Browsing Highly Interconnected Humanities Databases Through Multi-Result Faceted Browsers

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Summary

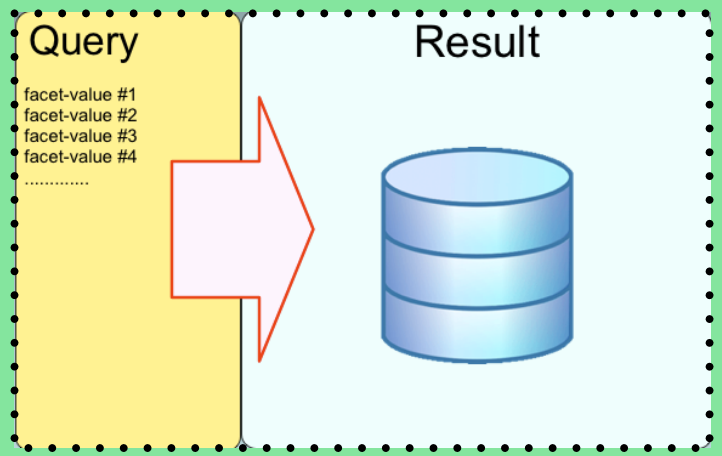
1. **Background**. Interaction models in search interfaces: retrieval model vs explorational model

2. **Approach**. DJFacet, a multi-result dynamic taxonomies search system

3. **Evaluation**. Strengths and weaknesses; future work

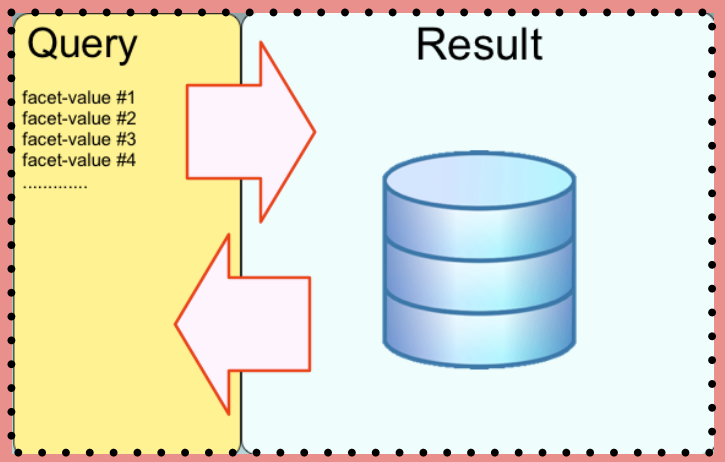
Background: two models of interaction

Retrieval Model



VS

Exploration model



DYNAMIC TAXONOMIES AND FACETED SEARCH, Giovanni Maria Sacco, Sébastien Ferré and Yannis Tzitzikas, *The Information Retrieval Series*, 2009, Volume 25, 35-74.

Retrieval model: structured search

Query

Google scholar **Advanced Scholar Search**

Find articles	with **all** of the words	
	with the **exact phrase**	
	with **at least one** of the words	
	without the words	
	where my words occur	anywhere in the article
Author	Return articles written by	e.g., *"PJ Hayes"* or *McCarthy*
Publication	Return articles published in	e.g., *J Biol Chem* or *Nature*
Date	Return articles published between	— e.g., *1996*
Collections	**Articles and patents**	

Search articles in all subject areas (include patents).

Search only articles in the following subject areas:

- Biology, Life Sciences, and Environmental Science
- Business, Administration, Finance, and Economics
- Chemistry and Materials Science
- Engineering, Computer Science, and Mather tics

Scholar | Articles and patents | anytime | include citations | Create email alert

Implementing **faceted** classification for software reuse
R Prieto-Diaz - Communications of the ACM, 1991 - portal.acm.org
LJbrao/Concepts A fundamental problem in soft- ware reuse is organizing collections of reusable components for effec- tive search and retrieval. The con- cept of **faceted** classification intro- duced in [3, 4] presents a partial solution to this problem. **Faceted** classification offers certain ...
Cited by 602 - Related articles - All 7 versions

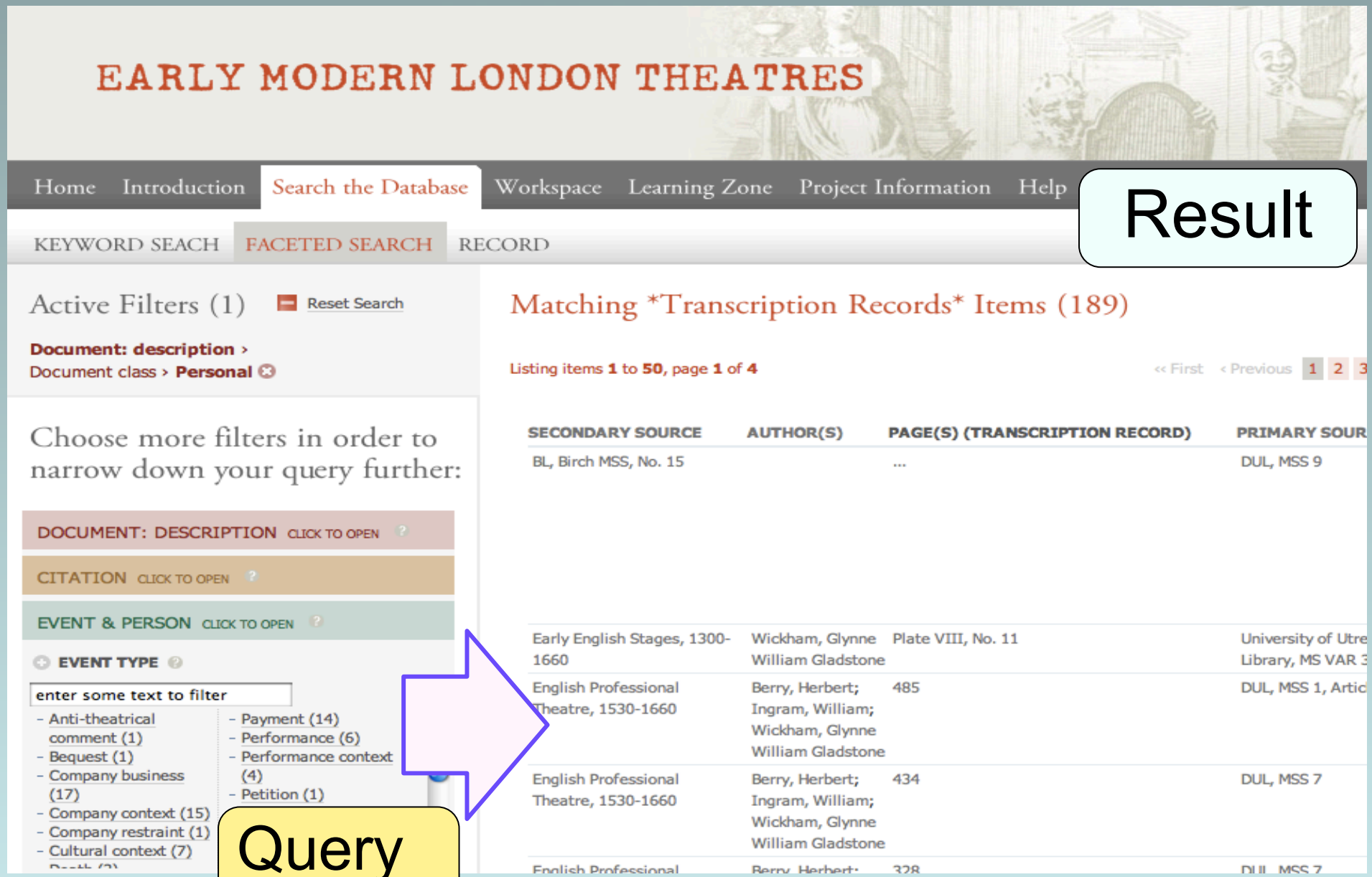
Multi-**faceted** regulation of cell differentiation by extracellular matrix
CQ Lin... - The FASEB journal, 1993 - FASEB
Page 1. Multi-**faceted** regulation of cell differentiation by ... models could provide powerful tools not only for under- standing regulation of normal cell function but also for the studies of tumorigenesis and possibly cancer ther- apy.-Lin, C. Q, Bissell, M. J. Multi-**faceted** regulation ...
Cited by 419 - Related articles - BL Direct - All 5 versions

Faceted metadata for image search and browsing
KP Yee, K Swearingen, K Li... - Proceedings of the SIGCHI ..., 2003 - portal.acm.org
ABSTRACT There are currently two dominant interface types for searching and browsing large image collections: keyword- based search, and searching by overall similarity to sample images. We present an alternative based on enabling users to navigate along conceptual ...
Cited by 583 - Related articles - BL Direct - All 45 versions

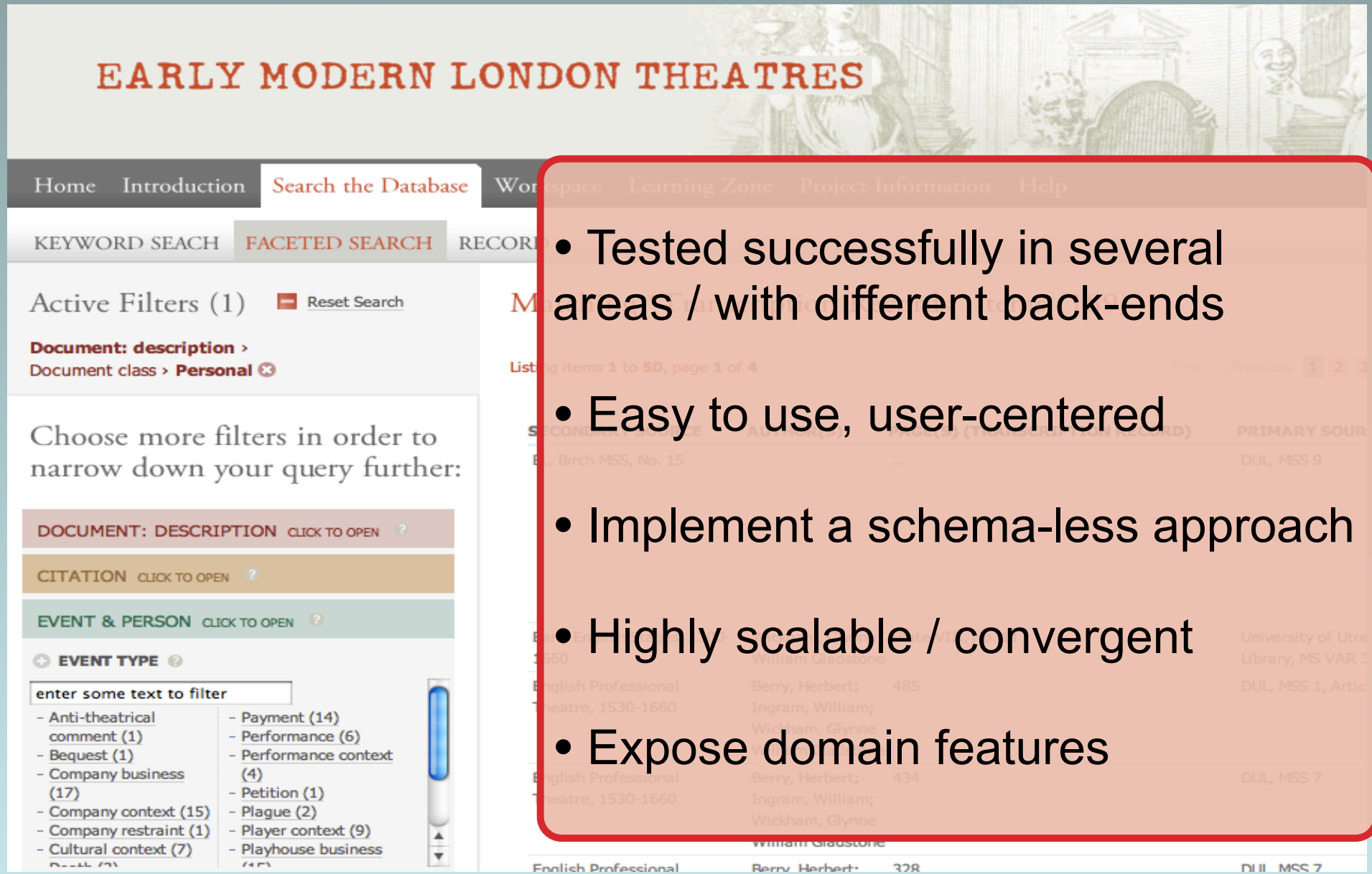
Case study research: a multi-**faceted** research approach for IS
ALM Cavaye - Information Systems Journal, 1996 - Wiley Online Library
... Case study research: a multi-**faceted** research approach for IS. ALM Ca
online: 28 JUN 2008. ... How to Cite. Cavaye, A. (1996), Case study resear
research approach for IS. Information Systems Journal, 6: 227–242. ...
Cited by 340 - Related articles - All 2 versions

Result

Explorational model: faceted search systems



Explorational model: faceted search systems



- Tested successfully in several areas / with different back-ends
- Easy to use, user-centered
- Implement a schema-less approach
- Highly scalable / convergent
- Expose domain features

The Retrieval model explained

Facet #1

facet-value #1
facet-value #2
facet-value #3
facet-value #4
.....

Facet #2

facet-value #1
facet-value #2
facet-value #3
facet-value #4
.....

Facet #3

facet-value #1
.....
.....

Information Space

The Explorational model explained

Facet #1

facet-value #1
facet-value #2
facet-value #3
facet-value #4
.....

Facet #2

facet-value #1
facet-value #2
facet-value #3
facet-value #4
.....

Facet #3

facet-value #1
.....
.....

Information Space

Self Adapting
Exploration Structures

Extending the model: multiple result types

Facet #1

facet-value #1
facet-value #2
facet-value #3
facet-value #4
.....

Facet #2

facet-value #1
facet-value #2
facet-value #3
facet-value #4
.....

Facet #3

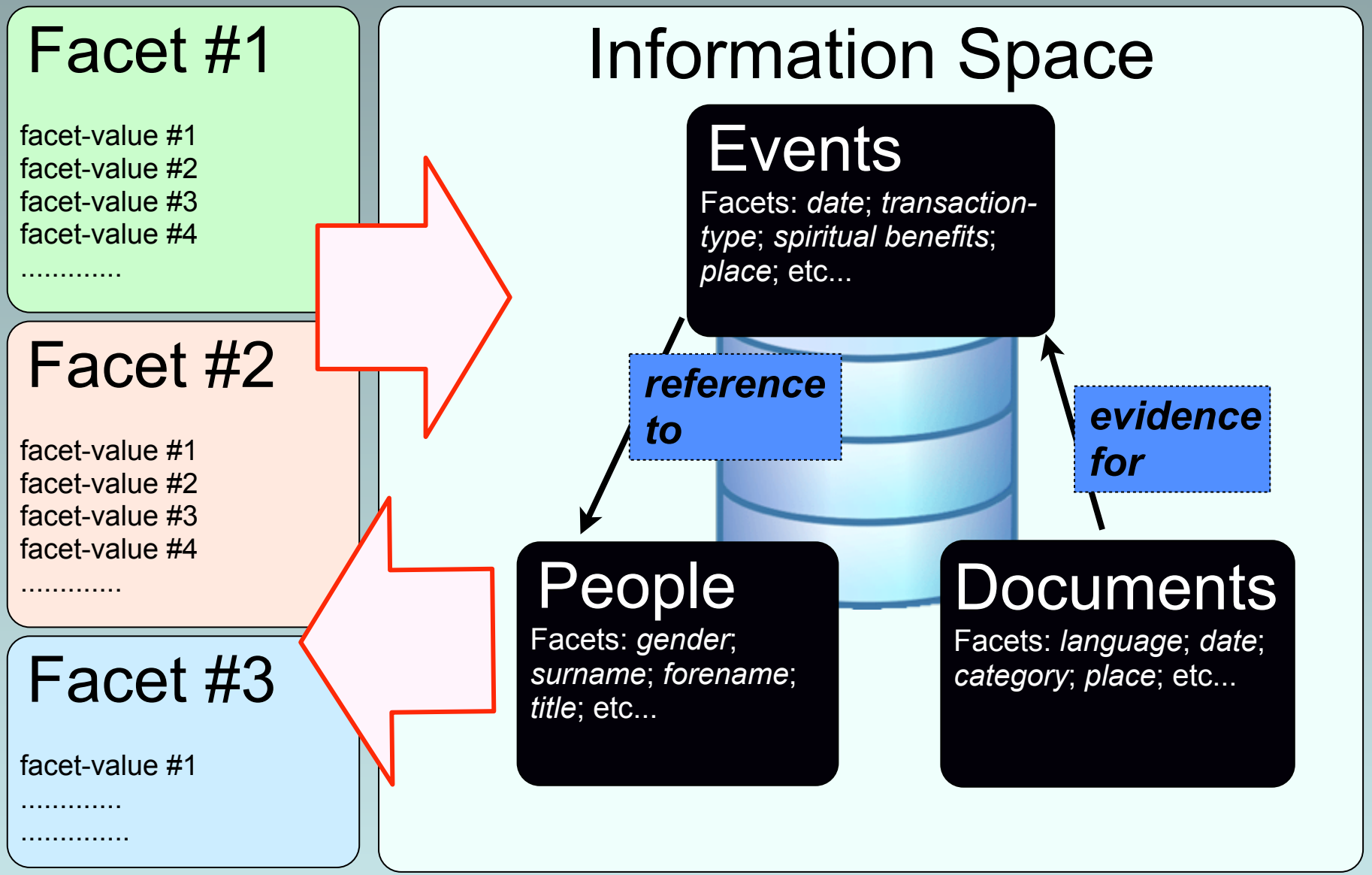
facet-value #1
.....
.....

Information Space

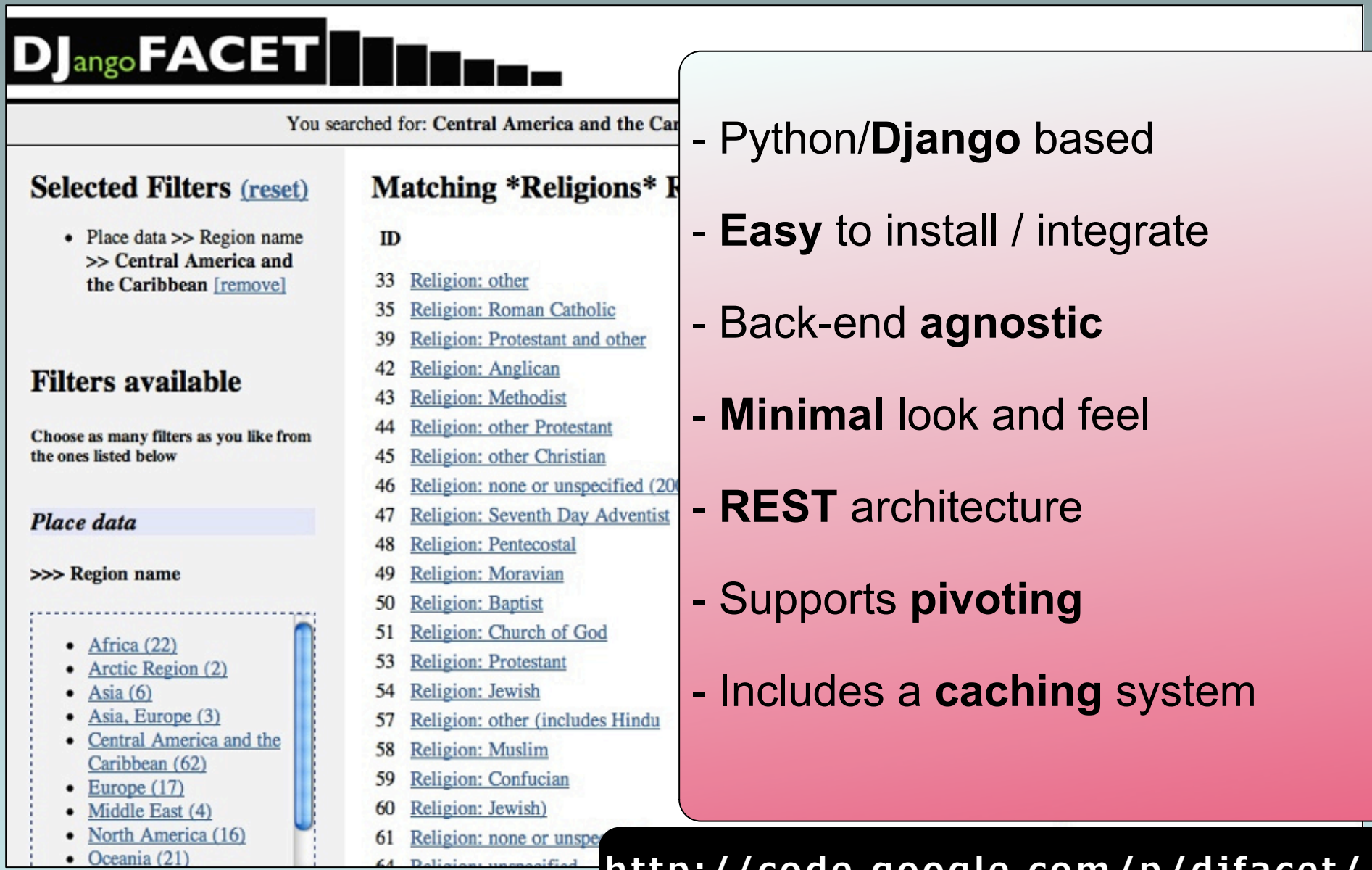
Result-type
(normally unique and stable)

E.g.: *cars*, *documents*, *people*

Extending the model: multiple result types



DJango Facet: a Python multi-result FSS



- Python/**Django** based
- **Easy** to install / integrate
- Back-end **agnostic**
- **Minimal** look and feel
- **REST** architecture
- Supports **pivoting**
- Includes a **caching** system

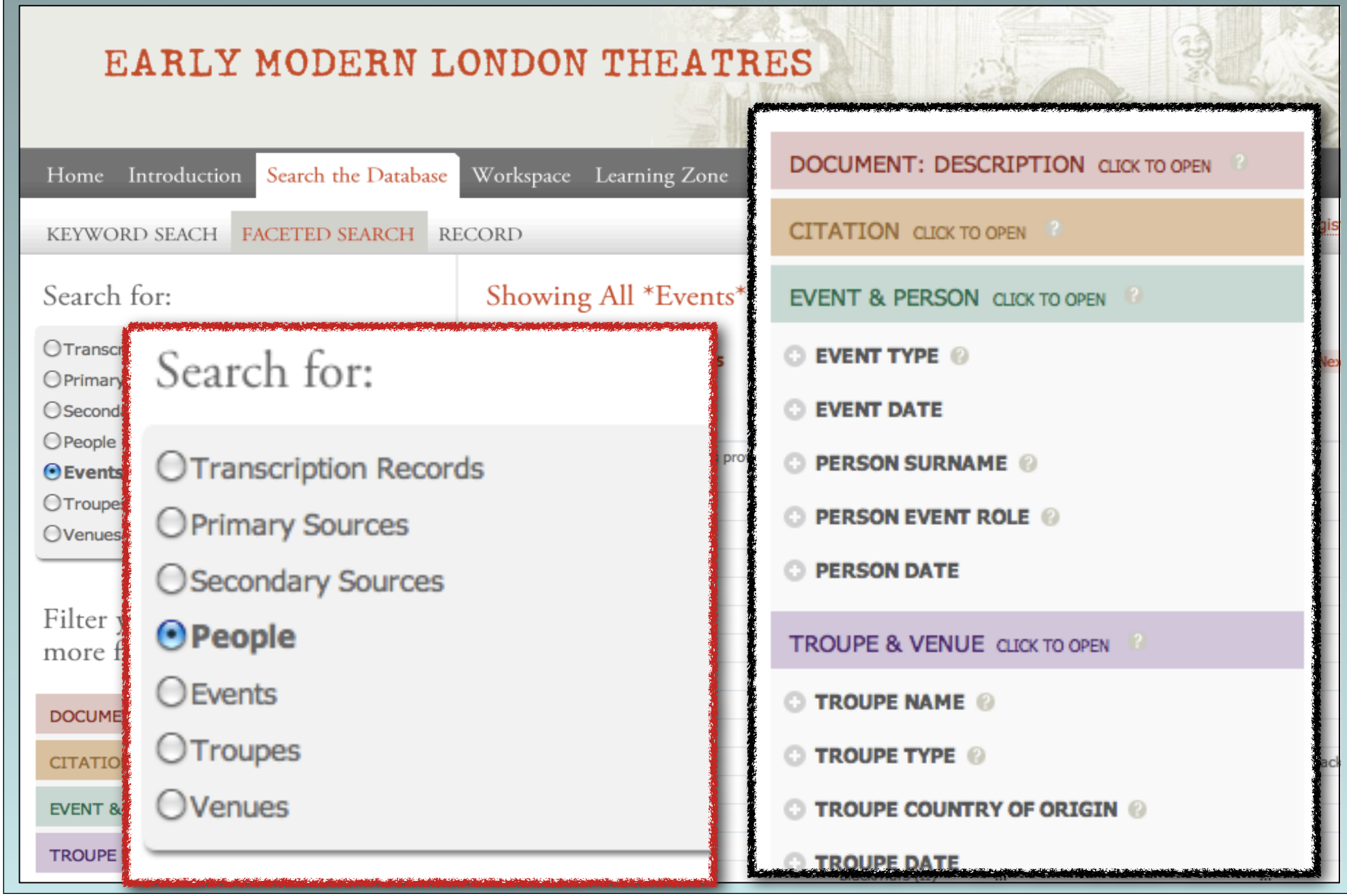
http://code.google.com/p/djfacet/

DJango Facet: a Python multi-result FSS

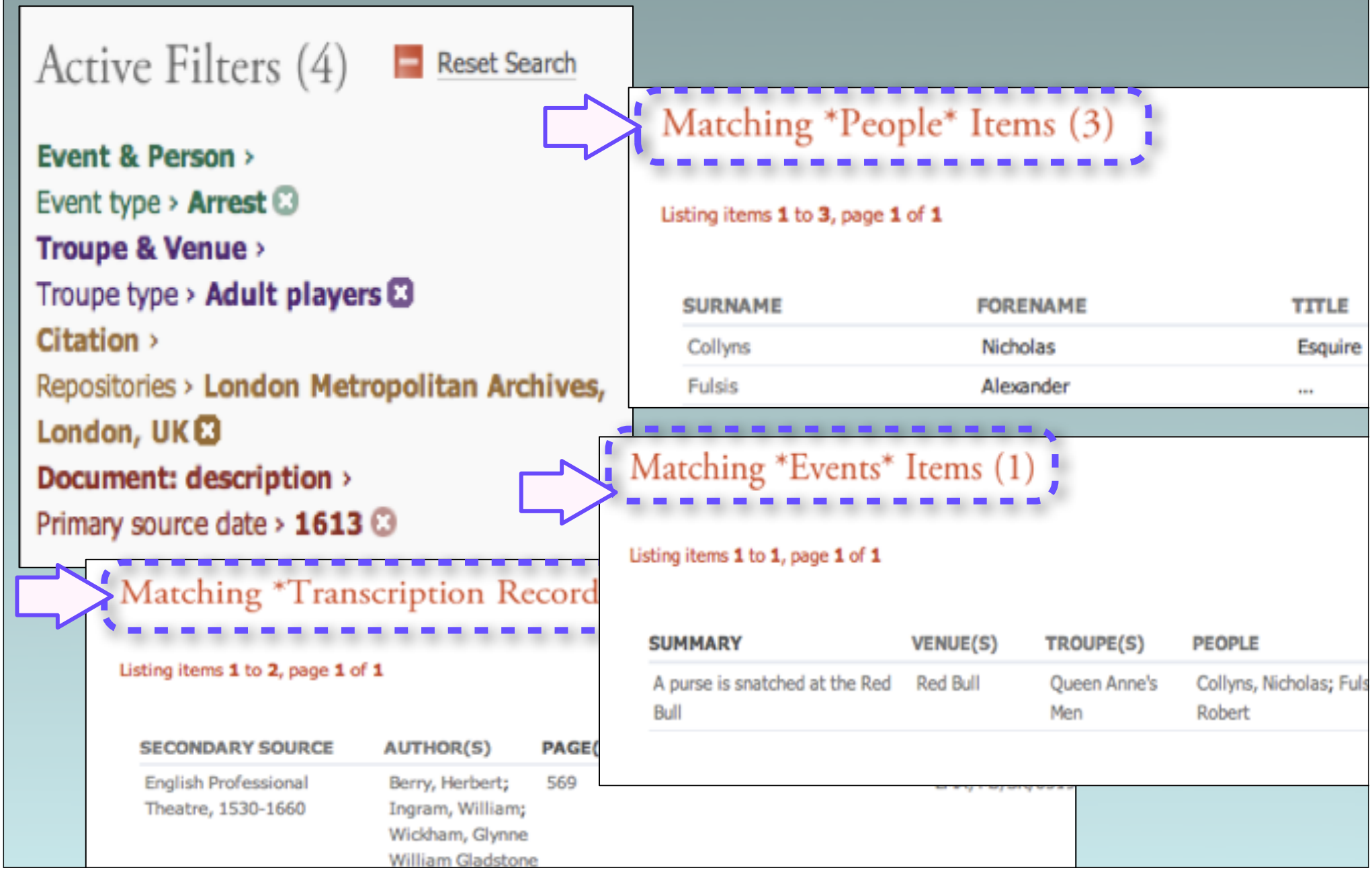
```
facetslist = [
            {'appearance' : {
                        'label' : 'Person name' ,
                        'uniquename' : 'personname',
                        'model' : Person ,
                        'dbfield' : "name",
                        'displayfield' : "name",
                        'grouping'      : ['personinfo'],
                              } ,
            'behaviour' :  [{
                        'resulttype' : 'persons',
                        'querypath' : 'name',
                              },
                        {
                        'resulttype' : 'events',
                        'querypath' : 'associatedpeople__name',
                              },
                       {
                        'resulttype' : 'documents',
                        'querypath' : 'associatedfactoids__associatedpeople__name',
                              },
                        ]},
                  ]
```

Case studies: POMS <www.poms.ac.uk>

Case studies: EMLOT <www.emlot.kcl.ac.uk>



EMLOT: complex queries made simple



EMLOT: complex queries.. still complex!

Facet:
Place of publication:

"London"

&&

Facet:
Venue Name:

"Phoenix/ Cockpit"

&&

Facet:
Person Role:

"Playwright"

&&

Facet:
Troupe type:

"Adult players"

- Tr. records
- Events
- Sources
- People
- Troupes
- Venues

Evaluation

- **Purpose**:
  - improving the general efficiency of DJFacet
  - testing the intuitiveness of the search and navigation facilities;
  - testing the comprehension of the specific facets we are using
  - testing the comprehension of the ‘multi-result’ approach

- **Setup**:
  - 8 people
  - face to face sessions of 30-60 minutes
  - recorded using screen-casting software
  - the performance is analysed and annotated afterwards

- **Tasks**:
  - incremental difficulty
  - level 0: warming up, exploring the interface (facets and result types)
  - level 1: queries with 1 facet
  - level 2: queries involving 2 facets
  - level 3: queries involving 3 or more facets

Evaluation results

Comprehension of the intended meaning of facets	- In general, quite positive - Document-class and document-type are very ambiguous - Some of the terms within the facets are not easy to interpret: eg the ‘staging context’ event-type.
Generic UI issues	- Facets’ role in a search is more intuitive when they are open - Clear separation between controls and results - Result-type switches are not obvious, people confuse them with “other” facet controls
Comprehension of the significance of results	- Pivoting action is not explained properly - People with no familiarity with the domain don’t get the implicit relations between result-types - People with familiarity with the domain perform quite well

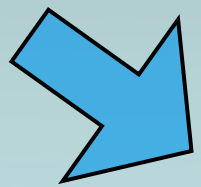
Evaluation results: future work

- Cues that help users **understand** the **DB model**:
  - **static** section in the help menu
  - **dynamic** 'query explanation' mechanism
    - via graphical diagram providing a visual representation of the query
    - via a natural language rendering of the query

- Messages that help users notice the '**pivoting**' action:
  - popups before changing result-type
  - make this control less prominent when filters are already selected

- An evaluation on the other DB is planned for **September**:
  - new version of DJFacet available soon
  - more details about the evaluation to be published in autumn

... thanks!



http://code.google.com/p/djfacet/

www.michelepasin.org/software/djfacet

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