

## Create an optimal search experience

## INTRO TO SEARCH IN DRUPAL 7



## Welcome!

### Introduction

# SECTION 1: WHAT ARE WE SEARCHING FOR?

### The problem

## We need search!

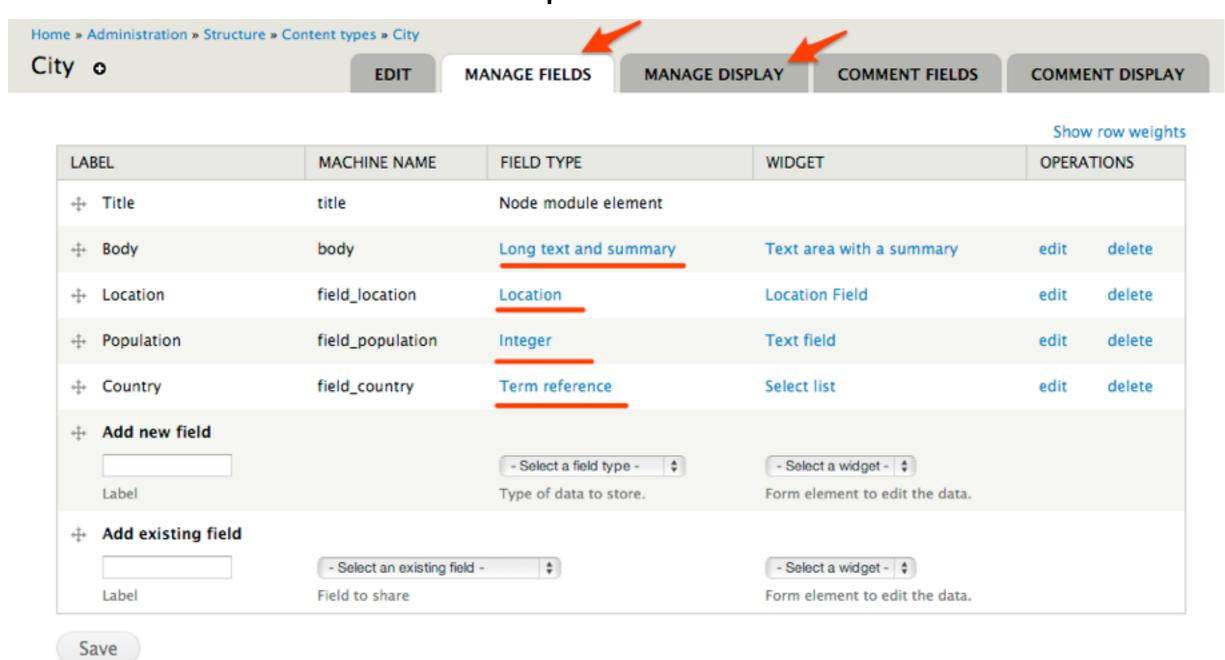
## Why do you need search?

- Commerce increase sales?
- Large amounts of data?
- Connecting people to information?

Share some examples!

## Our sample travel site

- Administration > Structure > Content types
- Administration > Reports > Field list

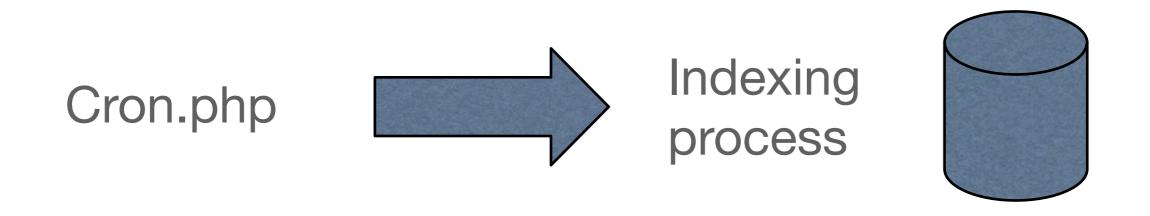


### We need a search page!

## Core search - what's in the box?

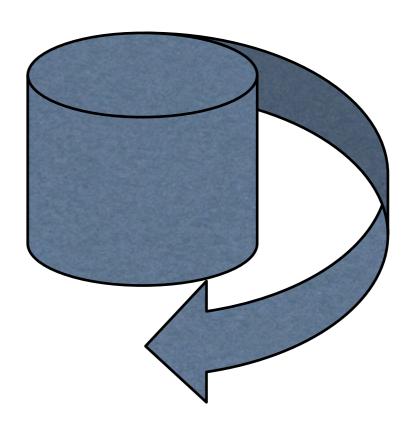
## Drupal 7 core search

 Interval defines how often updated content is being processed and sent to the index.



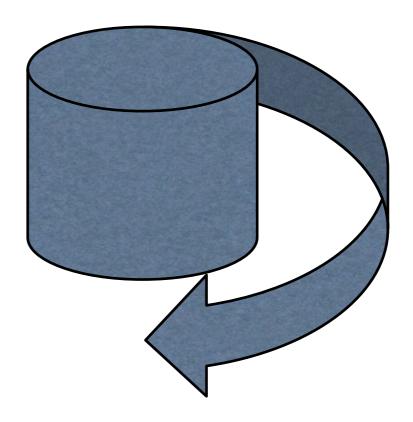
## Core search indexing

- HTML Tag Scores
  - <H1> scored at 25
  - <H2> scored at 18
  - Headings have higher scores than content.
- Accent Removal
  - Montréal => Montreal
- Stemming
  - skips, skipping also means "skip"



## Core search limitations

- SQL Not optimized for full text search
- Limited Operators
- Slow/not scalable
- Stemming happens on PHP side, not optimized
- Dead ends



### Demo: Core search

- Load up Drupal core search
- Confusing UI
  - Advanced search? Users don't use it.
  - Confusing UI of Search page
  - Can't customize options
- Index?
  - Limitations for fine-tuning



## Exercise 1: Core search configuration

- Load up Drupal core search
- Confusing UI
  - Advanced search? Users don't use it.
  - Confusing UI of Search page
  - Can't customize options
- Index?
  - Limitations for fine-tuning

## Dead ends....

- A bad landing page, with no suggestions.
- "Don't make me think".

### Congratulations!

#### You have finally reached the end of the internet!

There's nothing more to see, no more links to visit.

You've done it all.

This is the very last page on the very last server at the very far end of the internet.

You should now turn off your computer and go do something useful with the rest of your life. \*

#### Suggestions:

- Read a book
- · Do some public service
- · Personally interact with your neighbors that you've probably only met online
- Plant a tree
- Introduce yourself to those other people who live at your house (your family).

<sup>\*</sup> Please don't forget to turn off the lights on your way out.

## What are alternatives?

## Alternatives to core search

- Full services:
  - Google's Custom Search
  - Google Search Appliance

- Indexing software:
  - Fuzzy Search
  - Elasticsearch
  - Apache Solr



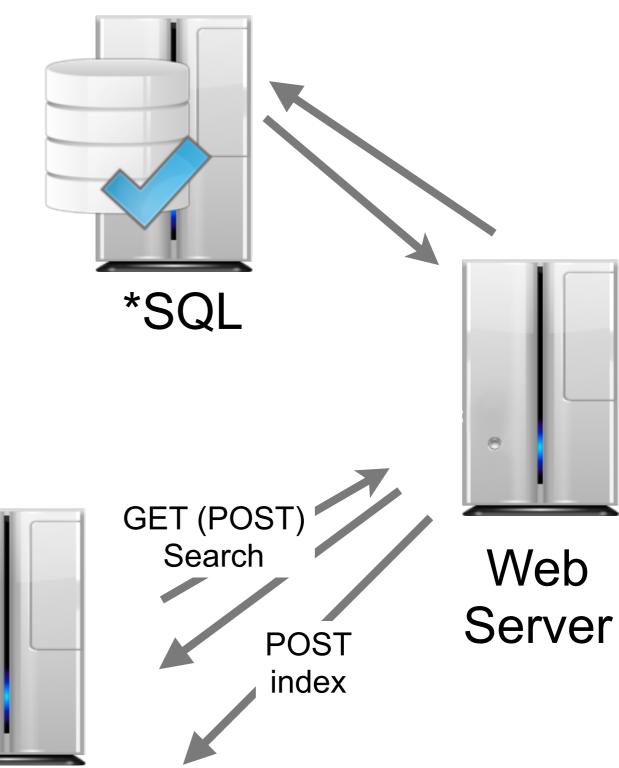
## Apache Solr

- Based on Lucene
- Written in Java; uses container such as Tomcat or Jetty
- Mathematical Indexing
- Replication / Solr Cloud
- Multiple indexes (Multicore)



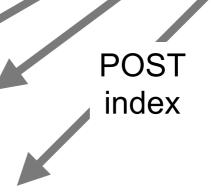
## Apache Solr

- Separate Server
- Indexes your site
- Widely used and tested









## Integrating Apache Solr and Drupal

## Integrate Solr w/ Drupal

- Search API
- Apache Solr Search Integration





## Customizing Solr

- Improve the Index
  - What Solr is storing
  - How Solr indexes information
- Improve the Query
  - What is being requested from Solr
- Improve the Results
  - What is displayed to the user, and how they navigate the search experience

## Getting set up

## SECTION 2: CONFIGURE SOLR SEARCH IN DRUPAL

## What comes with Solr?

## Comparisons

### Core index config

### Solr index config

Home » Administration » Configuration » Search and metadata

Search settings o

The search engine maintains an index of words found in your site's content maintenance task is required. Indexing behavior can be adjusted using the

#### INDEXING STATUS

100% of the site has been indexed. There are 0 items left to inc

Re-index site

#### INDEXING THROTTLE

Number of items to index per cron run

100 0

The maximum number of items indexed in each pass of a cron maintena timeouts and memory errors while indexing.

#### INDEXING SETTINGS

Changing the settings below will cause the site index to be rebuilt. to reflect the new settings. Searching will continue to work but new been re-indexed.

The default settings should be appropriate for the majority of sites

#### Minimum word length to index

3

The number of characters a word has to be to be indexed. A lower settin Each search query must contain at least one keyword that is this size (or Home » Administration » Configuration » Search and metadata » Apache Solr search

Apache Solr search o

**DEFAULT INDEX** 

#### Acquia Search: Search Index Content

TYPE	VALUE
Indexed	350 Items (10.26 MB on disk)
Remaining	10498 items (3% has been sent to the serve
Schema	drupal-3.0-rc2-solr3
Solr Core Name	CEGX-37181
Delay	2 min 10 sec before updates are processed.
Pending Deletions	0

#### View more details on the search index contents

#### ACTIONS

Index queued content (50)

Indexes just as many items as 1 cron

Index all queued content

Could take time and could put an incre

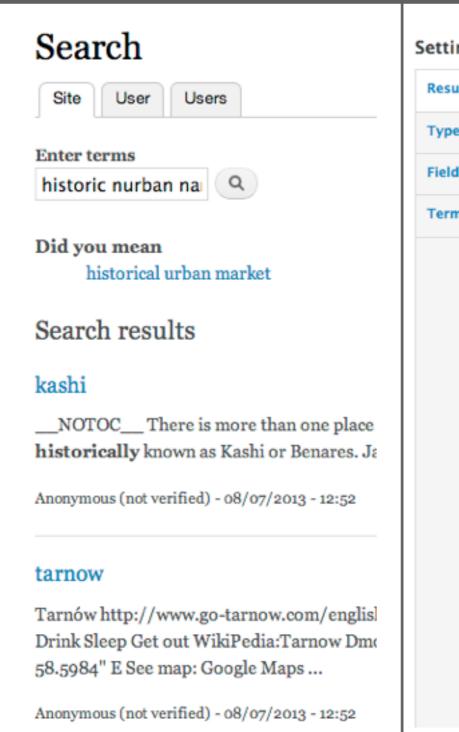
Queue all content for reindexing

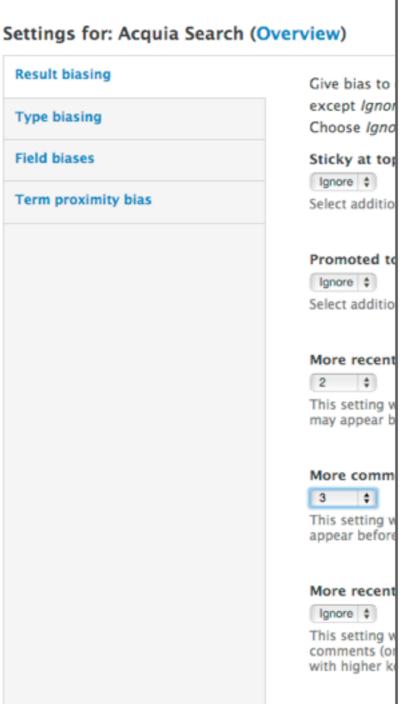
Delete the Search & Solr index

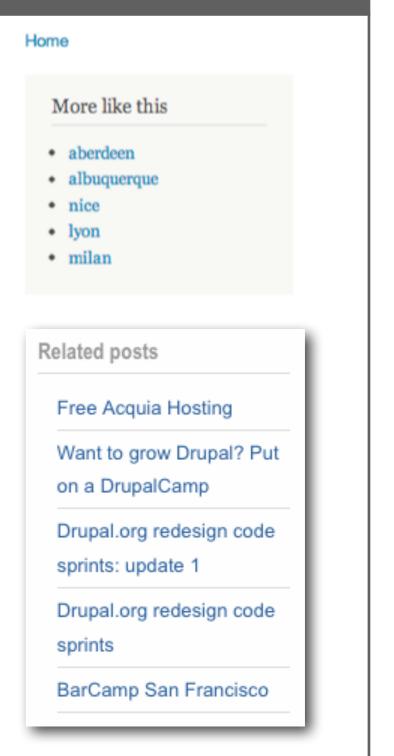
Useful with a corrupt index or a 1

## Available with Solr

### Spell checking Bias settings Suggestions



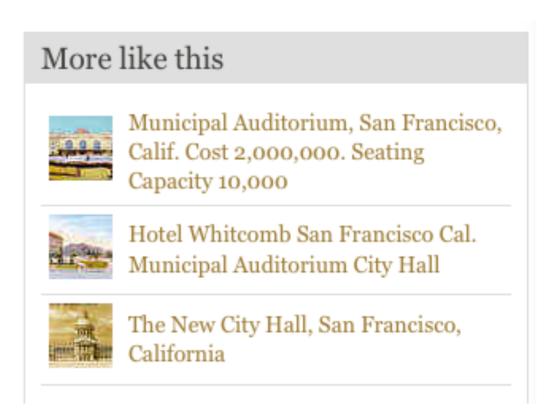




## "More like this"

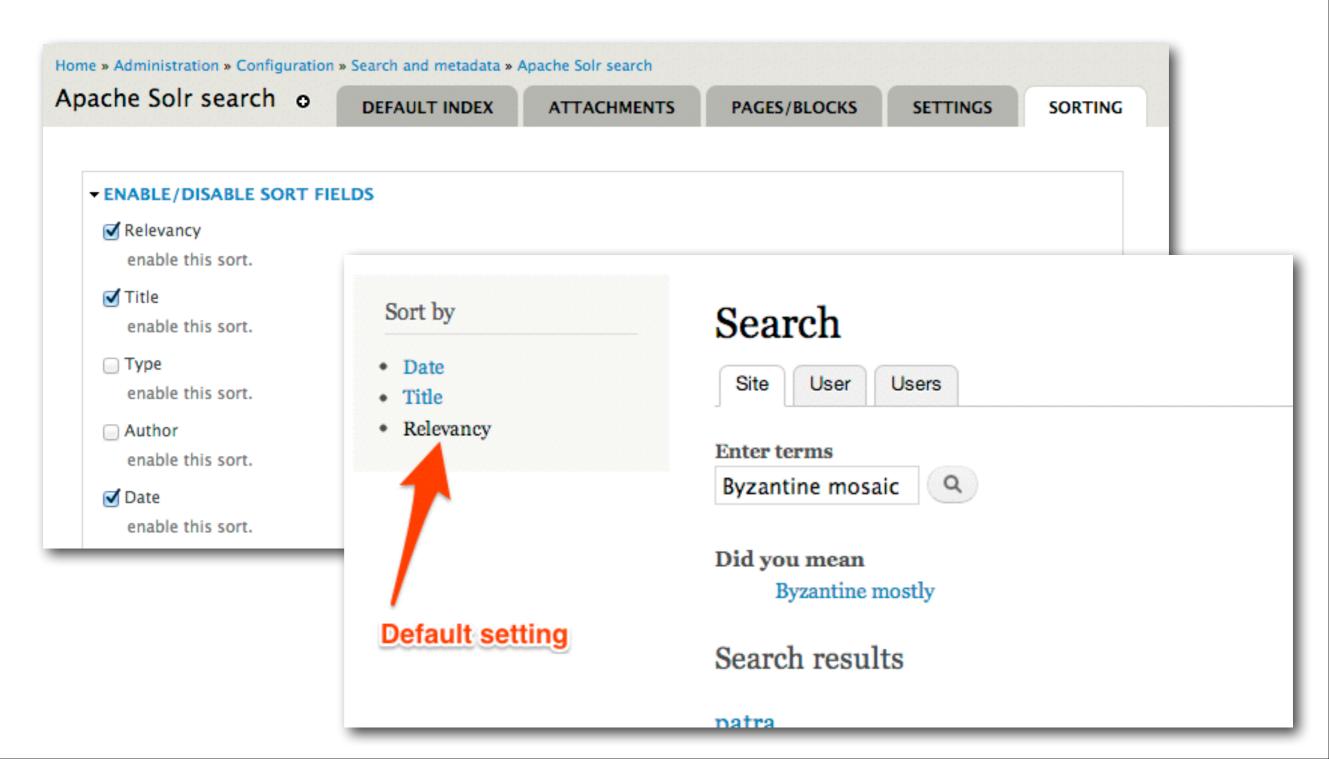
- Example from NIH.gov: Instead of using Entity reference fields.
- You can configure multiple suggestion blocks for specific content types or site sections.





## Sorting options

A block to allow users to alter sort.





## Demo: What comes with Solr?

- Enable the modules.
- Index the site. What is indexed?
- Spelling correction offered out of the box, difference with core search.
- Re-index, when does "cron" run?
- · More like this block, place and configure.
- Search page configuration under Pages/ blocks.

## Exercise 2: Configure Solr search

- A. Ensure search is installed and enabled
- B. Index site
- C. Review default results
- D. Configure your search page
- E. Place a "more like this" block on your site.

## Boosting relevant results

## SECTION 3: HOW TO IMPROVE SEARCH

## Ways to optimize search

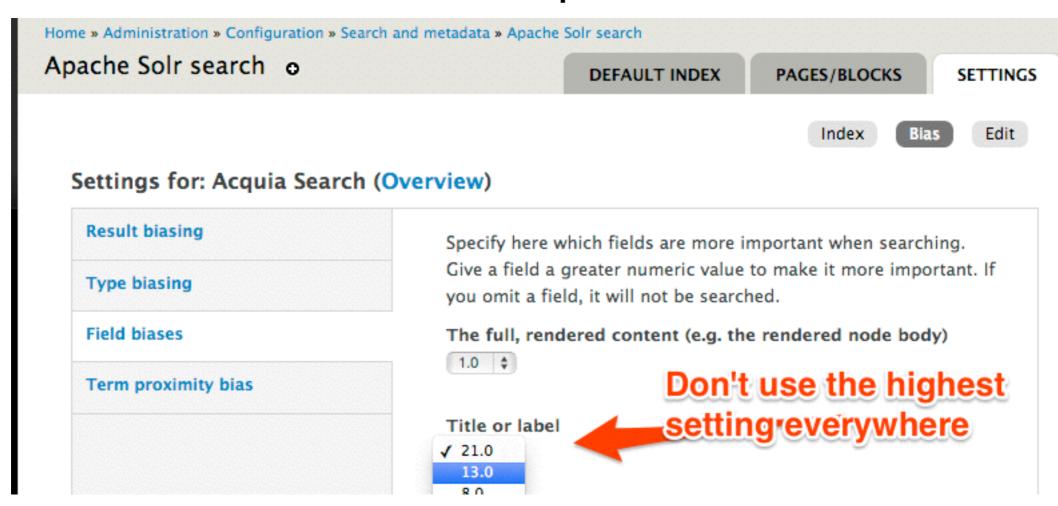
## Optmization options

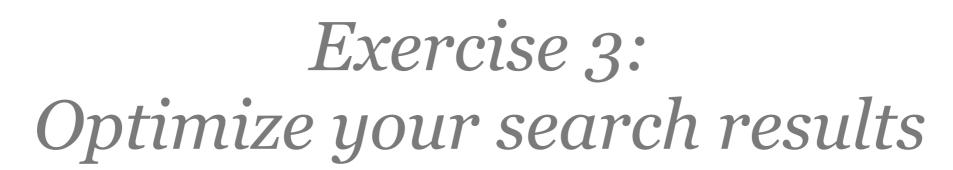
- Phrases
  - Search for sentences, phrases
- Optimize search for specific use cases
  - More recent content, is it more relevant?
  - Content with comments, are they more useful?
  - Body content, use of H2 and H3?
- Synonyms
  - synonyms.txt -



## Demo: Optimize results

- Bias settings
- When changes take effect
- Before and after examples





- A. Test search before changes
- B.Improve the result biases
- C. Testing the changes; how to check the Index
- D.Improve term proximity results
- LImprove bias based on fields and terms

## Filtering and displaying results

# SECTION 4: FACETS AND WIDGETS

## Facets: What users want

## Facets provide useful filters

#### Search

#### 84 SEARCH RESULTS FOR "RUNWAY"

SORT BY: Relevance | Date

FILTER BY: All (2069) Seasons (2) Videos (1025) Photo Galleries (233) Blogs (721) Episodes (84) Games (1)

Features (3)

Episode JUNE 19, 2013



#### Ep 4: Fashionable Foodies

Chef Roblé keeps it all in the family when he caters at New York Fashion Week for the debut of his cousins' clothing line, Mataano.

CHEF ROBLE AND CO - SEASON 2, EPISODE 4



#### Episode

#### Ep 12: Battle of the Booty

Kenya decides to produce her own fitness video -- "The Stallion Workout" -- to rival Phaedra's donkey.

THE REAL HOUSEWIVES OF ATLANTA - SEASON 5, EPISODE 12



#### Episode

#### Episode 8: Runway Ready

Chefs compete to create a line of dishes inspired by both handmade, high-end fashion, and mass produced, ready-to-wear clothing.

ROCCOS DINNER PARTY - SEASON 1, EPISODE 8

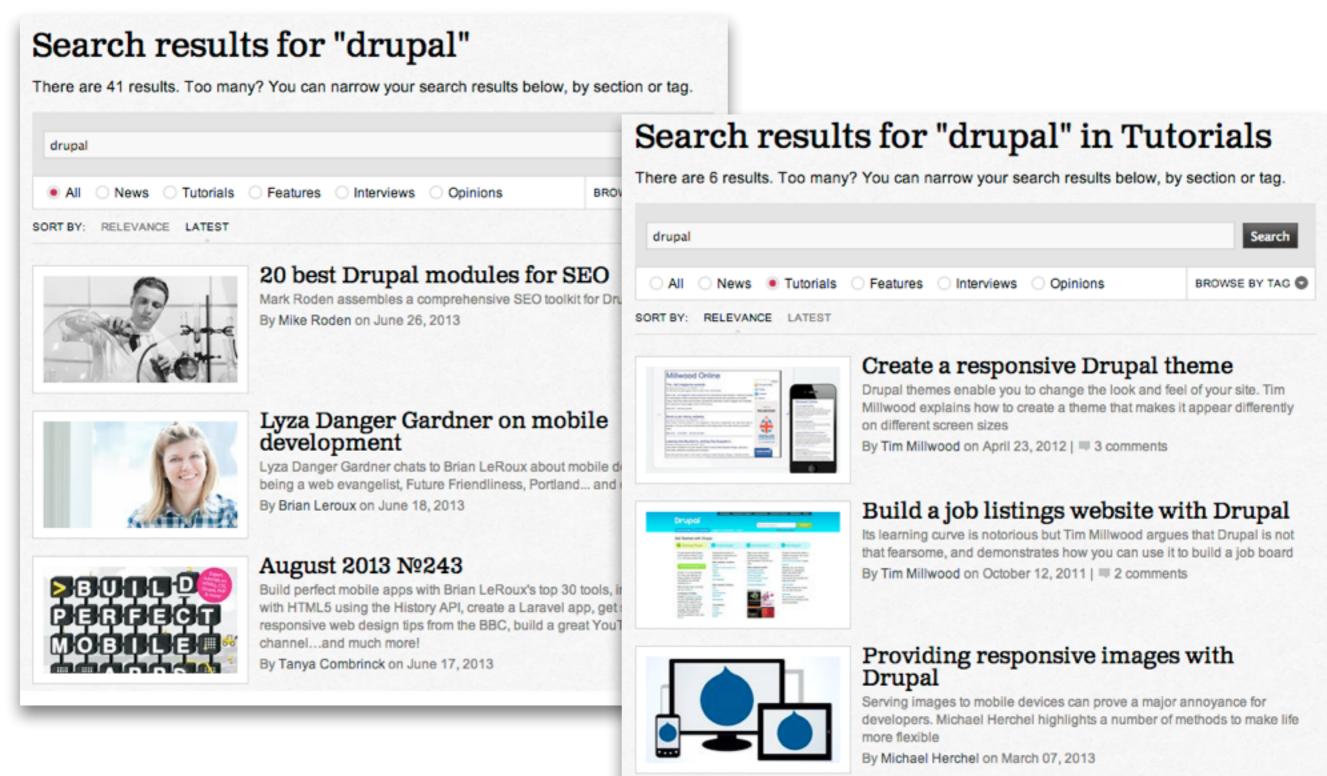
Shows what it's filtered on

JULY 27, 2011

JANUARY 11, 2013

84 Results 1 of 6 pages

### Select content



.net magazine, Drupal site

### Offer facets people need

MADE®

Sofas & Armchairs NEW

About us

Chairs

Free delivery over £300

Tables

Beds Storage Garden & Leisure

Lighting

Art & Acce

Do clients sort by name?

Sort by: Relevance | Name

Search results for: 'chair' Home >

2 x Brodie

Express D

Typical hig

Grey

The Ninth Floor showroom is open, come and visit us.

Use facets and

sorting which

influence

decisions.

#### Search results for 'chair'

Dining Chairs, Walnut livery £199

street £330\*

2 x Devlin Dining Chairs, Black £149

Typical high street £270\*



Price: Low | High

2 x Devlin Dining Chairs, Natural Ash

Express Delivery £149

Typical high street £270\*

Material Color, etc







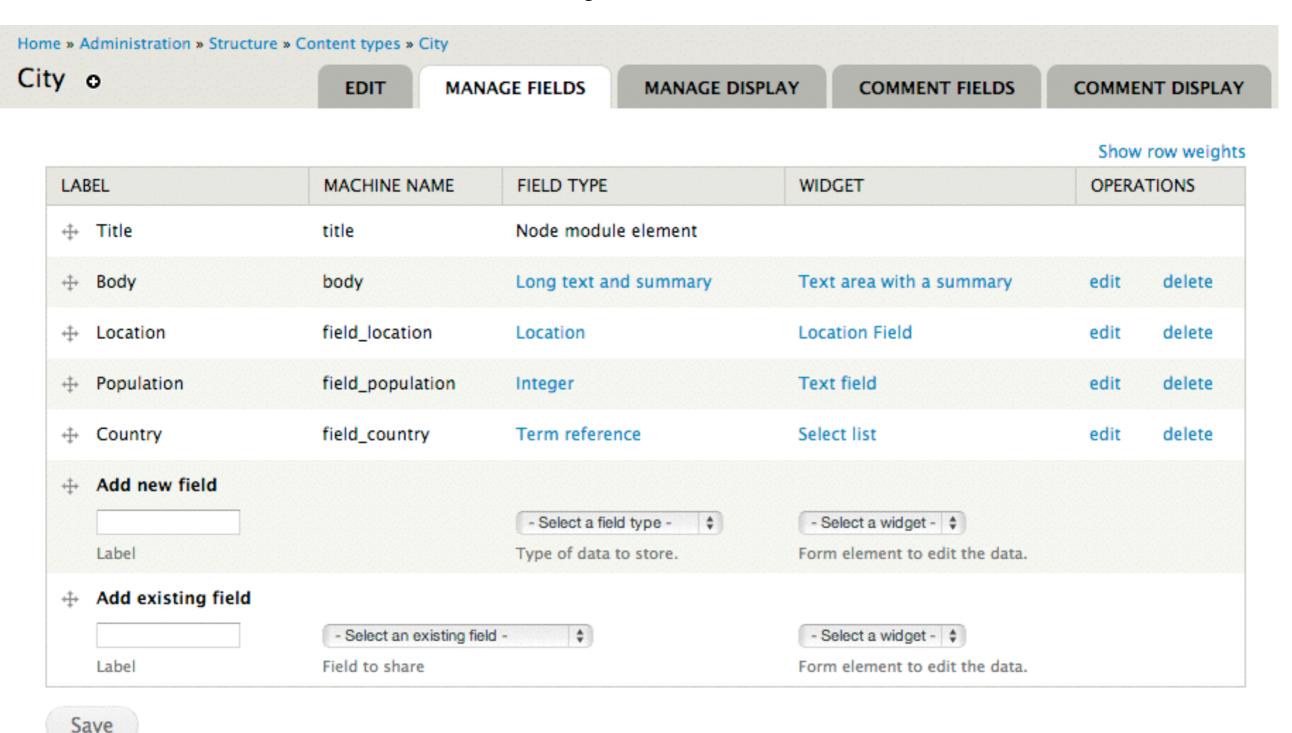
made.com, not a drupal site

### Tips to define facets

- Listen to users
  - Analyze query logs to define facets.
  - Use popular words to label facets.
  - Check competitors and across your industry.
- Choose important facets
  - On which facets do people make decisions?
  - Which features influence a purchase?
  - Plan content types for searching
  - Depends on your content model, taxonomy, fields!

### How are our users searching?

What facets would you enable on this site?



### Facets API in Drupal

### About Facets

- For each facet you configure:
  - A display widget
  - A corresponding query type.
  - A block to place, some examples:
    - Facet API: Apache Solr environment: Acquia Search : Author

      Facet API: Apache Solr environment: Acquia Search : Content type

      Facet API: Apache Solr environment: Acquia Search : Country
    - + Facet API: Apache Solr environment: Acquia Search : Post date

Facet API: Apache Solr environment: Acquia Search : Language

### Example display widgets

#### With Facet API Additional modules Links Tag cloud drupal.org/project/facetapi tagcloud Filter by country: Filter by country: China Afghanistan (50) Switzerland Japan Albania (22) Australia France Austria Italy Afahaniatan Dalisia Links with checkboxes Slider drupal.org/project/facetapi slider Filter by country: Filter by population: Australia (9) 623 China (7) United States (6) 1,137,376 Canada (5)



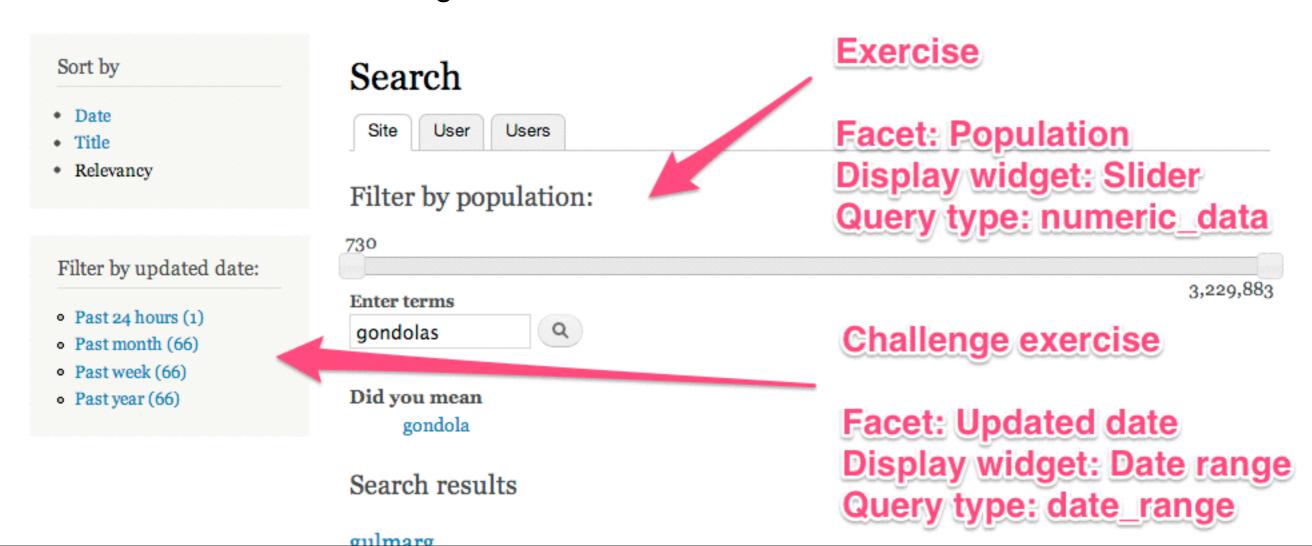
#### Demo: Configuring facets

- Enable the module.
- Review options for configuring facets for different displays.
- Display widgets, relate to specific queries.



### Exercise 4: Configure a facet slider

- A. Configure the facet options
- B. Place the population facet block
- C. Test the search
- D. Enable the slider for display
- E. Test the search again



### SECTION 5: HOW TO IMPROVE USER EXPERIENCE

### The user experience

### Established standards

- Users expect the search form to be... where?
- Queries
  - Should be easy to refine
  - Incremental construction
- Results
  - Display the query
  - Easy to read key information

### Beyond the defaults

#### Limitations:

 Default results don't show relevant data specific to your site: dates, numerical data, location maps.

#### Better:

- Landing page revealing the content
- Better search bar with suggestions!
- Key information in results with custom displays.
- Paths which are easy to share and navigate.

# Options to improve experience

### Making improvements

Acquia Search Lab

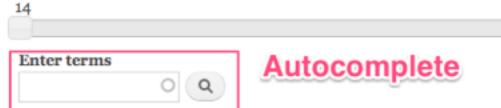
My account Log out

Home



#### Search

Filter by population:



13,480,498

#### dinant

#### Location:



Dinant http://www.dinantourism.com/ is a city in the province of Namur in Belgium. Understand Get in By plane The closest airports are Brussels, Charleroi (Brussels South Charleroi Airport) and Liège. By train From Brussels, the train to Dinant takes 1 hr ...

Better display of key data in results

#### Population:

### Configure search page

Home » Administration » Configuration » Search and metadata » Apache Solr search

Apache Solr search • DEFAULT INDEX ATTACHMENTS PAGES/BLOCKS SETTINGS SORTING

+ Add search page + Add search block "More Like This"

#### Pages

NAME _	PATH	SEARCH ENVIRONMENT	OPERATIONS		
Core Search (Default)	search/site	Acquia Search	Edit	Clone	Delete
Taxonomy Search	taxonomy/term/%	<disabled></disabled>	Edit (	Clone	Delete

#### Blocks "More Like This"

NAME _	SEARCH ENVIRONMENT	OPERATIONS	
More like this	Acquia Search	Configure	Delete

### Search page options

- How many results?
- Enable spell check?
- Show search box?
- Enabled Facets?

#### ▼ ADVANCED SEARCH PAGE OPTIONS

#### Results per page

10

How many items will be displayed on one page of the search result.

- ✓ Enable spell check
  - Display "Did you mean ... ?" above search results.
- ☑ Enable the search box on the page

Display a search box on the page.

Allow user input using the URL

Allow users to use the URL for manual facetting via fq[] params (e.g. http://example.com/search/site/test?fq[]=uid:1&fq[]=tid:99). This will only work in combination with a keyword search. The recommended value is unchecked

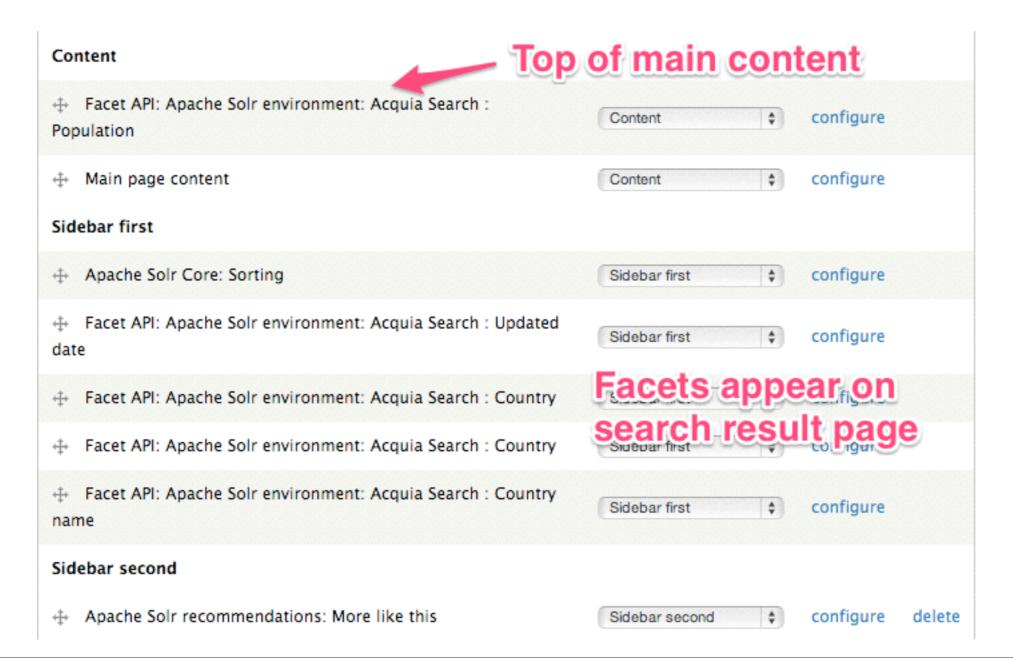
#### Behavior on empty search

- Show search box
- Show enabled facets' blocks under the search box
- Show enabled facets' blocks in their configured regions
- Show enabled facets' blocks in their configured regions and first page of all available results

This is what is shown when the user enters an empty search, or removes all filters from an active search. Remember to configure the facets on the search environment page and assign blocks to regions on the block settings page

### Facet block placement

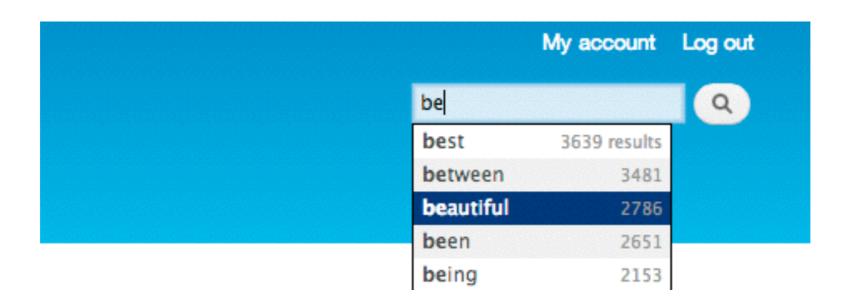
- Double check your facet block configuration.
- Where to display? Search box in header?





### Demo: Apache Solr Autocomplete

- Enable Apache Solr Auto Complete.
- Uses stemming so verb forms are picked up as well.
- Becoming standard, what users want.





#### Demo: Rich snippets

#### Replicates Google's results; Needs RDF!

#### andorra

searchsample.localhost:8082/node/42

By admin

Aug 9, 2013 – Andorra http://www.andorra.ad/en-US/Pages/default.aspx is a km2), mountainous country in the Pyrenees mountains in Europe, and is on the border between France and Spain, in Western Europe. Cities Ando ...

#### arinsal

searchsample.localhost:8082/node/43

By admin

Aug 7, 2013 - A sal is a village in A dorra, a small mountainous country in th

It is located at the head. It a valley. The old village part is clearly evident but due to the fact it is also a ski resort it has grown a lot and has quite a.

#### **Emulates Google's format and layout**

**Tip:** If you install

this during demo,

please ensure to

disable this for

next exercise

#### <u>canillo</u>

searchsample.localhost:8082/node/44

By admin

Aug 7, 2013 – Canillo http://www.andorra.com/uk/visitar/canillo.asp is a parish (administrative division) and town 12km NE of the capital of Andorra between Andorra La Vella and the French border at Pas de la Casa (2085m). Get in Take the CG1 direction Soldeu, Pas de l ...

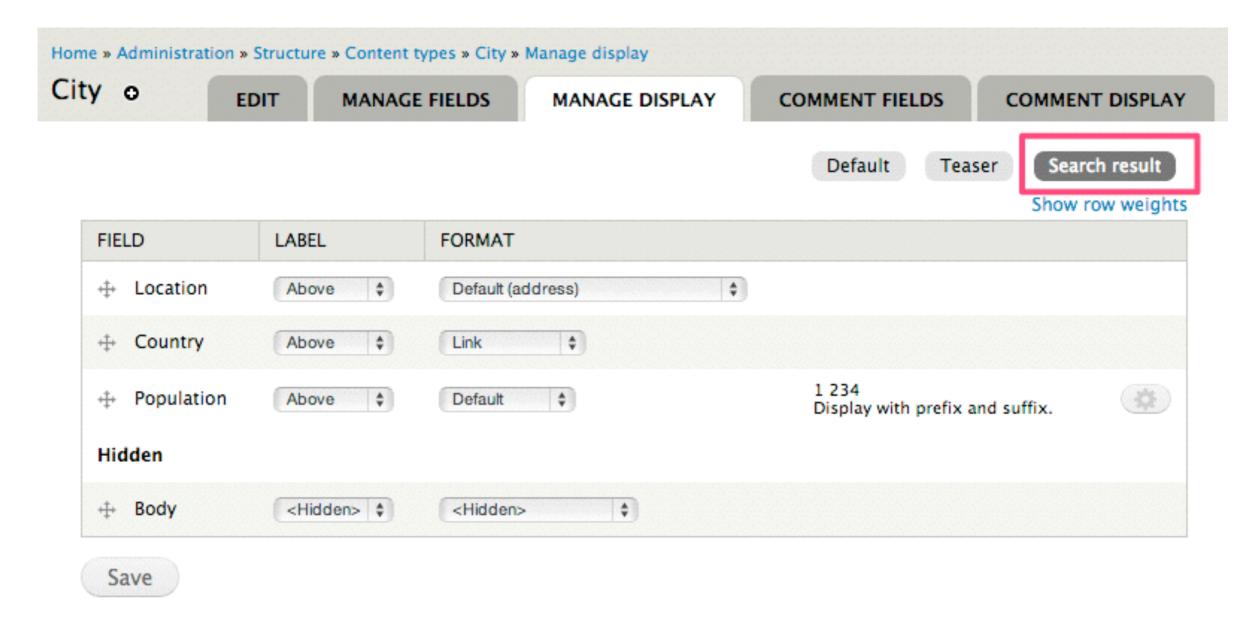


## Demo: Search page configuration

- Where you configure Pages/blocks
- Demo how to change options

### Next: Manage display

- Control the display for "Search results"
- Limited options; only fields



# Display Suite for Search results

### Display Suite!

- Display Suite +
   Display Suite Search
  - (and Display Suite UI)
- Custom layout
- Select which fields to display
- Multiple columns, headers and footers.

#### dinant

#### Location:



Dinant http://www province of Namur plane The closest ai (Brussels South Ch: From Brussels, the

Country: Belgium

#### Population:

12 875

Anonymous (not verified) - 08/13/2013 - 09:29

#### andorra

#### Location:



Andorra http://ww US/Pages/default.: km2), mountainous in Europe, and is or border between Fra Cities ...

Country: Andorra

#### Population:

73 100

### Example

#### Header

#### Two day tour of Tralee!



December 01, 2011
siteadmin
Continental breakfast included
Rose of Tralee festi



Etiam mollis nunc velit. Donec nibh sem, varius non scelerisque sed; cursus in urna. Ut neque tortor, gravida nec porta a, suscipit a arcu. Quisque dui velit, molestie sollicitudin facilisis non; ullamcorper in turpis. Fusce ut ligula sit amet velit varius semper.

Nulla facilisi.

#### Add new comment

Your name

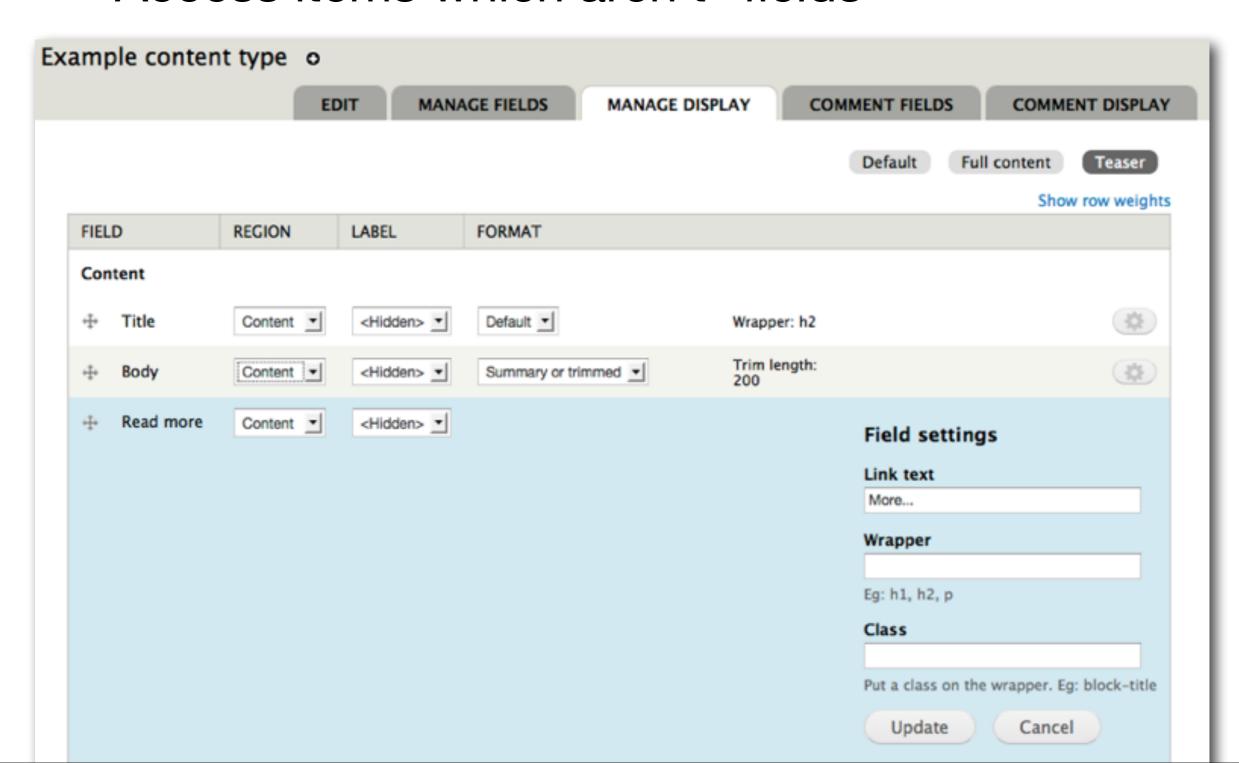
siteadmin

Subject

**Footer** 

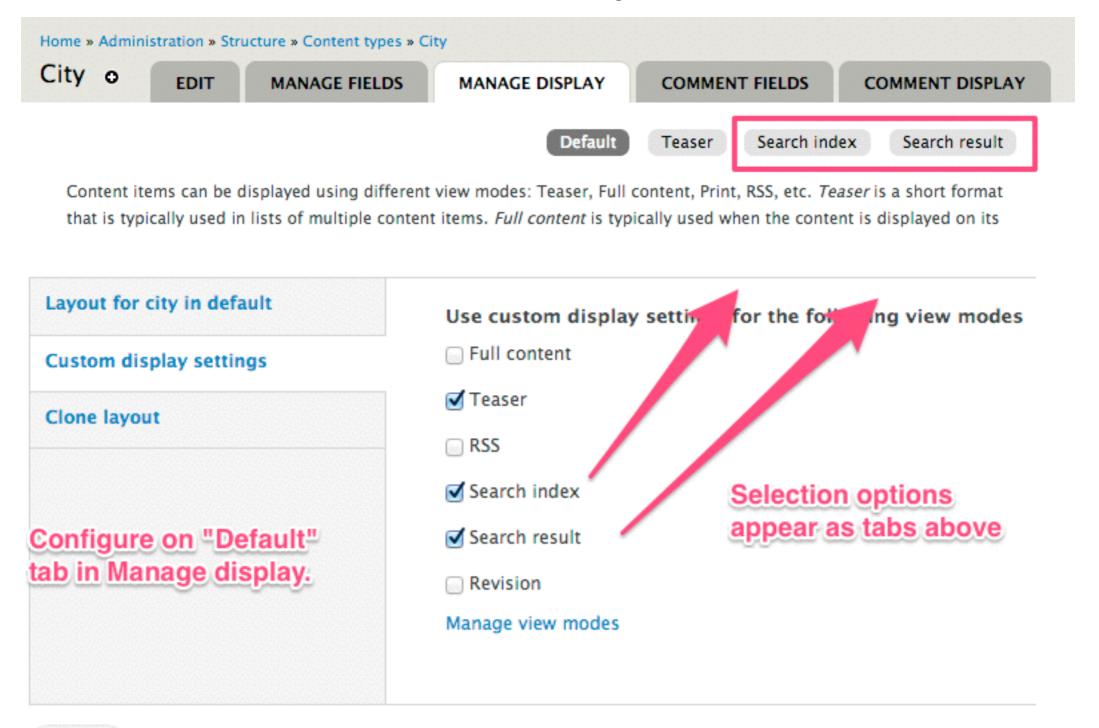
### Display suite

Access items which aren't "fields"



### View modes

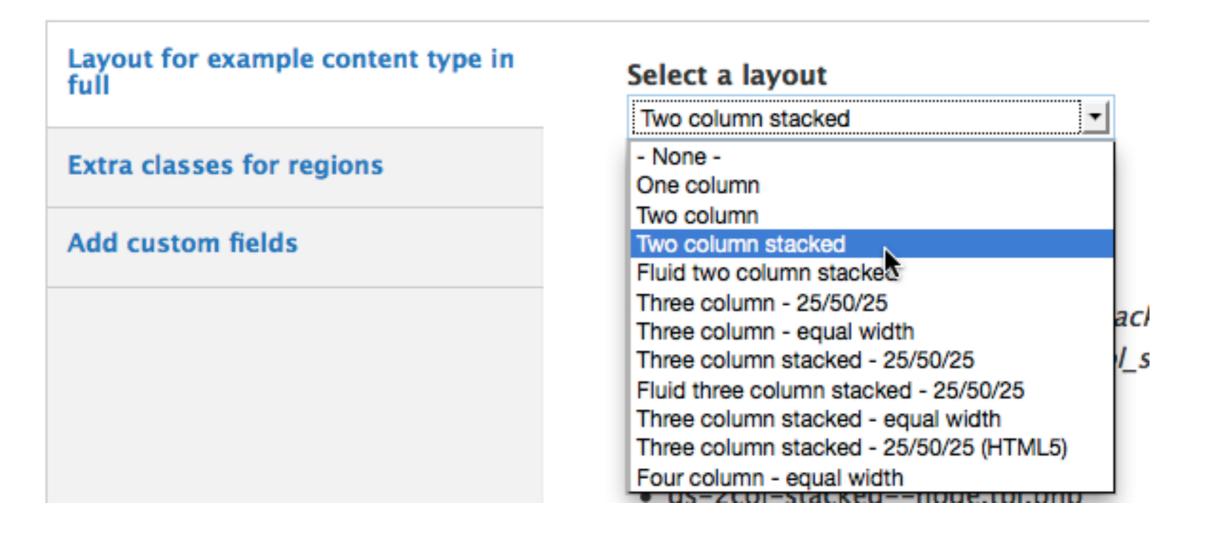
Add "view modes" for specific control



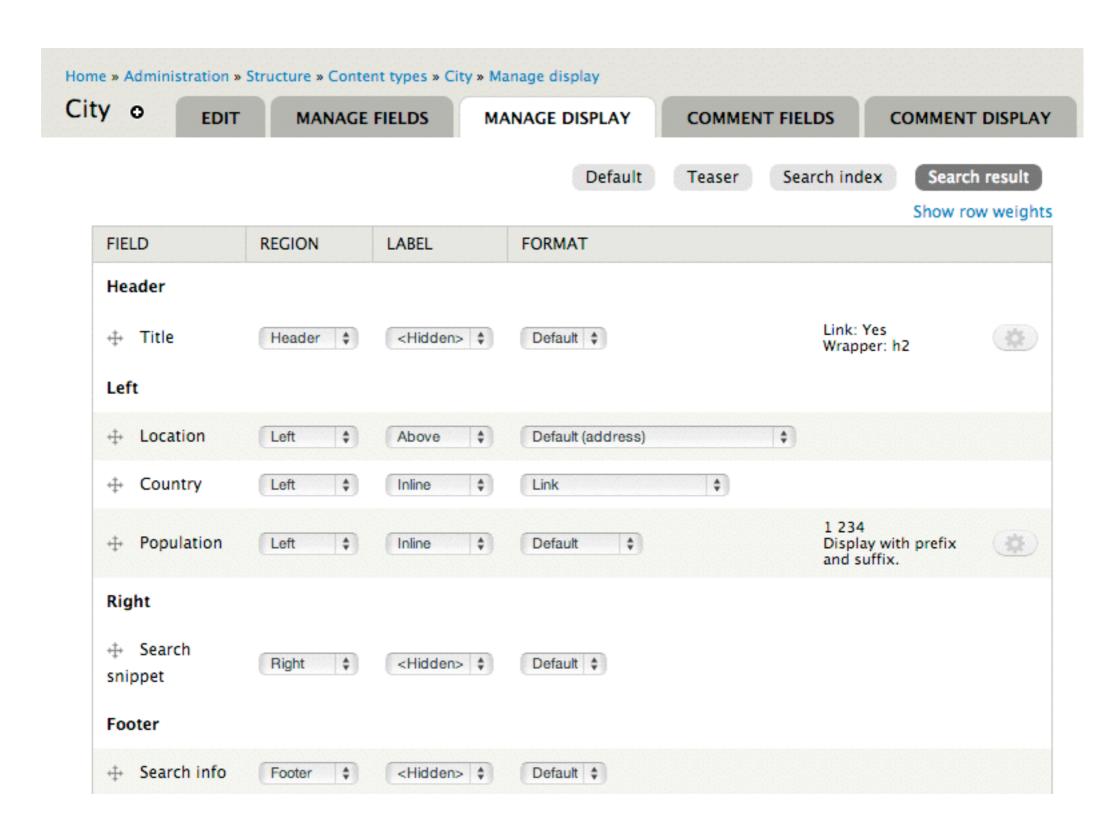
Save

### Display Suite regions

Variety of layouts



### Arrange fields in regions





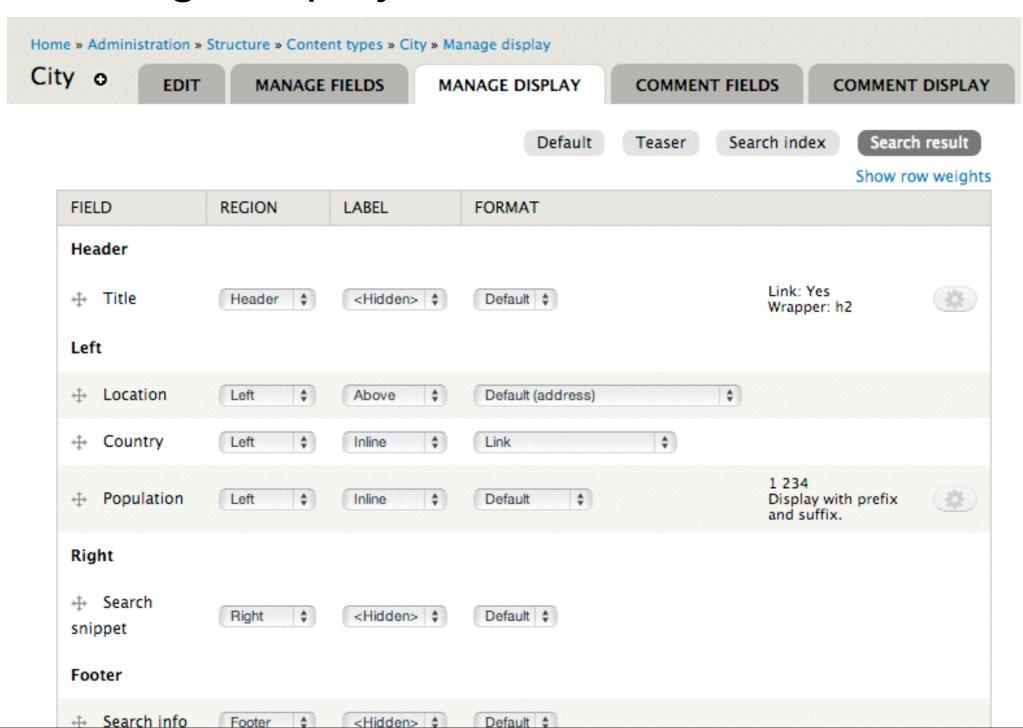
#### Demo: Display Suite

- Enable Display Suite, Display Suite Search, Display Suite UI
- Modify display and change layout for "Search result"
- Show what "Search index" provides.



## Exercise 5: Improve display with Display Suite

Manage display, Choose relevant fields



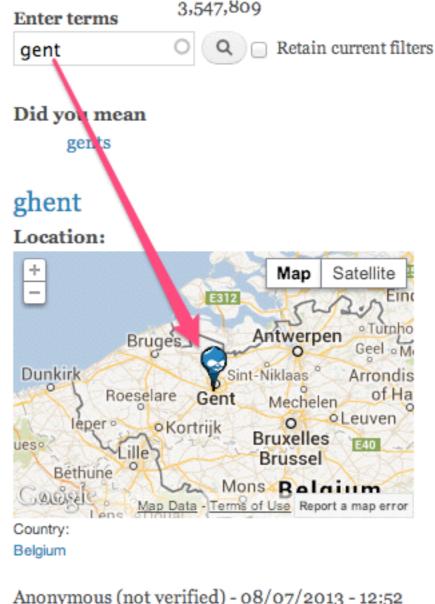
#### Example of custom code

### SECTION 6: CUSTOM CODE -PROXIMITY SEARCH

## Display location search results

### Location data in search

 Takes the coordinates of the search, and returns to the query.



1 km from requested destination

1 km from requested destination

Anonymous (not verified) - 08/07/2013 - 12:52

#### aalst

#### Location:



25 km from requested destination

25 km from requested destination



#### Demo: Location results

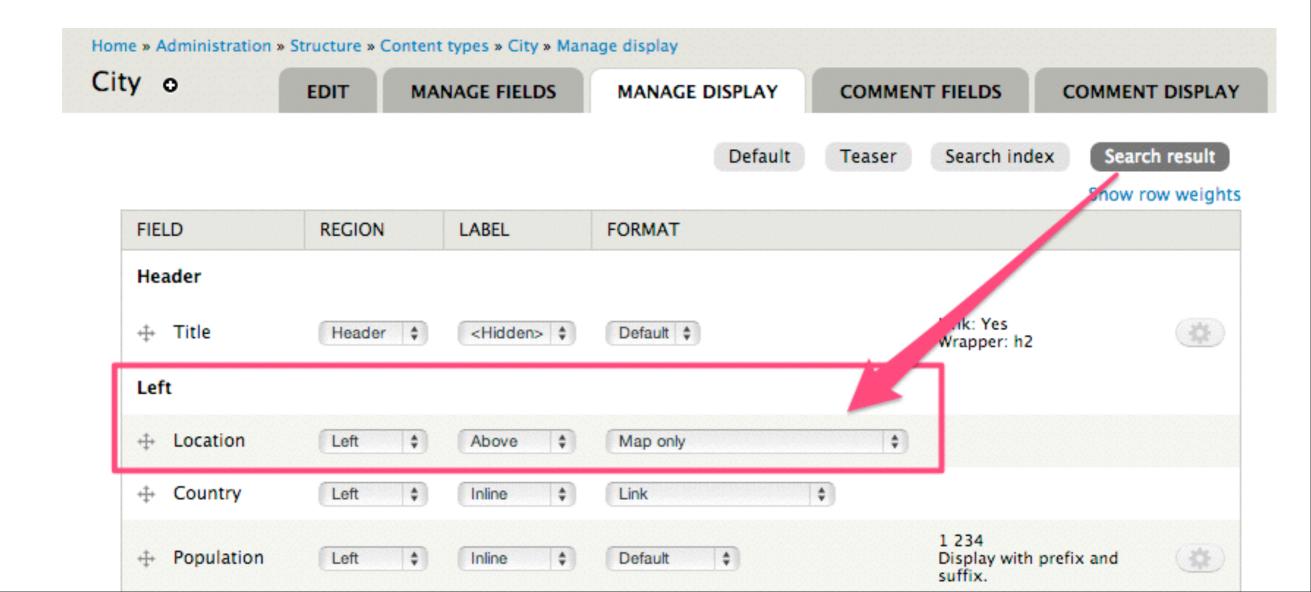
- Use Display Suite to display a location on a Map.
  - Which modules work best
  - Tips about handling Location data

- A custom code example- using location as a factor in search.
  - Search training Location module
  - Location Search module



## Exercise 6: Display location results

 Requires: The Display Suite modules, GMap, GMap Location, Geocoder.



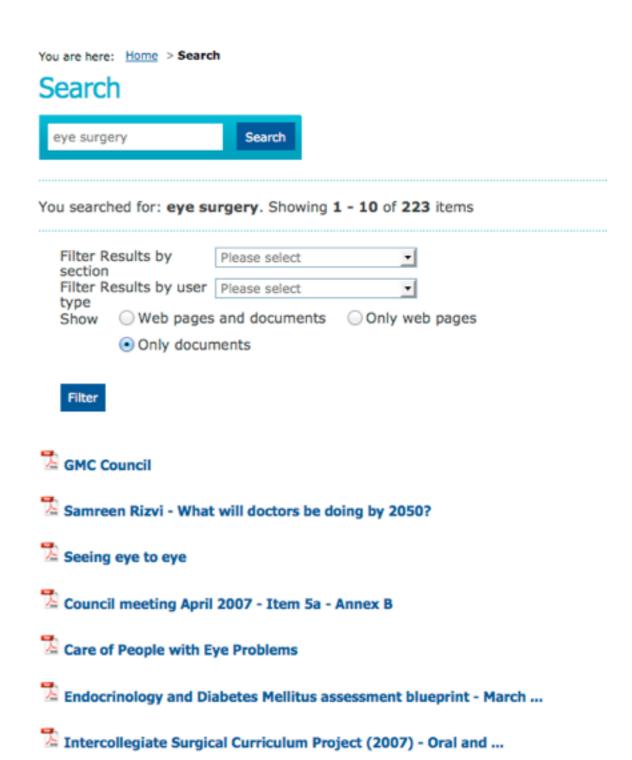
#### If time allows!

### SECTION 7: ENHANCEMENTS

#### Search file attachments

# Indexing files such as PDF or DOCX

### Search files

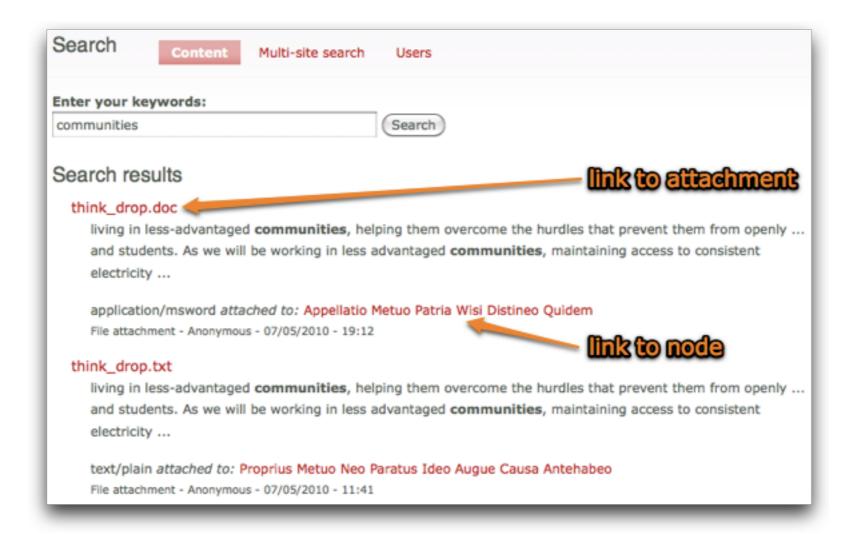


- Document search
- Server requirements



#### Demo: Attachment search

- Assumes you're using Acquia's search service
- Enable Apache Solr search attachments



### ANY QUESTIONS?

### http://acquia.com/training-feedback

### Feedback please!

