

Browsing Highly Interconnected **Humanities** Databases Through Multi- Result **Faceted** Browsers

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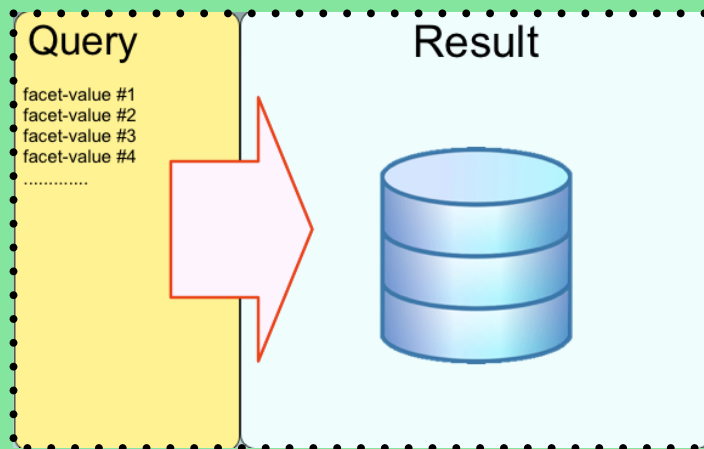
www.michelepasin.org/software/djfacet

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

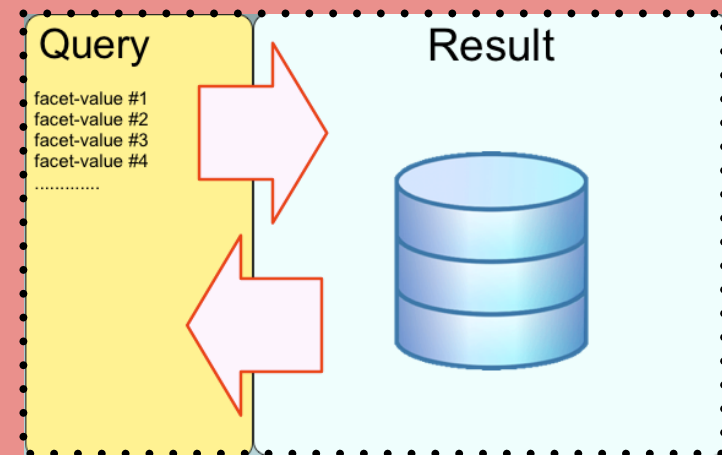
Background: two models of interaction

Retrieval Model



VS

Exploration model



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

Author Return articles written by

Publication Return articles published in

Date Return articles published between

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 Mathematics

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
LJ/brao/Concepts A fundamental problem in soft-ware reuse is organizing collections of reusable components for effective search and retrieval. The concept of **faceted** classification introduced 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 understanding regulation of normal cell function but also for the studies of tumorigenesis and possibly cancer therapy.-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 Cavaye
online: 28 JUN 2008. ... How to Cite. Cavaye, A. (1996). Case study research
research approach for IS. Information Systems Journal, 6: 227-242. ...
Cited by 340 - Related articles - All 2 versions

Result

Explorational model: faceted search systems

EARLY MODERN LONDON THEATRES

Home Introduction **Search the Database** Workspace Learning Zone Project Information Help

KEYWORD SEARCH **FACETED SEARCH** RECORD

Active Filters (1) [Reset Search](#)

Document: description >
Document class > **Personal**

Choose more filters in order to narrow down your query further:

DOCUMENT: DESCRIPTION [CLICK TO OPEN](#)

CITATION [CLICK TO OPEN](#)

EVENT & PERSON [CLICK TO OPEN](#)

EVENT TYPE

- Anti-theatrical comment (1)
- Bequest (1)
- Company business (17)
- Company context (15)
- Company restraint (1)
- Cultural context (7)
- Death (3)
- Payment (14)
- Performance (6)
- Performance context (4)
- Petition (1)

Matching *Transcription Records* Items (189)

Listing items 1 to 50, page 1 of 4

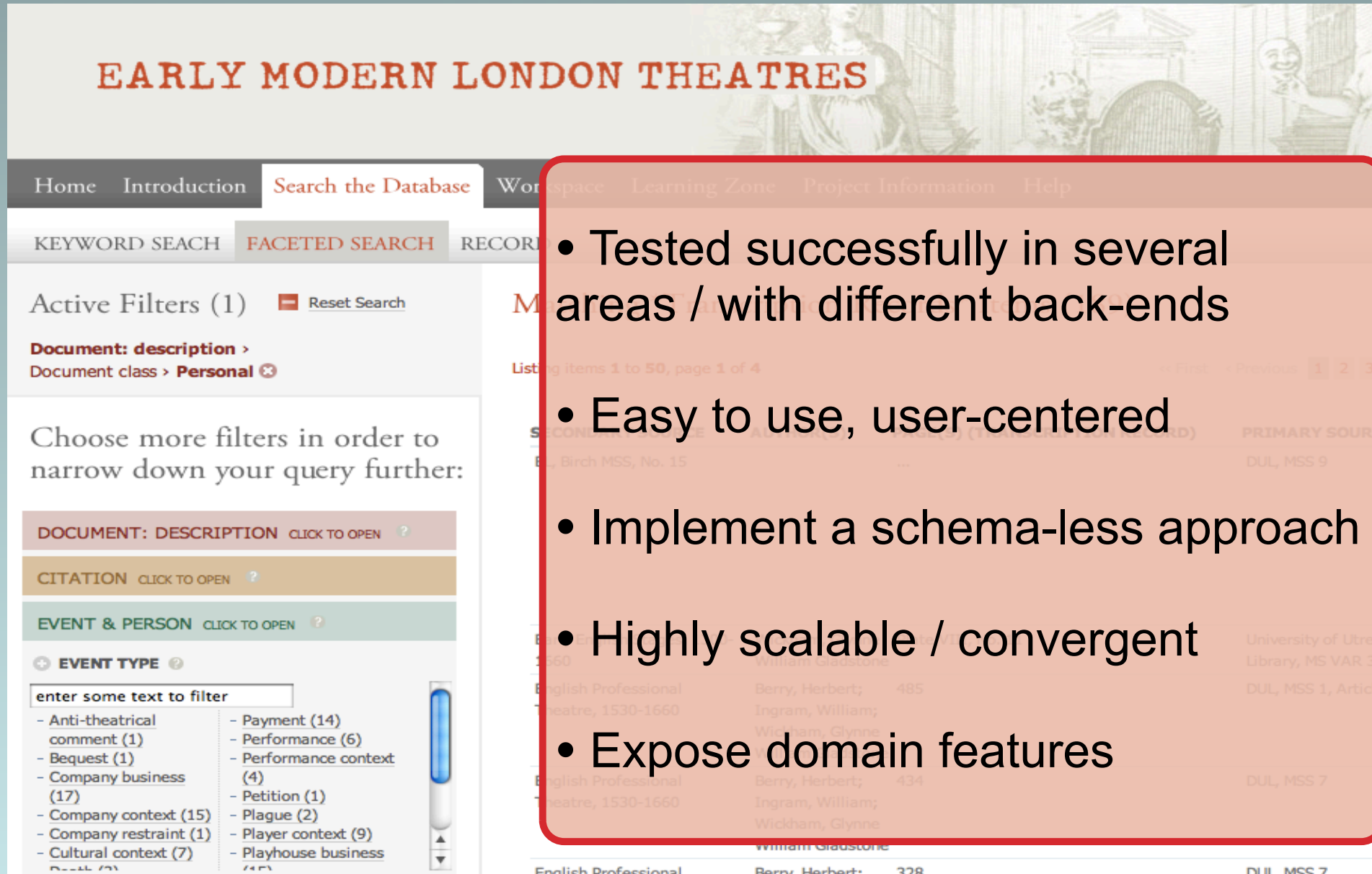
[<< First](#) [< Previous](#) [1](#) [2](#) [3](#)

SECONDARY SOURCE	AUTHOR(S)	PAGE(S) (TRANSCRIPTION RECORD)	PRIMARY SOURCE
BL, Birch MSS, No. 15		...	DUL, MSS 9
Early English Stages, 1300-1660	Wickham, Glynne William Gladstone	Plate VIII, No. 11	University of Utrecht Library, MS VAR 3
English Professional Theatre, 1530-1660	Berry, Herbert; Ingram, William; Wickham, Glynne William Gladstone	485	DUL, MSS 1, Article
English Professional Theatre, 1530-1660	Berry, Herbert; Ingram, William; Wickham, Glynne William Gladstone	434	DUL, MSS 7
English Professional	Berry, Herbert;	328	DUL, MSS 7

Result

Query

Explorational model: faceted search systems



EARLY MODERN LONDON THEATRES

Home Introduction **Search the Database** Workspace Learning Zone Project Information Help

KEYWORD SEARCH **FACETED SEARCH** RECORDS

Active Filters (1) [Reset Search](#)

Document: description >
Document class > **Personal** [✕](#)

Choose more filters in order to narrow down your query further:

DOCUMENT: DESCRIPTION [CLICK TO OPEN](#) [?](#)

CITATION [CLICK TO OPEN](#) [?](#)

EVENT & PERSON [CLICK TO OPEN](#) [?](#)

EVENT TYPE [?](#)

enter some text to filter

- Anti-theatrical comment (1)
- Bequest (1)
- Company business (17)
- Company context (15)
- Company restraint (1)
- Cultural context (7)
- Payment (14)
- Performance (6)
- Performance context (4)
- Petition (1)
- Plague (2)
- Player context (9)
- Playhouse business (14)

Listing items 1 to 50, page 1 of 4

SECONDARY SOURCE	AUTHOR	DATE	PRIMARY SOURCE
English Professional Theatre, 1530-1660	Berry, Herbert;	485	DUL, MSS 9
English Professional Theatre, 1530-1660	Ingram, William;	434	DUL, MSS 7
English Professional Theatre, 1530-1660	Wickham, Glynn	434	DUL, MSS 7
English Professional Theatre, 1530-1660	Berry, Herbert;	434	DUL, MSS 7
English Professional Theatre, 1530-1660	Ingram, William;	434	DUL, MSS 7
English Professional Theatre, 1530-1660	Wickham, Glynn	434	DUL, MSS 7
English Professional Theatre, 1530-1660	William Graftstone	434	DUL, MSS 7

- 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
.....
.....

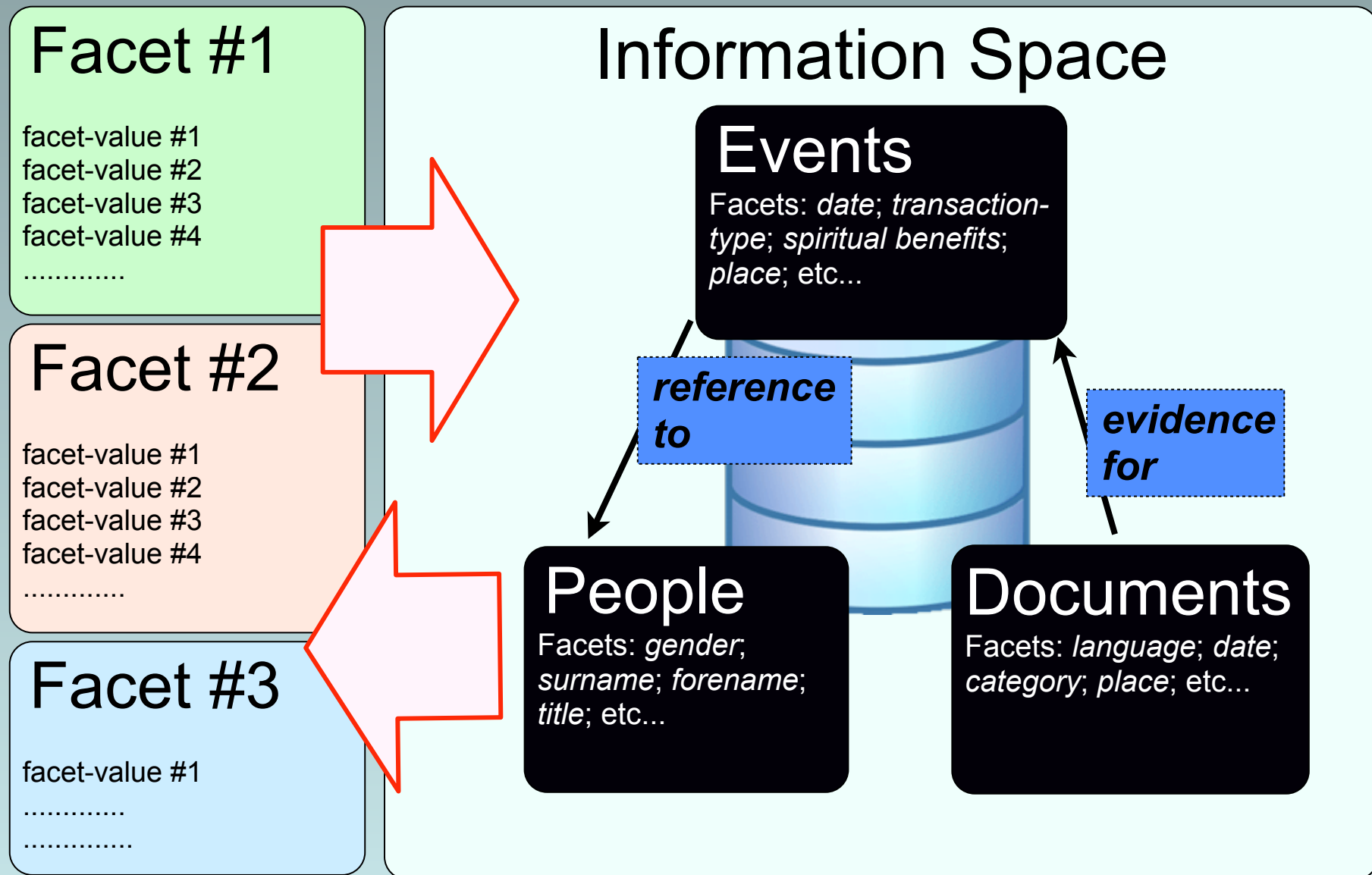
Information Space



Result-type
(normally unique
and stable)

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

Extending the model: multiple result types



Django Facet: a Python multi-result FSS

DJangoFACET

You searched for: Central America and the Caribbean

Selected Filters ([reset](#))

- Place data >> Region name
>> Central America and the Caribbean ([remove](#))

Filters available

Choose as many filters as you like from the ones listed below

Place data

>>> Region name

- [Africa \(22\)](#)
- [Arctic Region \(2\)](#)
- [Asia \(6\)](#)
- [Asia, Europe \(3\)](#)
- [Central America and the Caribbean \(62\)](#)
- [Europe \(17\)](#)
- [Middle East \(4\)](#)
- [North America \(16\)](#)
- [Oceania \(21\)](#)

Matching *Religions* F

ID	
33	Religion: other
35	Religion: Roman Catholic
39	Religion: Protestant and other
42	Religion: Anglican
43	Religion: Methodist
44	Religion: other Protestant
45	Religion: other Christian
46	Religion: none or unspecified (20)
47	Religion: Seventh Day Adventist
48	Religion: Pentecostal
49	Religion: Moravian
50	Religion: Baptist
51	Religion: Church of God
53	Religion: Protestant
54	Religion: Jewish
57	Religion: other (includes Hindu
58	Religion: Muslim
59	Religion: Confucian
60	Religion: Jewish)
61	Religion: none or unspe
64	Religion: unspecified

- 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>

The screenshot displays the POMS website. At the top, a banner features a coat of arms and the title "PARADOX OF MEDIEVAL SCOTLAND 1093-1286". Below this is a navigation bar with links: Home, About the Project, PoMS Database, Feature of the Month, Charter book, Links, Contacts, and Help. A secondary navigation bar includes SEARCH, BROWSE, RECORD, and FAMILY TREES. The main content area is titled "Facets available:" and lists several categories: PEOPLE AND INSTITUTIONS (highlighted in red), SOURCES (grey), and RELATIONSHIPS (green). Under RELATIONSHIPS, there are sub-filters: RELATIONSHIP TYPES, ROLES, and SPIRITUAL BENEFITS, each with a plus icon and a question mark. A search box labeled "enter some text to filter" is present. Below the search box, a list of filters is shown: All Relatives (13), Ancestors (pro anima) (70), Ancestors (pro anima) (1), Friend(s) (pro salute) (2), and Husband (pro anima) (1). To the right, a section titled "Records (215)" shows a filter for "People and Institutions" and a list of "Factoids", "Sources", and "People and Institutions". A box at the bottom right indicates "Listing items 1 to 50, page 1 of 5".

PARADOX OF MEDIEVAL SCOTLAND
1093-1286

Home About the Project PoMS Database Feature of the Month Charter book Links Contacts Help

SEARCH BROWSE RECORD FAMILY TREES

Facets available:

- PEOPLE AND INSTITUTIONS
- SOURCES
- RELATIONSHIPS
 - RELATIONSHIP TYPES ?
 - ROLES ?
 - SPIRITUAL BENEFITS ?

enter some text to filter

All Relatives (13) Friend(s) (pro salute) (2)
Ancestors (pro anima) (70) Husband (pro anima) (1)
Ancestors (pro anima) (1)

Records (215)

Factoids Sources People and Institutions

Listing items 1 to 50, page 1 of 5

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

EARLY MODERN LONDON THEATRES

Home Introduction **Search the Database** Workspace Learning Zone

KEYWORD SEARCH **FACETED SEARCH** RECORD

Search for:

Showing All *Events*

- ☐ Transcription Records
- ☐ Primary Sources
- ☐ Secondary Sources
- ☒ People
- ☐ Events
- ☐ Troupes
- ☐ Venues

Filter by
more filters

DOCUMENT: DESCRIPTION

CITATION

EVENT & PERSON

TROUPE & VENUE

Search for:

- ☐ Transcription Records
- ☐ Primary Sources
- ☐ Secondary Sources
- ☒ **People**
- ☐ Events
- ☐ Troupes
- ☐ Venues

DOCUMENT: DESCRIPTION [CLICK TO OPEN](#) ?

CITATION [CLICK TO OPEN](#) ?

EVENT & PERSON [CLICK TO OPEN](#) ?

+ EVENT TYPE ?

+ EVENT DATE

+ PERSON SURNAME ?

+ PERSON EVENT ROLE ?

+ PERSON DATE

TROUPE & VENUE [CLICK TO OPEN](#) ?


+ TROUPE NAME ?

+ TROUPE TYPE ?

+ TROUPE COUNTRY OF ORIGIN ?

+ TROUPE DATE

EMLOT: complex queries made simple

Active Filters (4)  [Reset Search](#)

Event & Person >

Event type > **Arrest** 


Troupe & Venue >

Troupe type > **Adult players** 

Citation >

Repositories > **London Metropolitan Archives, London, UK** 

Document: description >

Primary source date > **1613** 

Matching *People* Items (3)

Listing items 1 to 3, page 1 of 1

SURNAME	FORENAME	TITLE
Collyns	Nicholas	Esquire
Fulsis	Alexander	...

Matching *Events* Items (1)

Listing items 1 to 1, page 1 of 1

SUMMARY	VENUE(S)	TROUPE(S)	PEOPLE
A purse is snatched at the Red Bull	Red Bull	Queen Anne's Men	Collyns, Nicholas; Fulsis, Robert

Matching *Transcription Record

Listing items 1 to 2, page 1 of 1

SECONDARY SOURCE	AUTHOR(S)	PAGE(S)
English Professional Theatre, 1530-1660	Berry, Herbert; Ingram, William; Wickham, Glynne William Gladstone	569

EMLOT: complex queries.. still complex!

Facet:
**Place of
publication:**

“London”

&&

Facet:
**Venue
Name:**

**“Phoenix/
Cockpit”**

&&

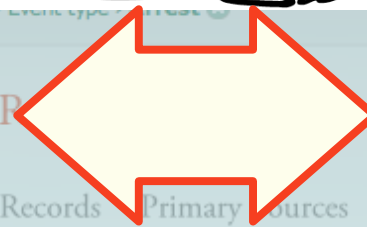
Facet:
**Person
Role:**

“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

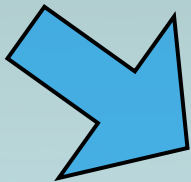
Evaluation results

Comprehension of the intended meaning of facets	<ul style="list-style-type: none">- 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	<ul style="list-style-type: none">- 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	<ul style="list-style-type: none">- 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

email me at: *michele.pasin@kcl.ac.uk*