data_commons Documentation

Release 1.0

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Apps

1.1 Datasets

Track other machine readable APIs or wrap flat urls into a DCAT compatible system.

Provides a performant text search index backed with elasticsearch. Searches can be filtered geo-spatially, by tags, by date, or by scalar values (ie duration, completion %).

Internal models are adapted from https://github.com/compilerla/los-angeles-data-sources and are harmonized with the DCAT standard.

1.1.1 Catalog Record

Referred to as "dataset" in design but W3C DCAT disambiguates *CatalogRecord* from *Dataset*. https://www.w3.org/TR/vocab-dcat/ From the spec itself:

Notice that while dcat:Dataset represents the dataset itself, dcat:CatalogRecord represents the record that describes a dataset in the catalog. The use of the CatalogRecord is considered optional. It is used to capture provenance information about dataset entries in a catalog.

By introducing *CatalogRecord* the system is able to differentiate between self-reported metadata (provided from Sync) and curated metadata. *CatalogRecord* is the curated source of truth and is required for inclusion into the catalog.

Records also have a *state* which can control their visibility in the catalog. Only a *CatalogRecord* with a state of PUBLISHED is displayed and indexed!

1.1.2 Detail View

- 1. Title The given title of the CatalogRecord
- 2. Tags A list of SKOS Concepts
- Selected Metadata Displays field values associated to the CatalogRecord. If no value is provided, the associated Dataset is consulted.

- 4. [DISABLED] Columns Displays the known dataset columns
- 5. [DISABLED] Definitions Displays the definitions of concepts associated through tags and columns
- 6. Access Original Data Source The first non-empty value from: distribution_fields, identifier or landing_page
- 7. Metadata completion rate A percentage value of the completion, computed by default but may be overridden with *percentage_complete*
- 8. Related Datasets PUBLISHED Datasets within the same Tag structure / sharing SKOS Concepts; Or shared spatial entity; Or Shared publisher depending upon quantity.
- 9. Related Stories PUBLISHED Stories within the same Tag structure / sharing SKOS Concepts
- 10. [DISABLED] Linked Stories Lists stories explicitly linked to this CatalogRecord

Q

Search, ec: early childhood education

1 A Portrait of Los Angeles County

Public health (/taxonomy/concept/public-and-occupational-health/public-and-occupational-health/)

Socioeconomic aspects of health (/taxonomy/concept/socioeconomic-aspects-of-health/health-and-human-services/socioeconomic-aspects-of-health/)

Affor dable housing (/taxonomy/concept/affor dable-housing/social-sciences/economics,development-economics/community-and-economic-development/housing-development/affordal Equal opportunity in education (/taxonomy/concept/equal-opportunity-in-education/social-sciences/socialogy/equal-opportunity-in-education/)

Publisher*	Measure of America (/catalog/publisher/measure-america/)
Description*	A Portrait of Los Angeles County is an in-depth look at how residents of America's most populous county are faring in three fundamental areas of life: health, access to knowledge, and living standards. The Human Development Index – a composite measure of health, education and income – is the featured measure, presented for communities across the county and disaggregated by gender, race and ethnicity, gender by race and ethnicity,
Modified*	2017-11-16 20:00:00+00:00
Contact Point*	Rupsha Basu (rupsha@measureofamerica.org)
ldentifier*	
Access Level*	public
License*	1.5%
Rights	Please cite Measure of America when using or reporting estimates from this data set.
Spatial*	Los Angeles County
Spatial Granularity	Public Use Micro Data Areas
Temporal*	2015 or 2011-2015
Distribution*	XLSX, CSV
Distribution Fields*	http://www.measureofamerica.org/download-agreement/ (http://www.measureofameric
Accrual Periodicity*	Data compiled for the Portrait of Los Angeles County report (November 2017)
Reports To	55.
Collection Protocol	Most data in this dataset are either drawn directly from the Census Bureau's American Co
Canfarms To	-
Described By	
Described By Type	
Is Part Of	The Measure of America state and county Portrait series. For more information see http://
Issued	2017-11-0620:00:00+00:00
Language*	English
Landing Page*	http://www.measureofamerica.org/(http://www.measureofamerica.org/)
Funded By	Annenberg Foundation BCM Foundation Blue Shield of California Foundation California

Metadata shown in the table above is not necessarily representative of all data available in this dataset. Access original data source > (http://www.measureofamerica.org/download-agreement/)

6 С Ассель о вызычать зо инстраtion (http://www.measureofamerica.org/download-agreement/)

Metadata completion rate 1. Detesets 'LA Counts encourages dataset accountability. We recommend 14 metadata elements appear in all listed datasets. The metadata completion rate is the percentage complete divided by 14.

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1.1.3 Commands

detect_dataset_sync_stategy Automatically detects which sync strategy to use on unassigned catalog records.

geocode_spatial_entries Creates spatial entities for catalog records that specify a spatial value

import_googlesheet_datasets Imports datasets from a Regional Data Inventory google spreadsheet.

sync_catalog_record Syncs a catalog record(s) using the dataset's API. Upon successful synchronization the *CatalogRecord* is PUBLISHED.

detect_dataset_sync_stategy & sync_catalog_record run nightly.

1.1.4 Sync

apps.datasets.sync is a submodule for syncing datasets with various strategies.

Sync strategies should not modify the CatalogRecord but will modify or delete associated Metadata/DCAT models:

- Dataset
- RecordColumn
- Distribution

Populating Dataset provides the detail page with metadata values if the CatalogRecord has none.

The following sync strategies exist:

- apps.datasets.sync.socrata
- apps.datasets.sync.static_link
- apps.datasets.sync.arcgis

Each CatalogRecord has a field sync_strategy to specify which function to use.

1.2 Focus

Provides a topic-based view of the catalog by providing a Simple Knowledge Organization System: https://www.w3. org/TR/skos-primer/

Related datasets & stories is done by including all descendant concepts to include items that are conceptually related.

CatalogRecord s can be organized into Focus Areas & Concepts.

- stories & records are manually assigned to concepts
- focus areas are a curated display of stories & records with a primary linked concept

1.2.1 Concept

A Directed Acyclic Graph (DAG) representing linked concepts. The DAG structure allows for efficient querying of concept descendants.

1.2.2 Commands

- create_concepts_from_collections Create a concept entry for each curated collection and add the datasets.
- **import_skos_vocabulary** Imports a W3C SKOS (Simple Knowledge Organization System) rdf vocabulary file.
- **populate_tags_from_concepts** All concepts will generate a tag and associate itself to any tags matching its various names. Datasets with tags associated to concepts will have their concept associations updated.

1.3 Commenting

Using django-comments-xtd

1.4 Stories

Custom blog that allows users to post stories (from the front end, permission based).

Allows for links to publisher, datasets, stories, tags.

Multiple images may be attached and body is a rich text editor (CKeditor).

Stories also have a *state* which can control their visibility in the catalog. Only a *Story* with a state of PUBLISHED is displayed and indexed!

1.5 Profiles

Defines a custom user model. Stores the following fields:

- Display name
- title
- organization (text)
- publisher (foreign key to a registered publisher)
- url/website
- marked interests
- avatar

Allows users to save or track recent views of:

- searches
- datasets
- stories

django-activity-stream for tracking views and saves

W3C Interpretations

2.1 datasets

Can track other machine readable APIs or wrap flat urls into a DCAT compatible system.

Note: dataset in the client wireframes is CatalogRecord in the backend.

Internal models are templated after https://github.com/compilerla/los-angeles-data-sources

- Exports a searchable index for use with django-haystack.
- Index can be filtered geo-spatially or structured using SKOS (see DCAT theme category field)
- Can sync against various backends (Socrata, ArcGIS) to populate meta data fields
- Tracks column definitions
- Support RDF DCAT serialization
- · Additional fields for user submissions, allow for crowd-sourcing

InformalDataModelSpecification:https://github.com/compilerla/los-angeles-data-sourcesReferencedspreadsheetformodeling:https://docs.google.com/spreadsheets/d/1uNtA4GbBwky8PPdNUvmXXZCI1GLtH5cGF-Q0FqD90w0/edit#gid=612549376

ALSO see: * https://project-open-data.cio.gov/v1.1/schema/ * https://www.w3.org/TR/vocab-dcat/

2.2 focus

Represents a limited W3C Simple Knowledge Organization System

https://www.w3.org/TR/skos-primer/

- ConceptModel is a SKOS concept with defined labels.
- FeaturedInterest is a page calling attention to a concept(s)
- Concepts may be ordered in a tree view (django-mptt).

- other models in the site may be associated to concepts for enhanced searching
- Support RDF SKOS serialization
- Imports SKOS & OWL
- Search engine may span special concept relationships to expand searches

URLs

/catalog/search/ Faceted search view backed by ElasticSearch index
/catalog/publisher/<slug>/ Detail view of Publisher
/catalog/datasets/ List view of CatalogRecord
/catalog/<id>
/ Detail view of CatalogRecord
/taxonomy/ List view of InterestPage
/taxonomy/concept/ List view of Concept
/taxonomy/concept/<path...> Detail view of Concept
/taxonomy/interest/<slug>/ Detail view of InterestPage
/stories/ List view of Story
/stories/<slug>/ Detail view of Story

API

4.1 Models

Data Model Specification: https://github.com/compilerla/los-angeles-data-sources Referenced spreadsheet for modeling: https://docs.google.com/spreadsheets/d/1uNtA4GbBwky8PPdNUvmXXZCI1GLtH5cGF-Q0FqD90w0/edit#gid=612549376

ALSO see: * https://project-open-data.cio.gov/v1.1/schema/ * https://www.w3.org/TR/vocab-dcat/

Notes:

The spreadsheet and DCAT standard are not one to one but can be adapted and detected. Major discrepency is over the flatening of distributions into a url and descriptor. The system may be configured to use the dataset's portal's vendor field to load a driver. A driver would be responsible for populating distribution instances. Default is a direct link driver.

```
class apps.datasets.models.CatalogRecord(*args, **kwargs)
Populated from SCDC data requirements doc. Additional context from fields scraped from speadsheet Datasets
```

```
https://asset1.basecamp.com/2345560/projects/13740930/attachments/275923420/
44a8dc7c4f5133ba3e56252eb2e4400f0010/original/SCDC%20Presentation%20+%20data%20requirements%
202-27-2017.pdf
```

This is the data maintained by humans. It represents a linkage to an external dataset.

dcat:CatalogRecord

- id (AutoField) Id
- title (CharField) A name given to the dataset.
- **state** (*FSMField*) **State**
- **curated_collection** (*CharField*) Collections were developed for CCF, following requested thematic topics and existing focus areas. Note: At a future data this field will meet requirements for optional "theme" adopted by USPRO and DCAT.

- **description** (*TextField*) free-text account of the dataset.
- **keyword** (*TextField*) A keyword or tag describing the dataset.
- modified (DateTimeField) Most recent date on which the dataset was changed, updated or modified.
- **publisher** (ForeignKey to *Publisher*) An entity responsible for making the dataset available (may not be responsible for collecting the data).
- **contact_point** (*TextField*) All relevant contact information (including name and email) for the person(s) to whom questions about the dataset should be sent.
- identifier (CharField) A unique identifier of the dataset.
- **access_level** (*CharField*) The degree to which this dataset could be made publicly-available, regardless of whether it has been made available. Choices: public (Data asset is or could be made publicly available to all without restrictions), restricted public (Data asset is available under certain use restrictions), or non-public (Data asset is not available to members of the public).
- **license** (*TextField*) This links to the license document under which the distribution is made available.
- rights (CharField) Information about rights held in and over the distribution.
- **spatial** (*TextField*) Spatial coverage of the dataset.
- **spatial_granularity** (*TextField*) Sub field of spatial coverage, required where applicable.
- **spatial_entity** (ForeignKey to *SpatialEntity*) Spatial entity
- **spatial_geometry** (*GeometryField*) Spatial geometry describing the coverage of the dataset.
- **temporal** (*TextField*) The temporal period that the dataset covers.
- sync_strategy (CharField) Plugin for automatically syncing metadata
- **sync_url** (CharField) Detected sync strategy url
- **distribution** (*CharField*) Available distributions, or specific data formats (ex: csv, Socrata API); type(s) of format(s)
- **distribution_fields** (*CharField*) URL of most commonly accessed distribution
- accrual_periodicity (TextField) The frequency at which dataset is published.
- **reports_to** (*TextField*) All legislation that requires or informs the collection and reporting of these data points.
- **collection_protocol** (*TextField*) Description of the frequency and mode of data collection (different from periodicity of dataset publication). Links to original data collection plan or proposals may also be added here.
- conforms_to (TextField) Data standard dataset meets.
- **described_by** (*CharField*) Machine readable documentation (typically used for APIs)
- **described_by_type** (*CharField*) Machine readable documentation type (typically used for APIs)
- **is_part_of** (*TextField*) The collection of which the dataset is a subset

- **issued** (*DateTimeField*) Date of formal issuance (e.g., publication) of the dataset.
- language (CharField) Language
- **landing_page** (*URLField*) A Web page that can be navigated to in a Web browser to gain access to the dataset, its distributions and/or additional information.
- **funded_by** (*TextField*) All groups and/or individuals that financially support the collection of this dataset. These entities may be the same or different from the dataset's publisher
- **notes** (*TextField*) For use by SCDC project only
- created_at (DateTimeField) Created at
- updated_at (DateTimeField) Updated at
- **submitted_by** (ForeignKey to User) Submitted by
- **approved_by** (ForeignKey to User) Approved by
- _percentage_complete (FloatField) % complete
- tags (TaggableManager) A comma-separated list of tags.
- **concepts** (*ManyToManyField*) The main category of the dataset. A dataset can have multiple themes.
- tagged_items (GenericRelation) Tagged items
- actor_actions (GenericRelation) Actor actions
- target_actions (GenericRelation) Target actions
- action_object_actions (GenericRelation) Action object actions

lookup (local_name, dset_name=None)

Lookup a single value accross the catalog record and it's dataset. The dataset provides any defaults the catalog record does not.

match_concepts

Concepts that should match during search. Does not select child concepts.

Expands concepts in the following order:

- alternative ancestors (ancestors, ancestors alt parents)
- · search matched

Search expansion is ordering is limited by performace.

related_concepts

The intent is to query all related concepts, But "related" seems to work inverse of search? Right now we query descendant concepts instead of ancestors. Meaning a dataset tagged with "Health an Human Services" will relate to a story about water. In all liklichood we may want to query both descendant and ancestors for related but prefer a particular direction.

run_sync_strategy(sync_strategy=None, url=None)

Load & run the associated sync strategy

Simply returns if none is defined.

```
class apps.datasets.models.DataPortal(*args, **kwargs)
        Fields scraped from spreadsheet Data Portals
```

dcat:Catalog

Typically, a web-based data catalog is represented as a single instance of this class.

Parameters

- id (AutoField) Id
- **status** (CharField) Status
- publisher (ForeignKey to Publisher) Publisher
- url (URLField) Url
- **title** (CharField) Title
- vendor (CharField) Vendor
- datasets_estimate (IntegerField) Datasets estimate
- **license** (*TextField*) License
- **spatial_entity** (ForeignKey to *SpatialEntity*) Spatial entity
- **notes** (*TextField*) Notes

class apps.datasets.models.Dataset(*args, **kwargs)

This class represents the actual dataset as published by the dataset publisher. In cases where a distinction between the actual dataset and its entry in the catalog is necessary (because metadata such as modification date and maintainer might differ), the catalog record class can be used for the latter.

dcat:Dataset + api meta data

https://www.w3.org/TR/2013/WD-vocab-dcat-20130312/

This is where we sync metadata with external APIs

- id (AutoField) Id
- catalog_record (OneToOneField to CatalogRecord) Catalog record
- title (CharField) A name given to the dataset.
- **description** (*TextField*) free-text account of the dataset.
- **issued** (*DateTimeField*) Date of formal issuance (e.g., publication) of the dataset.
- modified (DateTimeField) Most recent date on which the dataset was changed, updated or modified.
- identifier (CharField) A unique identifier of the dataset.
- **keyword** (*TextField*) A keyword or tag describing the dataset.
- **language** (*CharField*) The language of the dataset.
- **temporal** (*TextField*) The temporal period that the dataset covers.
- **spatial** (*TextField*) **Spatial** coverage of the dataset.
- accrual_periodicity (*TextField*) The frequency at which dataset is published.
- **landing_page** (*URLField*) A Web page that can be navigated to in a Web browser to gain access to the dataset, its distributions and/or additional information.
- **theme** (*TextField*) The main category of the dataset. A dataset can have multiple themes.
- **publisher** (*TextField*) An entity responsible for making the dataset available.

- contact_point (TextField) Contact point
- created_at (DateTimeField) Created at
- updated_at (DateTimeField) Updated at
- **last_sync** (*DateTimeField*) Last time the data automatically synced
- **sourced_meta_data** (JSONField) Sourced meta data

class apps.datasets.models.DatasetURL(*args, **kwargs)

Keeps track of dataset urls in the system.

- associate datasets not yet registered in the system
- · track old urls
- search & dedupe catalog records

Parameters

- id (AutoField) Id
- catalog_record (ForeignKey to CatalogRecord) Catalog record
- url (URLField) Url

attempt_catalog_record_sync()

Attempts to create a catalog record for this url. The record will be saved if the sync is successfull. None will be returned if no successfull sync took place.

- id (AutoField) Id
- path (CharField) Path
- depth (PositiveIntegerField) Depth
- numchild (PositiveIntegerField) Numchild
- placeholder (ForeignKey to Placeholder) Placeholder
- parent (ForeignKey to CMSPlugin) Parent
- **position** (*PositiveSmallIntegerField*) **Position**
- **language** (CharField) Language
- plugin_type (CharField) Plugin_name
- creation_date (DateTimeField) Creation date
- changed_date (DateTimeField) Changed date
- cmsplugin_ptr (OneToOneField to CMSPlugin) Cmsplugin ptr
- **title** (*CharField*) Title
- show_title (BooleanField) Show title
- datasets (ManyToManyField) Datasets

Parameters

- id (AutoField) Id
- path (CharField) Path
- depth (PositiveIntegerField) Depth
- numchild (PositiveIntegerField) Numchild
- placeholder (ForeignKey to Placeholder) Placeholder
- parent (ForeignKey to CMSPlugin) Parent
- **position** (*PositiveSmallIntegerField*) **Position**
- language (CharField) Language
- plugin_type (CharField) Plugin_name
- creation_date (DateTimeField) Creation date
- changed_date (DateTimeField) Changed date
- cmsplugin_ptr (OneToOneField to CMSPlugin) Cmsplugin ptr
- title (CharField) Title
- link (CharField) Link
- show_title (BooleanField) Show title
- datasets (ManyToManyField) Datasets

- id (AutoField) Id
- path (CharField) Path
- depth (PositiveIntegerField) Depth
- numchild (PositiveIntegerField) Numchild
- placeholder (ForeignKey to Placeholder) Placeholder
- parent (ForeignKey to CMSPlugin) Parent
- **position** (*PositiveSmallIntegerField*) **Position**
- language (CharField) Language
- plugin_type (CharField) Plugin_name
- creation_date (DateTimeField) Creation date
- changed_date (DateTimeField) Changed date

- cmsplugin_ptr (OneToOneField to CMSPlugin) Cmsplugin ptr
- **datasets** (*ManyToManyField*) **Datasets**

class apps.datasets.models.DatasourceSuggestion (id, state, submission, submitted_by)

Parameters

- id (AutoField) Id
- **state** (*FSMField*) State
- submission (TextField) Submission
- **submitted_by** (ForeignKey to User) Submitted by

class apps.datasets.models.**Distribution**(**args*, ***kwargs*) Fields defined from: https://www.w3.org/TR/vocab-dcat/#class-distribution

This model should be autopopulated by a sync task

dcat:Distribution

Parameters

- id (AutoField) Id
- title (CharField) Title
- description (TextField) Description
- **issued** (*DateTimeField*) Date of formal issuance (e.g., publication) of the distribution.
- modified (DateTimeField) Most recent date on which the distribution was changed, updated or modified.
- **license** (*TextField*) This links to the license document under which the distribution is made available.
- **rights** (*TextField*) Information about rights held in and over the distribution.
- **access_url** (*URLField*) A landing page, feed, SPARQL endpoint or other type of resource that gives access to the distribution of the dataset
- download_url (URLField) A file that contains the distribution of the dataset in a given format
- **byte_size** (*PositiveIntegerField*) The size of a distribution in bytes.
- media_type (CharField) The media type of the distribution as defined by IANA.
- **format** (*CharField*) The file format of the distribution.
- dataset (ForeignKey to Dataset) Dataset

class apps.datasets.models.Publisher(*args, **kwargs)
 Fields scraped from spreadsheet Publishers

aka Content Contributor shows up as *dct:publisher* must be able to export: http://xmlns.com/foaf/spec/#term_ Person

- id (AutoField) Id
- path (CharField) Path
- depth (PositiveIntegerField) Depth

- numchild (PositiveIntegerField) Numchild
- **name** (CharField) Name
- **slug** (*SlugField*) appears in the url
- agency_type (CharField) Agency type
- agency_url (URLField) Agency url
- primary_data_portal (URLField) Primary data portal
- **body** (*RichTextUploadingField*) **Body**
- **description** (*TextField*) Description

set_sub_organization_of(name)

Sets the organizational parent by name

class apps.datasets.models.**RecordColumn** (**args*, ***kwargs*) Describes a column belonging to a dataset

Parameters

- id (AutoField) Id
- catalog_record (ForeignKey to CatalogRecord) Catalog record
- **field_name** (*CharField*) Field name
- **label** (CharField) Label
- **description** (*TextField*) Description
- data_type (CharField) Data type
- render_type (CharField) Render type
- concept (ForeignKey to Concept) Concept
- _order (OrderWrt) order

class apps.datasets.models.SpatialEntity(id, name, geometry, granularity, data)

Parameters

- id (AutoField) Id
- **name** (CharField) Name
- geometry (GeometryField) Geometry
- granularity (TextField) Granularity
- data (HStoreField) Data

4.2 Views

```
class apps.datasets.views.SubmitDatasourcesView(**kwargs)
    Submits datasouce urls for review
```

model

alias of DatasourceSuggestion

```
class apps.datasets.views.SuggestDatasetView(**kwargs)
      Creates an unpublished dataset for review
```

model

alias of CatalogRecord

- apps.datasets.views.submit_datasources (*self*, *request*, **args*, ***kwargs*) Submits datasouce urls for review
- apps.datasets.views.**suggest_dataset** (*self*, *request*, **args*, ***kwargs*) Creates an unpublished dataset for review

Indices and tables

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- modindex
- search

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