **data mappings** are

They **don't care** about knowing that

They already struggle with their **own business**

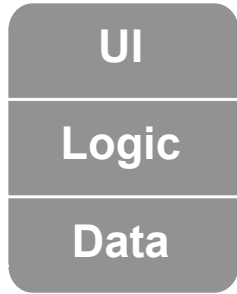
What they do everyday is...

browsing the Web and **operating UIs**

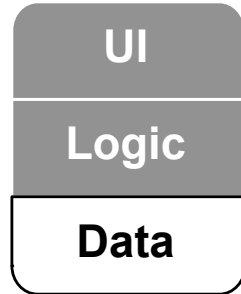


Let's try to interpret the **UI as API**

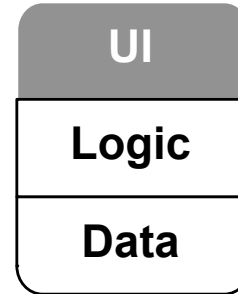
Use cases



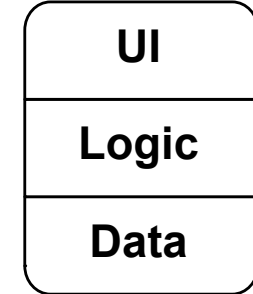
(a) Operating UI



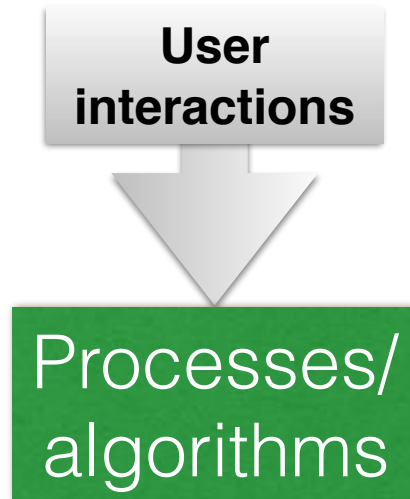
(b) Extracting data



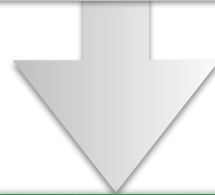
(c) Extracting logic



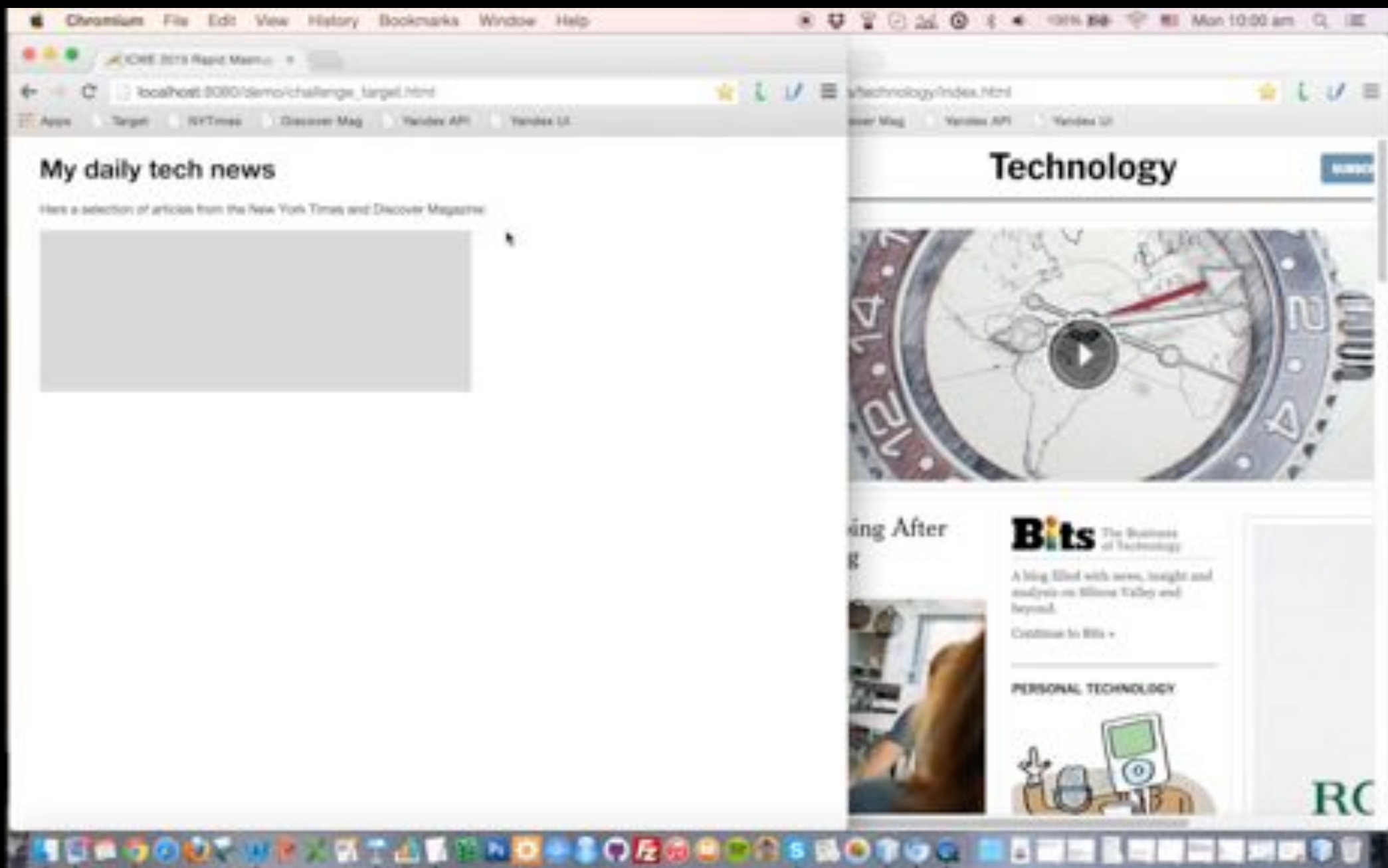
(d) Cloning UI



Tables, lists



Data
sources



iAPI (interactive API) **annotation** format

Properties	
h-iapi	Qualifies the annotated HTML element as iAPI (requires a valid HTML id attribute)

Properties	
e-data:<i>label</i>	Qualifies the iAPI as data source; <i>label</i> provides a human-readable name for the data
e-item:<i>label</i>	Identifies data items inside a feed of data; <i>label</i> gives a name to data items
p-attr:<i>label</i>	Structures data items into attributes; <i>label</i> gives names to data attributes

Example

```
<table id="1" class="h-iapi e-data:Publications">
  <tr class="e-item:Publication">
    <td class="p-attr:Authors">F. Daniel and A. Furlan</td>
    <td class="p-attr:Title">The Interactive API (iAPI)</td>
    <td class="p-attr:Event">ComposableWeb 2013</td>
  </tr>
  ...
</table>
```

External **annotation** of data sources

Supervised by a team of scholars, each a specialist in his field, *The Works of William James* fills the long-standing need for an authoritative, standard edition of the philosopher's works. The General Editor and supervisor of the project is **Frederick Burkhardt**, Mr. Burkhardt, formerly a professor of philosophy and then a college resident, is President Emeritus of the American Council of Learned Societies. The Textual Editor, **Fredson Bowers**, Linden Kent Professor of English, Emeritus, at the University of Virginia, is in charge of the establishment of the text and its production according to standards of the Modern Language Association's Committee on Scholarly Editions. Gold Medalist of the Bibliographical Society, Fellow of the American Academy of Arts and Sciences, and Corresponding Fellow of the British Academy, Mr. Bowers is the author of two books on the theory and practice of textual editing. **Ignace K. Skrzypczak**, the Associate Editor, contributes the volume's introduction and has conducted extensive research in the James collection.

Below is a list of in-print works in this collection, presented

Sort by title, author, format, publication date, or price »



Psychology: Briefer Course

James, William

Despite its title, *Psychology: Briefer Course* is a clear and highly available introduction to James's psychological writings.



Essays in Psychological Research

James, William

The more than fifty articles, essays, and lectures over a span of some twenty-five years, together simply show that James's work in psychology was profound. **McDermott**, in his introduction, discusses



Essays, Comments, and Reviews

James, William

This previous volume gathers together the essays and reviews of this definitive edition of James's works. The volume includes 25 essays, 44 letters to the editor commenting on ready topics, and 111 reviews of a wide range of works in English, French, German, and Italian. Twenty-three of the items are not recorded in any bibliography of James's writings.



Manuscript Essays and Notes

James, William

When **William James** died in 1910 he left a large body of manuscript material that has never appeared in print. The most important of these manuscripts are those of the years 1903 and 1904 called "The Masses and the One." The manuscripts in the rest of the volume contain James's reflections over a period of forty years in the form of drafts, memoranda, and notebook entries. The diverse subjects

Screen Recorder

Number:

Phone:

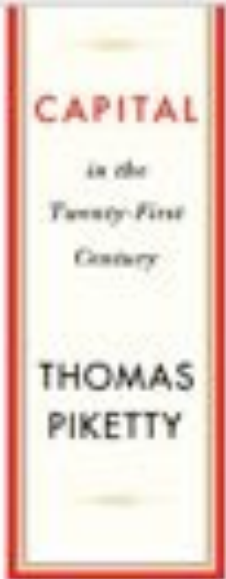
Color:

Frame rate:

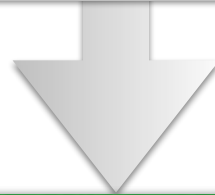
Result:

Click "Start Record" to record the screen.
To stop recording press F10 or click icon on the screen key.

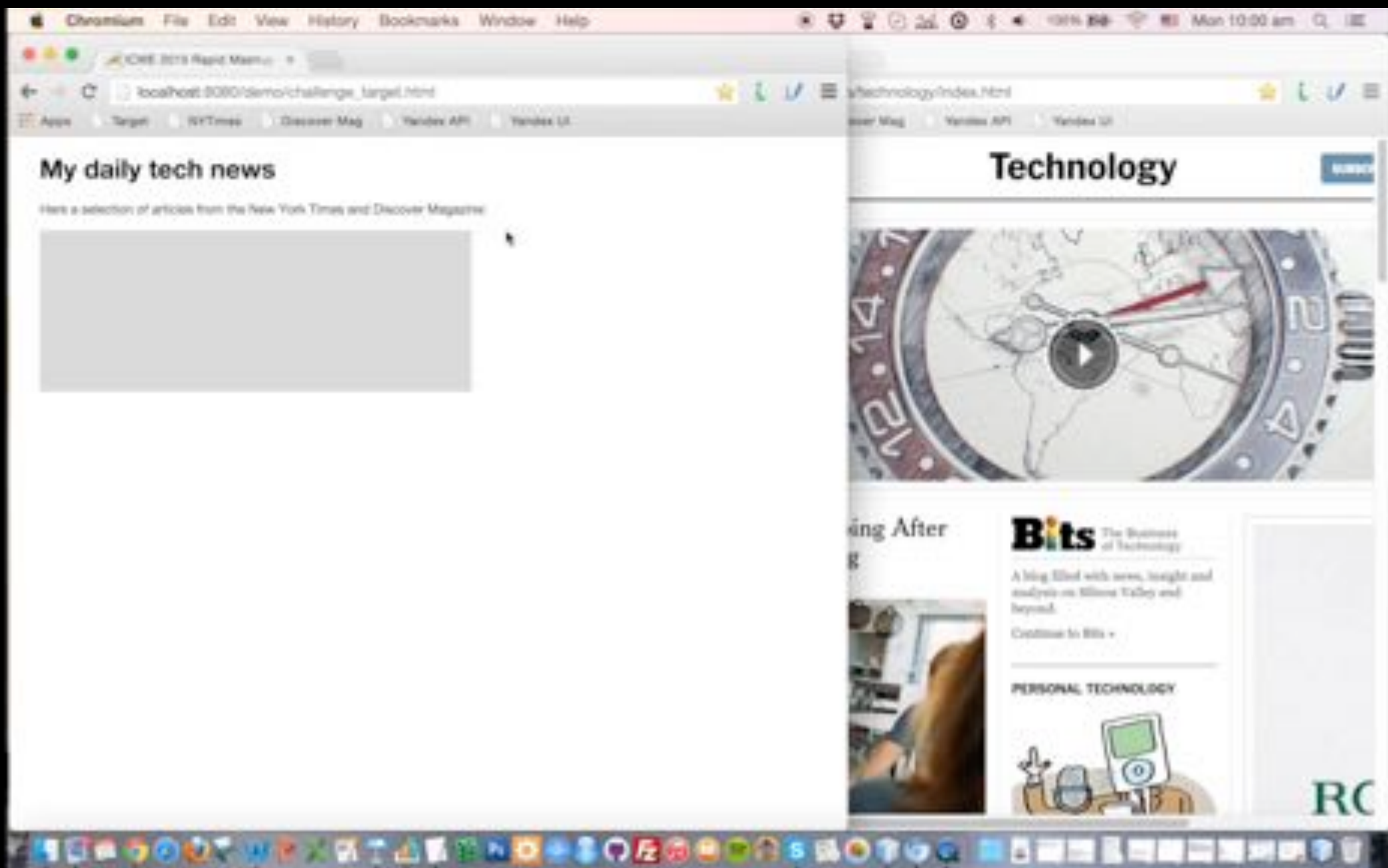
Like us on facebook
Connect with the Python community on Facebook.



Forms



Web
services





target page

drop the select Widget

one
two
three
four
five

SAP SRC PAGE	The Interactive API (IAP)	Proceedings of ComposableWeb 2013	IEEE	ABSTRACT
J. Jara, F. Daniel, F. Casati and M. Marchese	From a Simple Flow to Social Applications	Proceedings of ComposableWeb 2013	Proceedings of ComposableWeb 2013	Proceedings of ComposableWeb 2013



Two	Two	Two	Two	Two
J. Jara, F. Daniel, F. Casati and M. Marchese	From a Simple Flow to Social Applications	Proceedings of ComposableWeb 2013	Proceedings of ComposableWeb 2013	Proceedings of ComposableWeb 2013
A. Bouquety, Q. Z. Sheng and F. Daniel	Web Services Foundations	Springer, July 2013	Proceedings of ComposableWeb 2013	Proceedings of ComposableWeb 2013
A. Bouquety, Q. Z. Sheng and F. Daniel	Advanced Web Services	Springer, July 2013	Proceedings of ComposableWeb 2013	Proceedings of ComposableWeb 2013
F. Daniel, F. Dolog and Q. Li	Web Engineering	Springer, June 2013	Proceedings of ComposableWeb 2013	Proceedings of ComposableWeb 2013

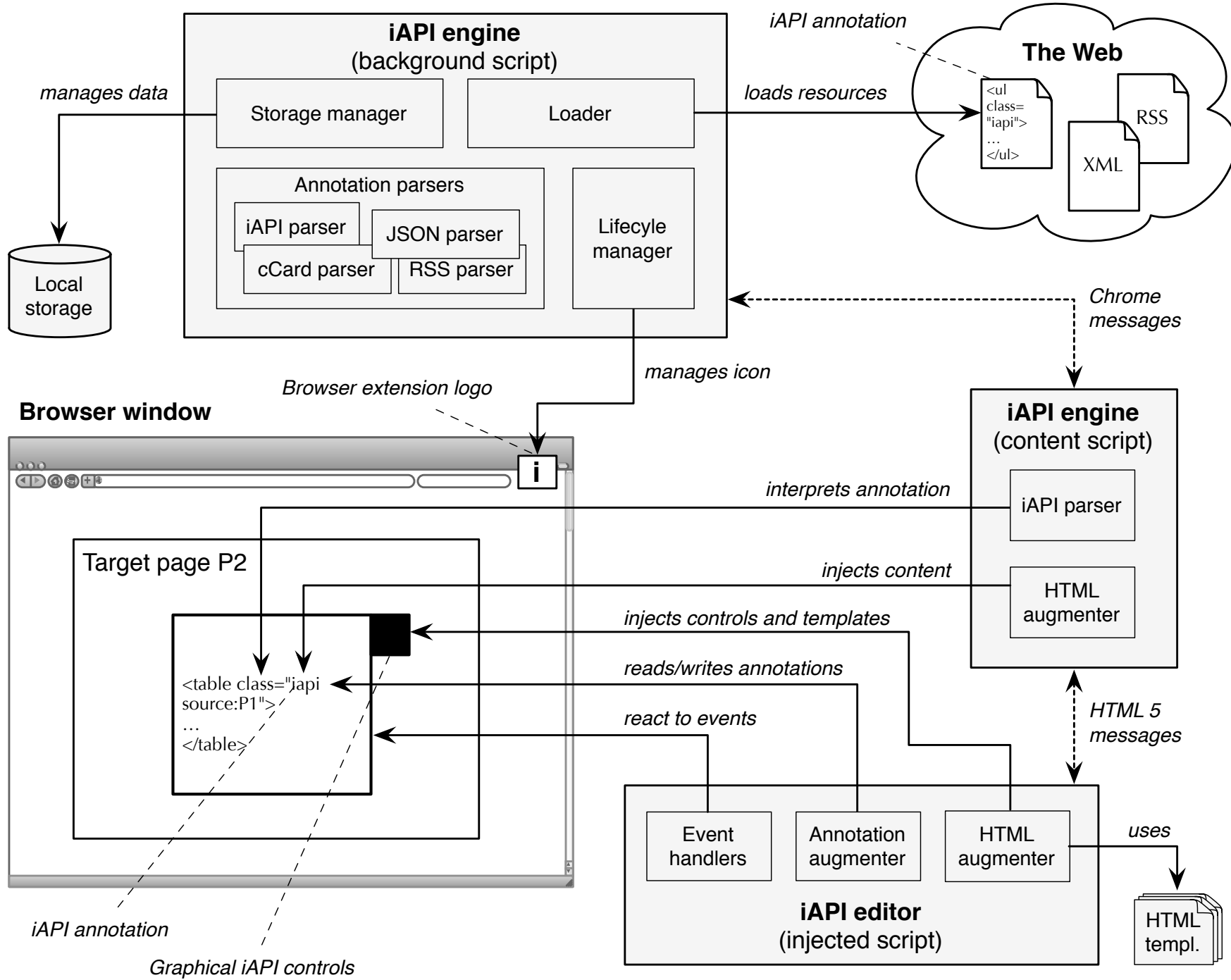
Info Header 1	Info Header 2	Info Header 3
---------------	---------------	---------------

Text 1A Text 1B Text 1C

Text 2A Text 2B Text 2C



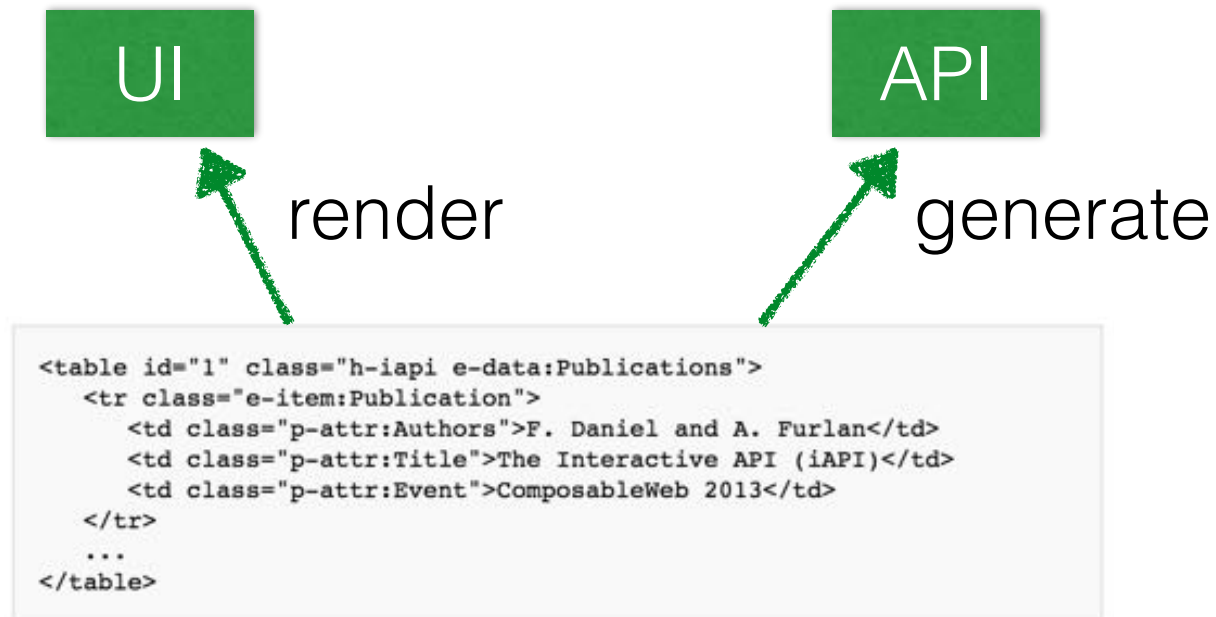
UI-oriented computing **middleware**



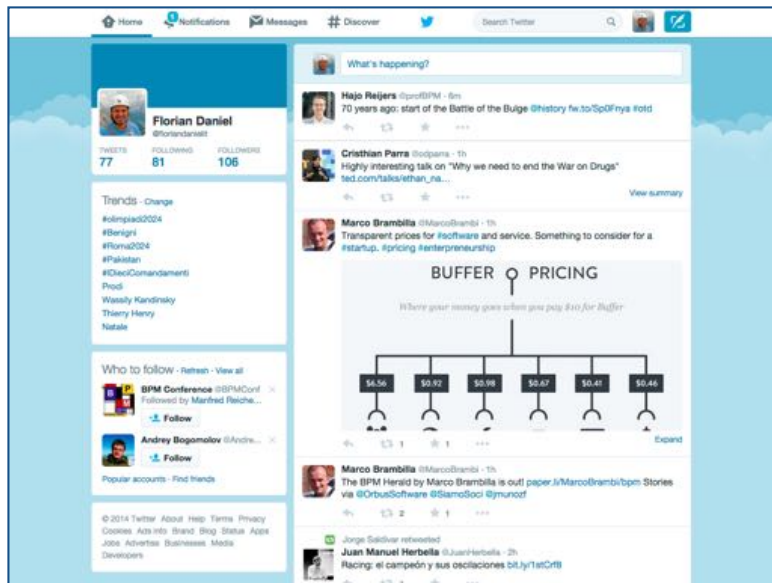
It's all just an **idea**, but if it worked...

...there would be some interesting **benefits**

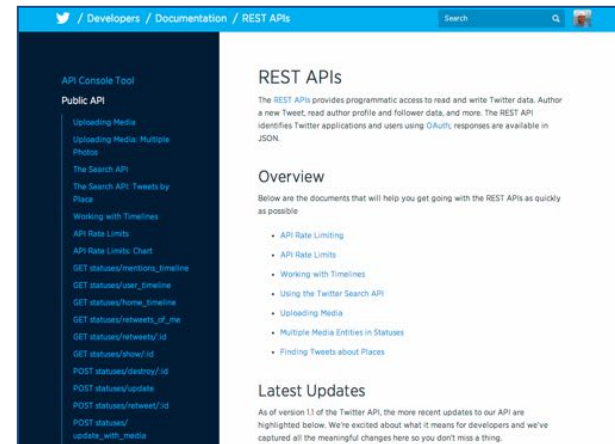
The **deployment** of iAPIs is contextual to the deployment of their host application



The **documentation** of iAPIs comes for free: the UI tells everything; no need for descriptors or IDLs.



VS.

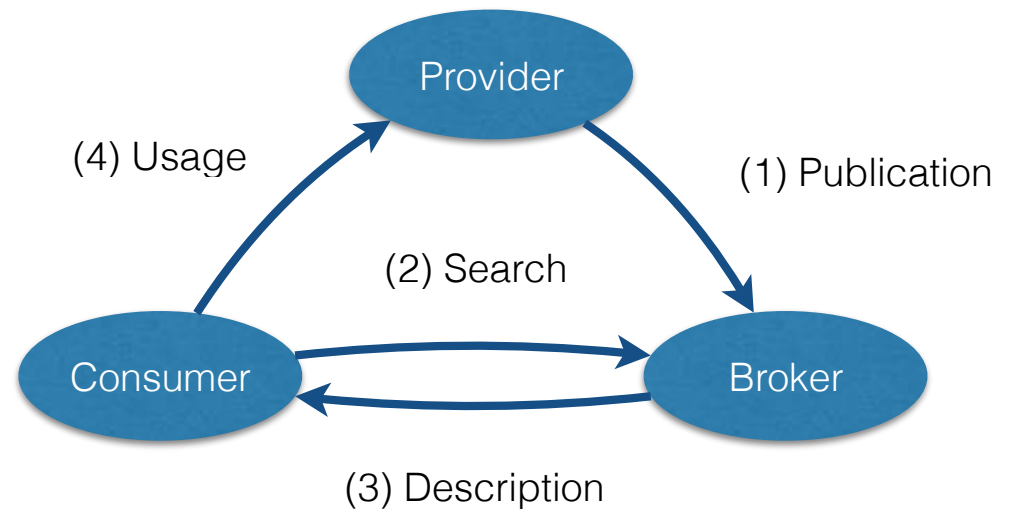


SOAP, REST, WSDL,
WADL, WSCI, WS-CDL

Searching iAPIs does not require any new infrastructure or query paradigm: simple Web search does the job

The logo for Google Italiano, featuring the word "Google" in its multi-colored font and "Italiano" in a smaller, blue font below it.A simple white search input field with a thin grey border and a small microphone icon on the right side.

vs.



Composing iAPIs is as intuitive as browsing the Web;
no need for programming skills.

Point and click

By example

Copy and paste

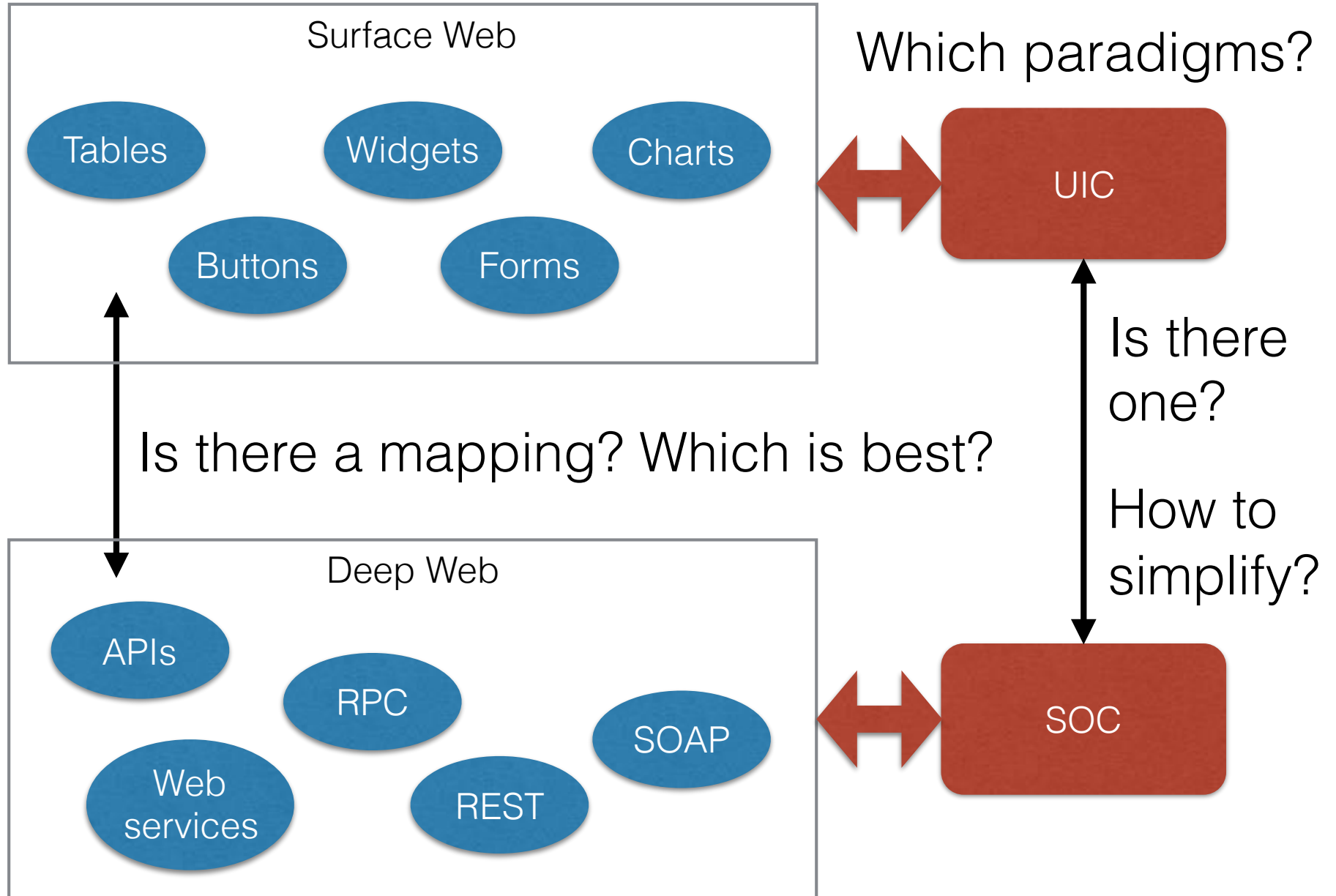
Record

Re-play

Drag and drop

The challenges

Which abstractions?



And lots more...

As said, it's all still an **experiment**. But...

...let's try to make composition **more accessible.**

You too!