



Catmandu

What is it?

- a Perl library
- a command line tool
- to import, transform and export (library) data
- in a pragmatic way
- can handle large streams of data

Where do i find it?

- <http://librecat.org/>
- <https://github.com/LibreCat>
- <http://search.cpan.org/search?query=Catmandu>

Show of hands

- programming?
- json?
- command line user?

Show me

```
$ catmandu convert JSON to YAML
```

```
$ catmandu convert JSON  
--file /path/to/file.yaml  
to YAML  
--file /path/to/file.json  
--fix 'capitalize("title")'  
--fix 'trim("abstract")'
```

Show me

```
$ catmandu import MARC  
  --file /path/to/records.xml  
  --type MARCXML  
to MongoDB  
  --database-name catalogue  
  --bag records  
  --verbose
```

Show me

```
$ catmandu import MARC
--file /path/to/records.xml
--type MARCXML
to MongoDB
--database-name catalogue
--bag records
--verbose
--fix "marc_map('245','title')"
--fix "marc_map('100','authors.\$append')"
--fix "marc_map('008/35-35','language')"
```

Commands

\$ catmandu convert
convert data from one file format into another

\$ catmandu import
import data from a file into a store

\$ catmandu export
export data from a store into a file

\$ catmandu move
copy data from a store into another store

\$ catmandu count
count the number of objects in a store

\$ catmandu delete
delete objects from a store

Commands

```
$ catmandu repl
```

In Perl

```
use Catmandu;

my $importer = Catmandu->importer('CSV',
    fields => ['person_id', 'name']);

my $bag = Catmandu->store('ElasticSearch',
    index_name => "myapp")->bag("people");

my $exporter = Catmandu->exporter('JSON', file => $out);

$bag->add_many($importer);
$bag->add({person_id => "123", name => "mr. jones"});
$bag->commit;

$exporter->add_many($bag);
```

In Perl

```
use Catmandu;

my $importer = Catmandu->importer('CSV',
    fields => ['person_id', 'name']);

my $fixer = Catmandu->fixer([
    '/path/to/fix/file.txt',
    'capitalize("name")',
]);

$importer = $fixer->fix($importer);

$importer->each(sub {
    my $person = shift;
    say $person->{"name"};
});
```

Fix file example

```
add_field('my.deeply.nested.field', "value");
add_field('my.list.$append', "value");

remove_field('my.list.3');
remove_field('my.list.$last');

if_exists('my.key');
    cmd('python transform.py');
end();
```

Internal data model

- plain data, no objects
- basically everything that is representable as JSON

```
{title => "my title",  
  authors => [  
    {name => "mr. jones"},  
    {name => "mr. smith"}],  
  weight => 1.73,  
}
```

Main Catmandu parts

- `Catmandu`
- `Catmandu::Importer` (Iterable)
- `Catmandu::Exporter` (Addable, Fixable)
- `Catmandu::Store` (Addable, Fixable, Iterable)
- `Catmandu::Bag` (Addable, Fixable, Iterable[, Searchable])
- `Catmandu::Hits` (Iterable)
- `Catmandu::Fix`
 - `Catmandu::Fix::Base`
 - `Catmandu::Fix::Condition`

Importers

- Atom
- CSV
- JSON
- YAML
- MARC
- MAB
- ArXiv
- CrossRef
- LDAP
- OAI
- PLoS
- PubMed
- SRU
- ORCID
- Z39.50
- Inspire

Importers

- MediaMosa
- AlephX

Stores

- DBI
- MongoDB
- ElasticSearch
- Solr
- FedoraCommons
- CouchDB
- Hash

Exporters

- Atom
- BibTeX
- CSV
- JSON
- RIS
- Template
- XLS
- YAML
- MARCXML
- RTF
- ODS

Fixes

- add_field
- append
- capitalize
- clone
- collapse
- copy_field
- downcase
- expand
- join_field
- move_field
- nothing
- prepend
- remove_field

Fixes

- `replace_all`
- `retain_field`
- `set_field`
- `split_field`
- `substring`
- `trim`
- `upcase`
- `marc_map`
- `marc_in_json`
- `marc_xml`
- `mab_map`
- `mab_in_json`
- `mab_xml`
- `cmd`

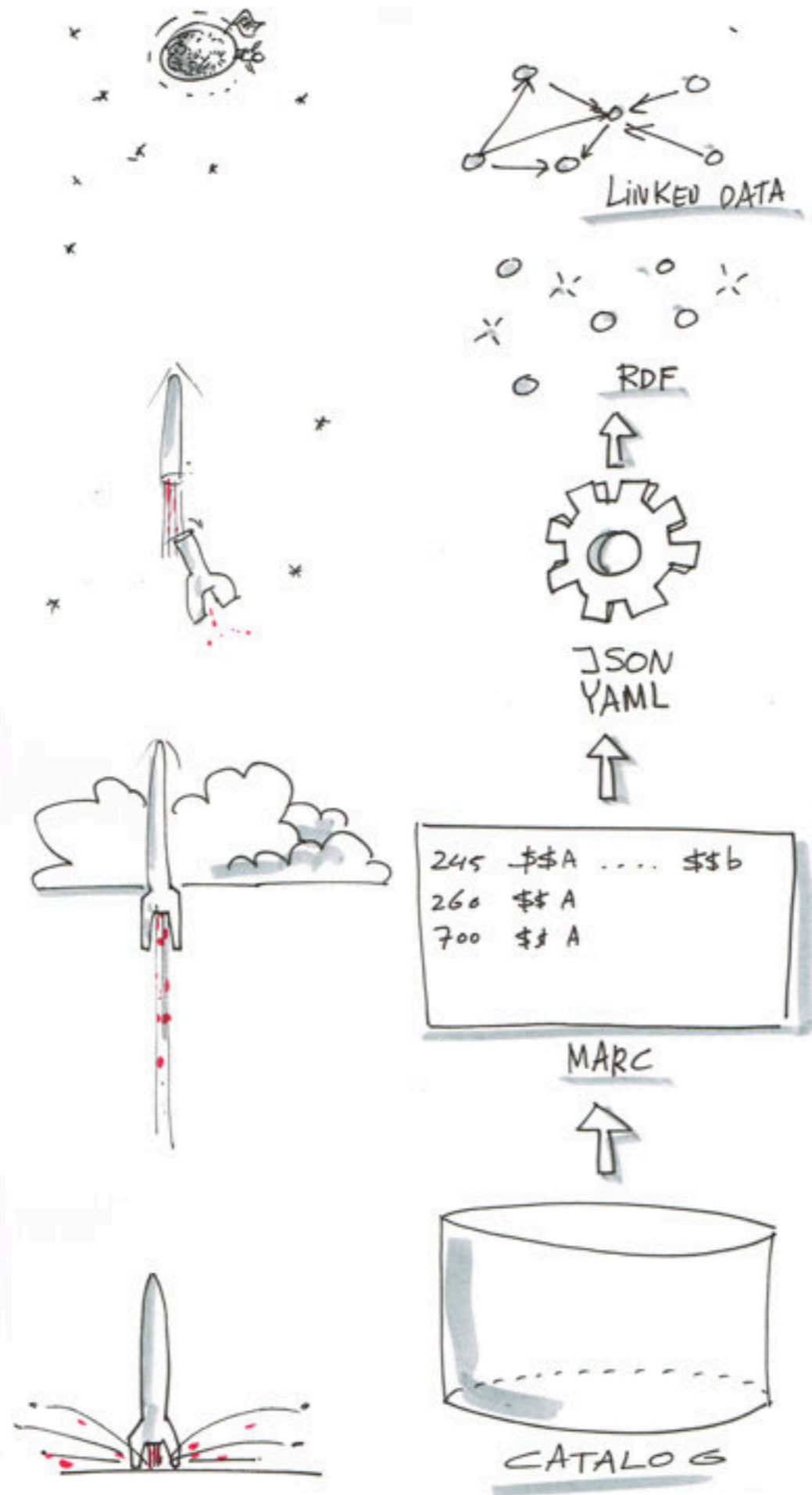
Fixes

- sum
- lookup
- lookup_in_store
- to_json
- from_json

Fixes (conditionals)

- `if_all_match`
- `unless_all_match`
- `if_any_match`
- `unless_any_match`
- `if_exists`
- `unless_exists`
- `otherwise`
- `end`

RDF in Catmandu

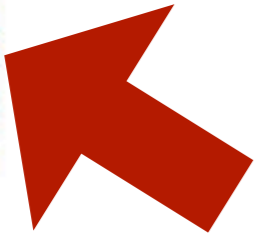


MongoAdmin

Data stores

Stored

- [ejn01](#)
- [rug01](#)
- [ser01](#)
- [tst01](#)



Support

- [author](#)
- [boost](#)
- [cover](#)
- [frbr.global_id](#)
- [frbr.same_as](#)
- [frbr.related_to](#)
- [subject](#)
- [summary](#)
- [viaf](#)
- [wikipedia](#)

Merge

- [merge](#)



<http://ec2-50-17-116-137.compute-1.amazonaws.com>

swib2013/swib2013

rug01.data

Find:

Upload:

No file chosen

10000 hits

Search results

id	global_id	same_as	related_to	role	version
rug01:000000002	9780855275105				2013-11-12T13:55:58Z
rug01:000000006	9789014026183				2013-11-12T13:55:58Z
rug01:000000003	9783110035179				2013-11-12T13:55:58Z



rug01.data->rug01:0000000002

Fix routines:

Fix inline (see [documentation](#)):Use live data?

Export to:



```
---
_id: rug01:0000000002
items: '[{"department":"LW06","volume":"","location":"L17.XIX02.01.242C","barcode":"000010400338","library":"L17","faculty":"LW","holding":"","note":"","issue":"","item_status":"02","item_status_h":"LOAN/open shelves","is_closed_stack":"true","publication_year":"","item_process_status":"","material":"BOOK"},{"department":"LW06","volume":"","location":"L18.L010F128","barcode":"902-20","library":"L18","faculty":"LW","holding":"","note":"","issue":"","item_status":"02","item_status_h":"LOAN/open shelves","is_closed_stack":"true","publication_year":"","item_process_status":"","material":"BOOK"},{"department":"LW01","volume":"","location":"L27.18M201","barcode":"000010206368","library":"L27","faculty":"LW","holding":"","note":"","issue":"","item_status":"02","item_status_h":"LOAN/open shelves","is_closed_stack":"true","publication_year":"","item_process_status":"","material":"BOOK"},{"department":"LW06","volume":"","location":"L33.D01.006.063","barcode":"000010184913","library":"L33","faculty":"LW","holding":"","note":"","issue":"","item_status":"02","item_status_h":"LOAN/open shelves","is_closed_stack":"true","publication_year":"","item_process_status":"","material":"BOOK"}]'
merge:
  global_id:
  - '9780855275105'
  id: rug01:0000000002
```

rug01.data->rug01:0000000002

Fix routines:

Fix inline (see [documentation](#)):

Use live data?

Export to:

rug01:0000000002 **FMT**
rug01:0000000002 **LDR** 00000nam a2200301 i 4500
rug01:0000000002 **001** 000000002
rug01:0000000002 **005** 20060108100247.0
rug01:0000000002 **008** 780804s1977^^^^enk^^^^^^b^^^^001^0^eng^^
rug01:0000000002 **010** **SSa**78307846
rug01:0000000002 **015** **SSa**GB***
rug01:0000000002 **020** **SSa**0855275103 : **SSc**13.50
rug01:0000000002 **035** **SS9**(DLC) 78307846
rug01:0000000002 **040** **SSa**DLC **SSc**DLC **SSd**DLC
rug01:0000000002 **050** **SSa**P325 **SSb**.K34 1977b
rug01:0000000002 **082** **SSa**415
rug01:0000000002 **100** 1 **SSa**Katz, Jerrold J.
rug01:0000000002 **245** 1 **SSa**Propositional structure and illocutionary force : **SSb**a study of the contribution of sentence meaning to speech acts /
SScJerrold J. Katz.
rug01:0000000002 **260** **SSa**Hassocks : **SSb**Harvester press, **SSc**1977.
rug01:0000000002 **300** **SSa**xv, 249 p. ; **SSc**25 cm.
rug01:0000000002 **490** **SSa**The Language and thought series
rug01:0000000002 **504** **SSa**Includes bibliographical references and index.

tst01.data->demo

Fix routines:

Fix inline (see [documentation](#)):

```
add_field('test','123');
```

Export to:

```
---  
test: 123
```

Data stores

Stored

- [ejn01](#)
- [rug01](#)
- [ser01](#)
- [tst01](#)

Support

- [author](#)
- [boost](#)
- [cover](#)
- [frbr.globl_id](#)
- [frbr.same_as](#)
- [frbr.related_to](#)
- [subject](#)
- [summary](#)
- [viaf](#)
- [wikipedia](#)

Merge

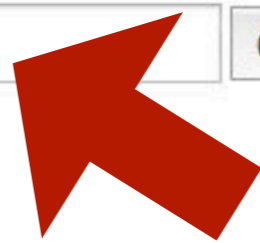
- [merge](#)



author.data

Find:

Upload:



1 hits

Search results

id	global_id	same_as	related_to	role	version
author:Jerrold_Katz					2013-11-15T07:51:16Z

author.data

Find:

Upload:

1 hits

previous

id

author:Jerrold_K

```
1 |---
2 |_id: Jerrold_Katz
3 |url: https://en.wikipedia.org/wiki/Jerrold_Katz
4 |name:
5 |  - Jerrold J. Katz
6 |  - Jerrold Katz
7 |
```




Line 1, Column 1

Tab Size: 4

NotePad (Windows) | TextEdit (Mac) | Vi (Linux) | <http://www.editpad.org/> (Online)

MARC

Data

头标区	----nam0 22---- 450
ID 号	006783508
通用数据	20130829d2013 em y0chiy50 ea
题名与责任	● 列夫·托尔斯泰文集. 5-8, 战争与和平 [专著] / 刘辽逸译
出版项	● 北京：人民文学出版社, 2013
载体形态项	4册(1503页)：照片；21cm
语言	chirus
主题	● 托尔斯泰 ● 长篇小说 -- 俄罗斯 -- 近代 ● 托尔斯泰 ● 长篇小说
中图分类号	● I512.14 ● I512.44
著者	● (俄)托尔斯泰
附加款目	● 刘辽逸 (1915.1~) 译
所有单册	查看所有馆藏单册信息
馆藏	中文基藏 
馆藏	书刊保存本库 
馆藏	北区中文图书区 

Data

FMT	BK
LDR	----nam0 22---- 450
001	006783508
005	20130918100808.0
010	a 978-7-02-008386-2 b 精装 d CNY890.00(全17册)
100	a 20130829d2013 em y0chiy50 ea
1011	a chi c rus
102	a CN b 110000
105	a a z 000ay
106	a r
2001	a 列夫·托尔斯泰文集 h 5-8 i 战争与和平 b 专著 f 刘辽逸译 9 lie fu · tuo er si tai wen ji
210	a 北京 c 人民文学出版社 d 2013
215	a 4册(1503页) c 照片 d 21cm
600 0	a 托尔斯泰
6060	a 长篇小说 y 俄罗斯 z 近代
600 0	a 托尔斯泰
6060	a 长篇小说
690	a I512.14 v 5
690	a I512.44 v 5
701 0	c (俄) a 托尔斯泰
702 0	a 刘辽逸 f (1915.1~) 4 译 9 liu liao yi
090	a I512.1 b tes
096	a I512.1 b lly
CAT	a ZWCFWB8 b 01 c 20130829 NLC01 h 1358

Syntax

FMT	BK
LDR	00000cam 22003011 4500
001	001643712
005	20110727090642.0
008	730213t19521952ilub 000 1 eng
010	a 55010357
035	9 (DLC) 55010357
040	a DLC c DLC d DLC
0411	a engrus
043	a e-fr--- a e-ur---
05000	a AC1 b .G72 vol. 51
08200	a 891.734*
1001	a Tolstoj, Lev Nikolaevič, d 1828-1910
24010	a Vořna i mir. l English
24510	a War and peace / c by Leo Tolstoy; Translated by Louise and Aylmer Maude.
260	a Chicago : b Encyclopædia Britannica, c 1952.
300	a xvi, 696 p. : b maps. ; c 25 cm.
4900	a Great books of the western world v 51
651 0	a Russia x History y Alexander I, 1801-1825 x Fiction.
650 0	a Napoleonic Wars, 1800-1815 x Campaigns z Russia x Fiction.
655 7	a Historical fiction. 2 gsafd
655 7	a War stories. 2 gsafd
7001	a Maude, Louise (Shanks) d 1855-1939
7001	a Maude, Aylmer, d 1858-1938.

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title: War and peace



Syntax

FMT	BK
LDR	00000cam 22003011 4500
001	001643712
005	20110727090642.0
008	730213t19521952ilub 000 1 eng
010	a 55010357
035	9 (DLC) 55010357
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655 7	a Historical fiction. 2 gsafd
655 7	a War stories. 2 gsafd
7001	a Maude, Louise (Shanks) d 1855-1939
7001	a Maude, Aylmer, d 1858-1938.

title: War and peace

year: 1952



Syntax

FMT	BK
LDR	00000cam 22003011 4500
001	001643712
005	20110727090642.0
008	730213t19521952ilub 000 1 eng
010	a 55010357
035	9 (DLC) 55010357
040	a DLC c DLC d DLC
0411	a engrus
043	a e-fr--- a e-ur---
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1001	a Tolstoj, Lev Nikolaeviĉ, d 1828-1910
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7001	a Maude, Louise (Shanks) d 1855-1939
7001	a Maude, Aylmer, d 1858-1938.

title: War and peace

year: 1952

author:

first: Lev Nikolaeviĉ

last: Tolstoj

Task

* Use the RUG01 collection. Find the MARC fields for:

- * title
- * language
- * subject
- * isbn
- * issn
- * extent (number of pages)
- * issued (the year of publication)
- * publication type
- * authors
- * publisher

* Hint: <http://www.loc.gov/marc/bibliographic/>

* Write down any operations that are need to get an exact answer.

Task

*Write a Catmandu Fix to extract all the fields from the example RUG01 records

Linked Data

Hochstenbach

Daily doodles, sketches and cartoons

About



Cartoon Class, Comics

The Penguin & The Shark

Here is it is! My three page comic completely inked. Learned a bit more about inking in Adobe Illustrator this week. Used a 3 point rounded brush (15% angle, rounding 50%, 3pt variation). The fonts are WildAndCrazy (serif), Bedboom (sans-serif)

November 11, 2013 | Leave a comment



Cartoon Class, Cartoons, Color, Comics, Doodles, Sketches

Creating a comic

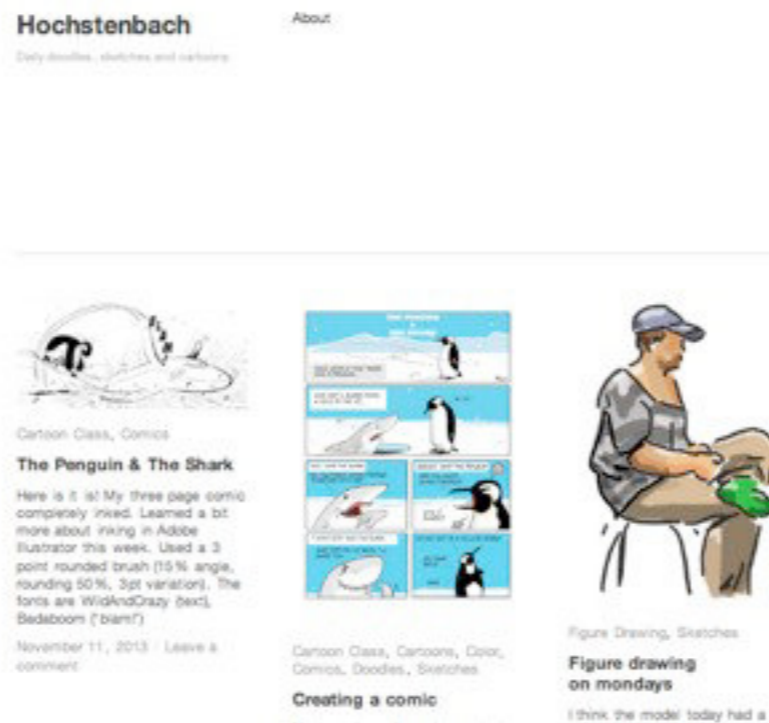
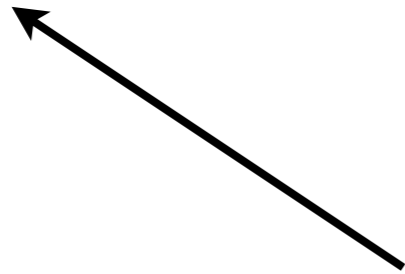


Figure Drawing, Sketches

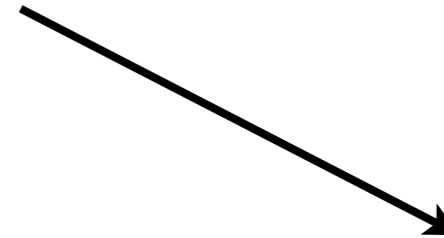
Figure drawing on mondays

I think the model today had a

<http://hochstenbach.wordpress.com>



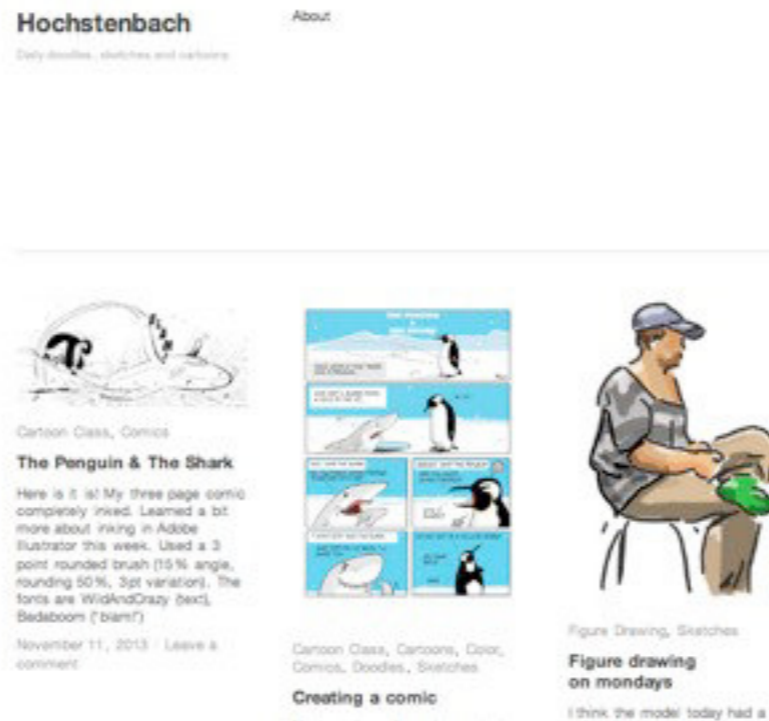
“Daily doodles, sketches and cartoons”



<http://liesbethdestercke.tumblr.com/>

<http://hochstenbach.wordpress.com>

about

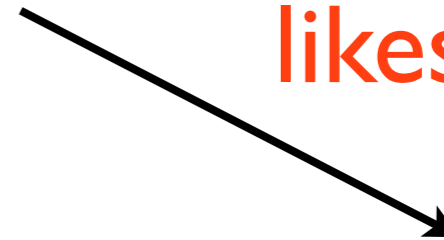


title



“Daily doodles, sketches and cartoons”

likes



<http://liesbethdestercke.tumblr.com/>



Cartoon Class, Comics
The Penguin & The Shark

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November 11, 2013 · Leave a comment



Cartoon Class, Cartoons, Color, Comics, Doodles, Sketches
Creating a comic



Figure Drawing, Sketches

Figure drawing on Mondays

I think the model today had a

likes

<http://liesbethdestercke.tumblr.com/>



“Liesbeth De Stercke”

rtoons”



Cartoon Class, Comics
The Penguin & The Shark

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November 11, 2013 · Leave a comment



Cartoon Class, Cartoons, Color, Comics, Doodles, Sketches
Creating a comic

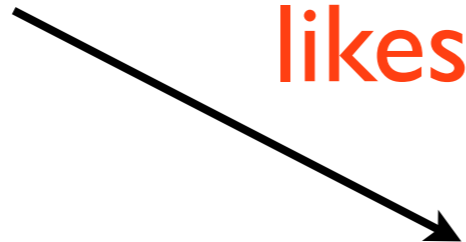


Figure Drawing, Sketches

Figure drawing on Mondays

I think the model today had a

likes

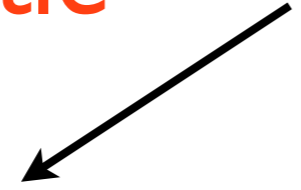


<http://liesbethdestercke.tumblr.com/>

about



title



“Liesbeth De Stercke”

likes



rtoons”

...add image of that bubble network here...

RDF

Triple

subject

predicate

object

<http://hochstenbach.wordpress.com>

<http://purl.org/dc/elements/1.1/creator>

“Patrick Hochstenbach”

Triple

subject

predicate

object

http://hochstenbach.wordpress.com	http://purl.org/dc/elements/1.1/creator	“Patrick Hochstenbach”
http://hochstenbach.wordpress.com	http://purl.org/dc/elements/1.1/title	“Daily doodles, sketches and cartoons”
http://liesbethdestercke.tumblr.com/	http://purl.org/dc/elements/1.1/creator	“Liesbeth De Stercke”
http://liesbethdestercke.tumblr.com/	http://purl.org/dc/elements/1.1/title	“Liesbeth De Stercke”

Vocabulary

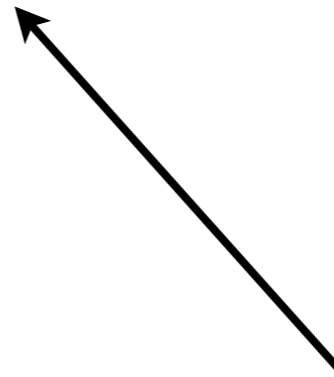
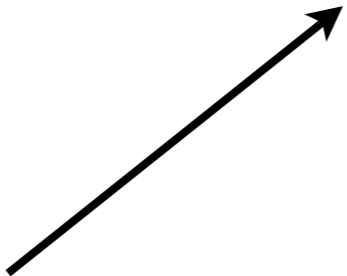
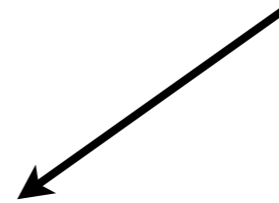
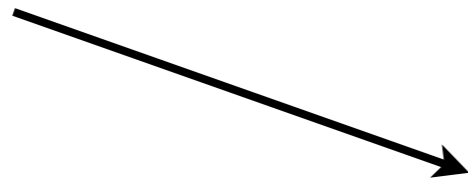
Author

Main Entry - Personal Name



Creator

100-\$\$a



Vocabulary

<http://patrick.com/patricks/vocabulary>

Author

<http://www.loc.gov/marc/bibliographic/>

Main Entry - Personal Name



Creator

<http://purl.org/dc/elements/1.1/>

100-\$\$a

<http://www.iso.org/ISO-2709:2008>

Task

- * Write down the personal information about yourself from YAML into a tabular form subject, predicate, object.
- * Write all the subjects and predicates in the form of a URL.
- * Create linked data pointing to the personal information of others.

Serialization

RDF/XML

```
<?xml version="1.0"?>
<rdf:RDF xmlns:rdf="http://www.w3.org/1999/02/22-rdf-syntax-ns#" xmlns:wgspos="http://www.w3.org/2003/01/geo/wgs84_pos#"
xmlns:ns="http://purl.org/dc/elements/1.1/" xmlns:ns1="http://xmlns.com/foaf/0.1/">
  <rdf:Description rdf:about="http://hochstenbach.wordpress.com">
    <ns:title xml:lang="en">Doodles</ns:title>
    <wgspos:location wgspos:lat="9.93492" wgspos:long="51.539371" />
    <ns1:age rdf:datatype="http://www.w3.org/2001/XMLSchema#integer">42</ns1:age>
    <ns1:workplaceHomepage rdf:resource="http://lib.ugent.be/" />
  </rdf:Description>
</rdf:RDF>
```

RDF/Turtle

```
@prefix dc: <http://purl.org/dc/elements/1.1/> .
```

```
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
```

```
<http://hochstenbach.wordpress.com>
```

```
dc:title "Doodles"@en ;
```

```
geo:location [
```

```
  geo:lat "9.93492" ;
```

```
  geo:long "51.539371"
```

```
];
```

```
foaf:age 42 ;
```

```
foaf:workplaceHomepage <http://lib.ugent.be/> .
```

aRDF

```
---
'_id': http://hochstenbach.wordpress.com
dc:title: Doodles@en
foaf:age: 42^^xsd:integer
foaf:workplaceHomepage:
  '@id': http://lib.ugent.be
geo:location:
  geo:lat: 9.93492
  geo:long: 51.539371
```

Turtle

Triple

subject

predicate

object

http://hochstenbach.wordpress.com	http://purl.org/dc/elements/1.1/creator	“Patrick Hochstenbach”
-----------------------------------	---	------------------------

<http://hochstenbach.wordpress.com> <http://purl.org/dc/elements/1.1/creator> “Patrick Hochstenbach” .

<http://hochstenbach.wordpress.com>

<http://purl.org/dc/elements/1.1/creator> “Patrick Hochstenbach” .

Prefix

subject

predicate

object

<http://hochstenbach.wordpress.com>

<http://purl.org/dc/elements/1.1/creator>

“Patrick Hochstenbach”

@prefix dc: <<http://purl.org/dc/elements/1.1/>> .

<<http://hochstenbach.wordpress.com>>

dc:creator

“Patrick Hochstenbach” .

Subjects “.”

subject

predicate

object

http://hochstenbach.wordpress.com	http://purl.org/dc/elements/1.1/creator	“Patrick Hochstenbach”
http://hochstenbach.wordpress.com	http://purl.org/dc/elements/1.1/title	“Daily doodles, sketches and cartoons”

@prefix dc: <http://purl.org/dc/elements/1.1> .

<http://hochstenbach.wordpress.com>

dc:creator

“Patrick Hochstenbach” .

<http://hochstenbach.wordpress.com>

dc:title

“Daily doodles, sketches and cartoons” .

Subjects “;”

subject

predicate

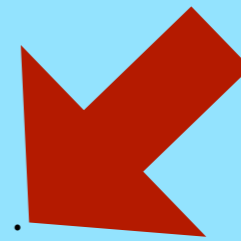
object

http://hochstenbach.wordpress.com	http://purl.org/dc/elements/1.1/creator	“Patrick Hochstenbach”
http://hochstenbach.wordpress.com	http://purl.org/dc/elements/1.1/title	“Daily doodles, sketches and cartoons”

@prefix dc: <http://purl.org/dc/elements/1.1> .

<http://hochstenbach.wordpress.com>
dc:creator
dc:title

“Patrick Hochstenbach” ;
“Daily doodles, sketches and cartoons” .



Objects “,”

subject

predicate

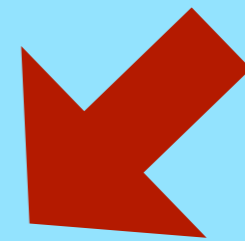
object

http://hochstenbach.wordpress.com	http://purl.org/dc/elements/1.1/creator	“Patrick Hochstenbach”
http://hochstenbach.wordpress.com	http://purl.org/dc/elements/1.1/title	“Daily doodles, sketches and cartoons”
http://hochstenbach.wordpress.com	http://purl.org/dc/elements/1.1/title	“Hochstenbach”

@prefix dc: <http://purl.org/dc/elements/1.1> .

<http://hochstenbach.wordpress.com>
dc:creator
dc:title

“Patrick Hochstenbach” ;
“Daily doodles, sketches and cartoons” ,
“Hochstenbach” .



Task

* Write your personal information from the tabular format into the Turtle language.

* Validate your Turtle at <http://www.rdfabout.com/demo/validator/>

aRDF

Literals

@prefix dc: <http://purl.org/dc/elements/1.1/> .

<http://hochstenbach.wordpress.com>

dc:title "Daily doodles, sketches and cartoons" .

_id: http://hochstenbach.wordpress.com

dc:title: "Daily doodles, sketches and cartoons"

add_field('_id','http://hochstenbach.wordpress.com');

add_field('dc:title','Daily doodles, sketches and cartoons');

<http://dublincore.org/documents/dcmi-terms/>

Language

@prefix dc: <http://purl.org/dc/elements/1.1/> .

<http://hochstenbach.wordpress.com>

dc:title "Daily doodles, sketches and cartoons"@en.

_id: http://hochstenbach.wordpress.com

dc:title: "Daily doodles, sketches and cartoons@en"

add_field('_id','http://hochstenbach.wordpress.com');

add_field('dc:title','Daily doodles, sketches and cartoons@en');

Numbers

```
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
```

```
<http://hochstenbach.wordpress.com>
```

```
foaf:age
```

```
“42”^^xsd:integer .
```

```
_id: http://hochstenbach.wordpress.com
```

```
foaf:age: 42^^xsd:integer
```

```
add_field(‘_id’,http://hochstenbach.wordpress.com’);
```

```
add_field(‘foaf:age’,‘42^^xsd:integer’);
```

<http://xmlns.com/foaf/spec/>

XSD Data Types

- `xsd:string` , `xsd:language`
- `xsd:date` , `xsd:time` , `xsd:dateTime` ,
`xsd:duration`
- `xsd:integer` , `xsd:float`

http://www.w3schools.com/schema/schema_dtypes_date.asp

URI Reference

```
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
```

```
<http://hochstenbach.wordpress.com>
```

```
foaf:workplaceHomepage
```

```
<http://lib.ugent.be>.
```

```
_id: http://hochstenbach.wordpress.com
```

```
foaf:workplaceHomepage: http://lib.ugent.be
```

```
add_field('_id','http://hochstenbach.wordpress.com');
```

```
add_field('foaf:workplaceHomepage','http://lib.ugent.be');
```

```
http://xmlns.com/foaf/spec/
```


Blank Node

@prefix geo: <http://www.w3.org/2003/01/geo/wgs84_pos#> .

<http://hochstenbach.wordpress.com>

geo:location	_:blabla.
_:blabla	geo:lat
	geo:long
	“51.0500” ;
	“3.7167” .

_id: http://hochstenbach.wordpress.com

geo:location.geo:lat: 51.0500

geo:location.geo:long: 3.7167

add_field(‘_id’,http://hochstenbach.wordpress.com’);

add_field(‘geo:location.geo:lat’,‘51.0500’);

add_field(‘geo:location.geo:long’,‘3.7167’);

Class

```
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
```

```
<http://hochstenbach.wordpress.com> a foaf:Person .
```

_id: http://hochstenbach.wordpress.com

a: foaf:Person

```
add_field('_id','http://hochstenbach.wordpress.com');
```

```
add_field('a','foaf:Person');
```

<http://code.google.com/p/bibotools/source/browse/bibo-ontology/tags/1.0/bibo.n3>

Task

* Translate the Turtle below in aRDF

```
@prefix dc: <http://purl.org/dc/elements/1.1/> .
```

```
<http://swib.org> dc:title "Semantic Web in Libraries" .
```

Task

- * Use Mongo Admin Test to create the following Turtle expression:

```
@prefix dc: <http://purl.org/dc/elements/1.1/> .  
<http://swib.org> dc:title "Semantic Web in Libraries" .
```

- * Add code to specify this is an English title
 - * Add a title in another language
- * Add the number of times you attended SWIB in dc:extent
 - * Create an integer value out of dc:extent
 - * Classify swib.org as a FOAF 'Organization'
- * Express that SWIB is a member of the HBZ <http://www.hbz-nrw.de/>

Task

Convert the rug01 MARC records to RDF
using

<https://wiki.lhbz-nrw.de/display/SEM/Converting+the+Open+Data+from+the+hbz+to+BIBO>

as example

Hint: translate the mapping to MARC

<http://www.loc.gov/marc/bibliographic/>

Linked Data

cmp_field

```
marc_map('008/7-10','year');  
cmp_field('year', '1990');
```

- `year == 1` if `year > 1900`
- `year == 0` if `year == 1900`
- `year == -1` if `year < 1900`

count

```
add_field('author.$append','James');  
add_field('author.$append','Jones');  
count('author');
```

author == 2

weave_by_id

```
weave_by_id('cover');
```

lookup contains the complete record
from the store 'covers' where '_id' is the
current record id

weave_by_query

```
add_field('lookup.name','Jerrold Katz');  
weave_by_query('lookup', -store=>'author');
```

lookup contains the complete record
from the store 'author' where 'name' is
'Jerrold Katz'

Task

- * Find for some RUG01 records the URL to a cover image
- * Create a YAML file in Notepad containing the '_id' of the RUG01 record and the 'cover_remote' URL to the image
 - * Upload the YAML file into the cover database
 - * Use `weave_by_id` to test insert the image into the record
 - * Find an appropriate RDF expression for this URL

Task

- * Find for some RUG01 record the author name in Wikipedia (or any other authoritative page)
- * Create a YAML file in Notepad containing the author 'name' and 'url' the his website
 - * Upload the YAML file in the author database
- * Use `weave_by_query` to lookup the author name for the record
 - * Find an appropriate RDF expression for this URL