

Miravi - a Linked Data Viewer

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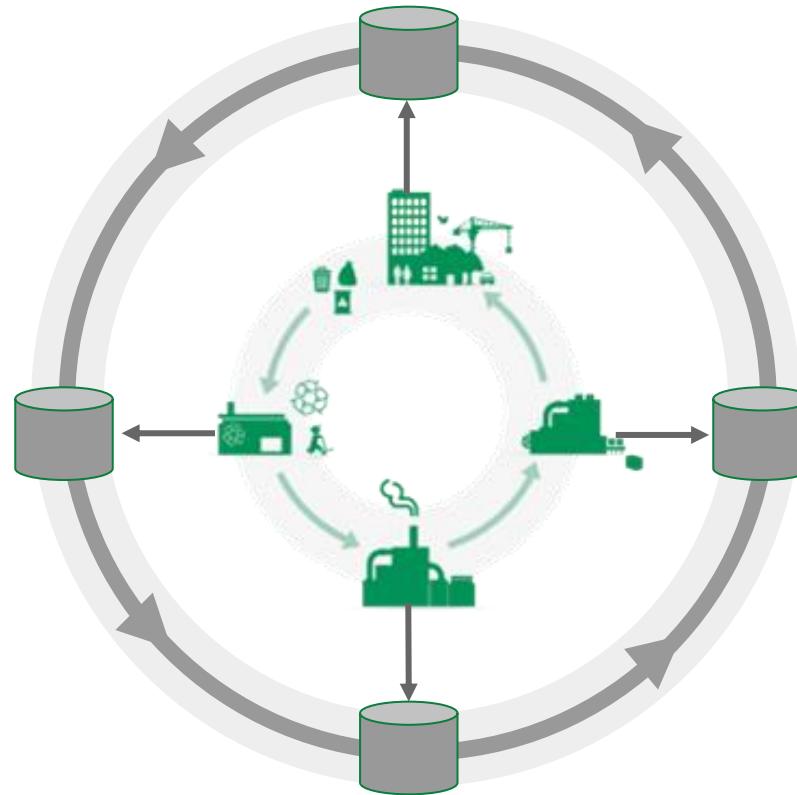
Consuming Decentralized Linked Data

Consuming Decentralized Linked Data

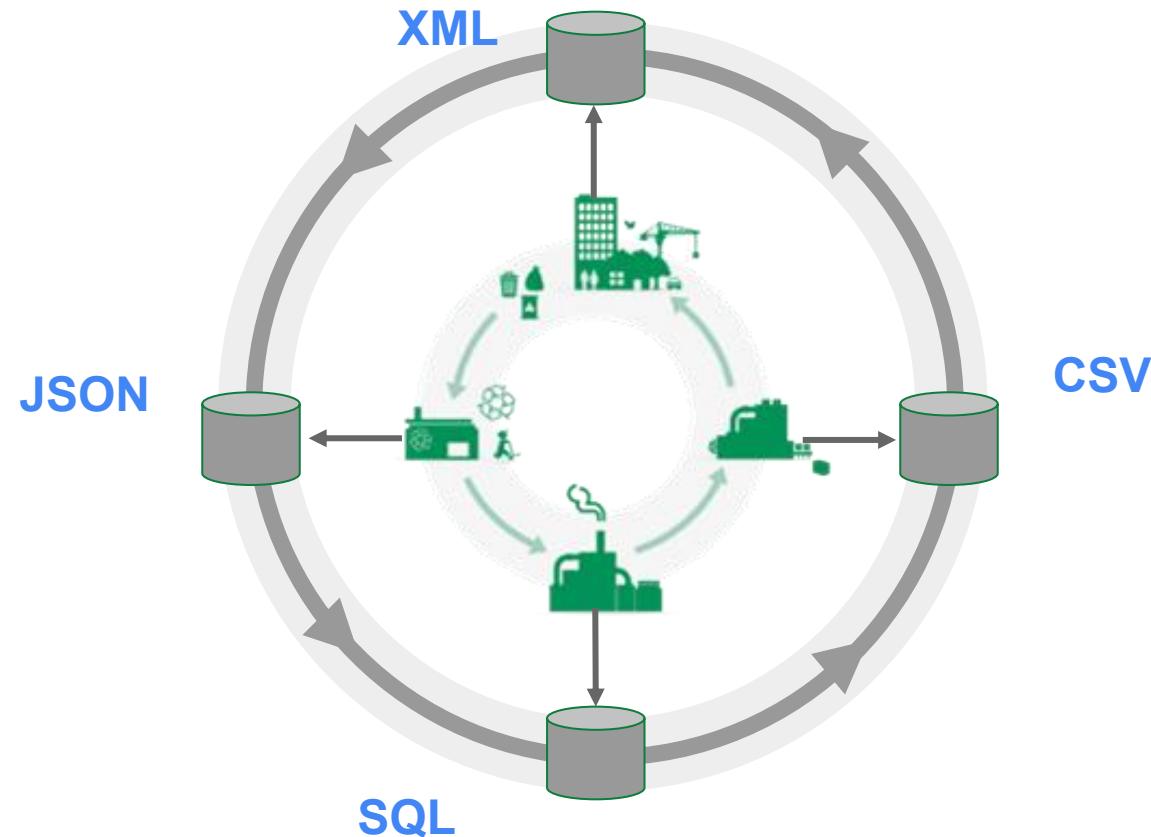
A circular economy use case



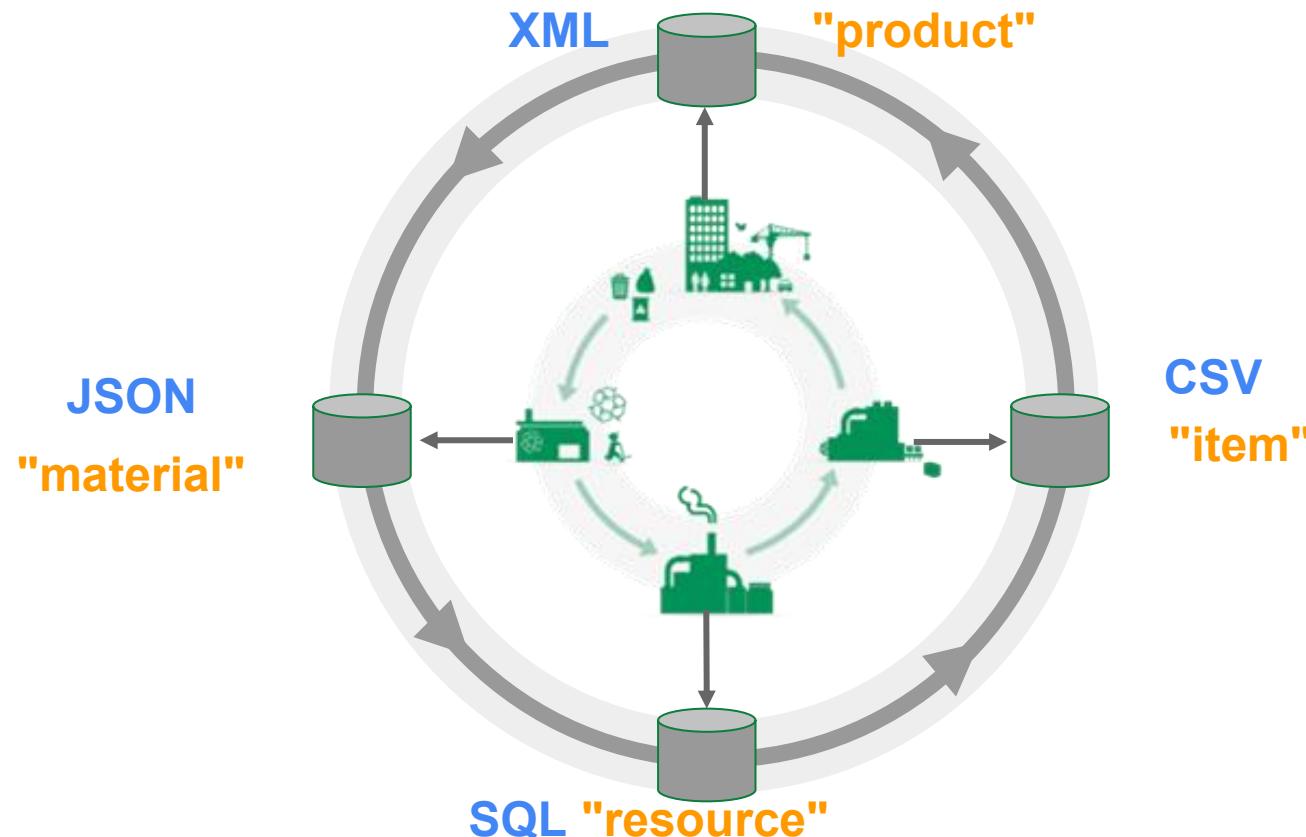
Circular economy needs data flows



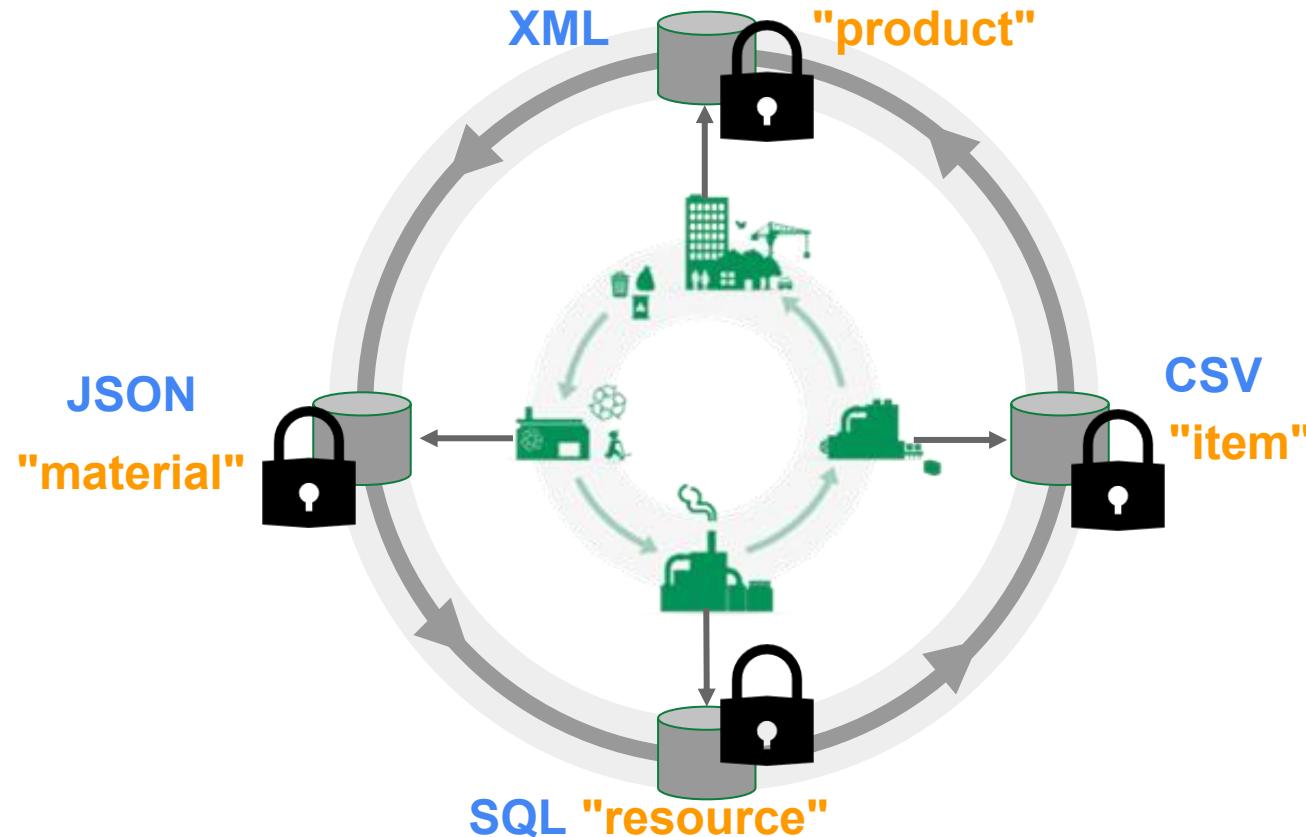
Each actor has his own data **format**



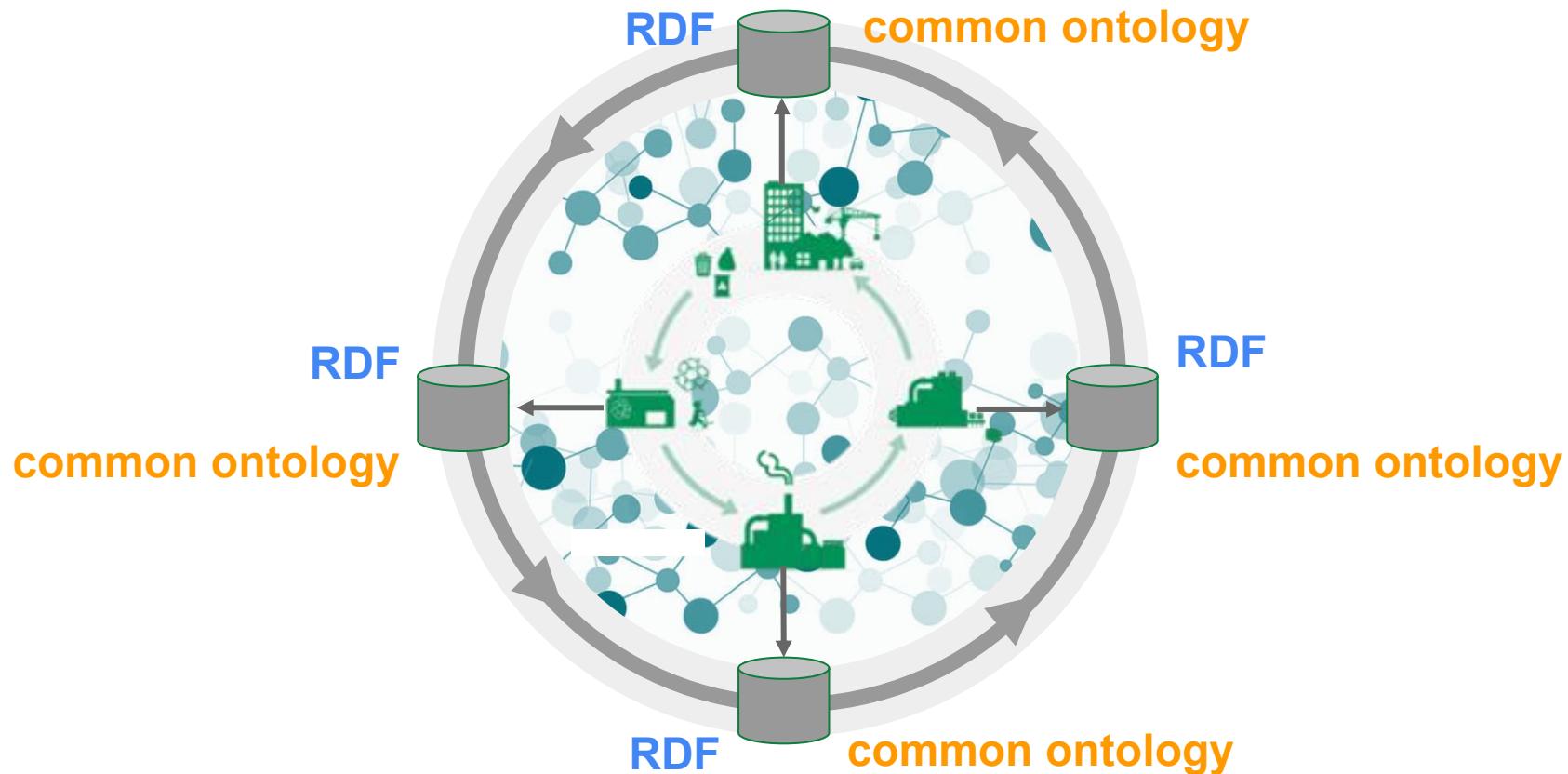
Each actor has his own data **model**



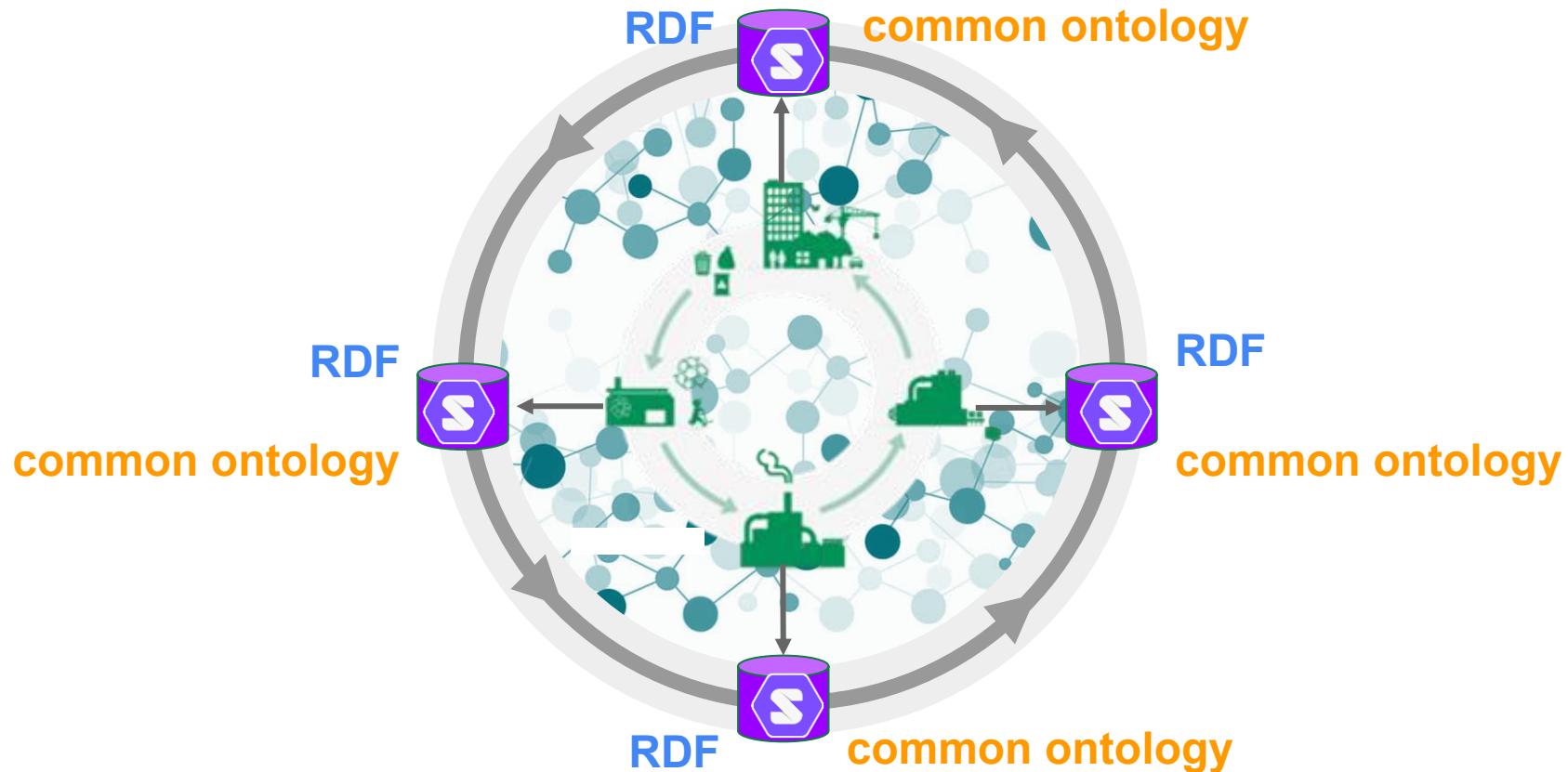
Each actor wants to remain in **control** of his data



RDF secures semantic interoperability



SOLID secures technical interoperability and control



Users experience the benefits
of these *backend* solutions
through *frontend* applications.

Content

High level description

Setup

Basic use demo (explaining also the configuration)

Advanced: custom queries

Applications

Conclusion

Content

High level description

Setup

Basic use demo (explaining also the configuration)

Advanced: custom queries

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Conclusion

Miravi is a configurable Linked Data viewer

with **client-side** processing of **SPARQL queries**

over decentralized heterogeneous **Linked Data** sources,

supporting

user **authentication** for permissioned (Solid) data sources,

data source and variable discovery,

inspection of **data source status**,

export of query results, and

custom queries.

Miravi reuses open-source components



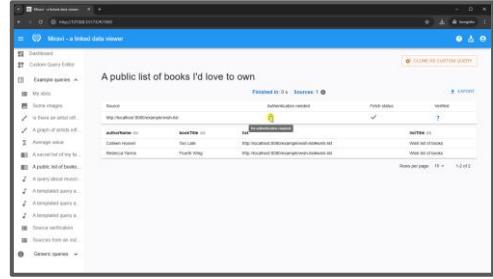
IDLab's Comunica: knowledge graph querying framework



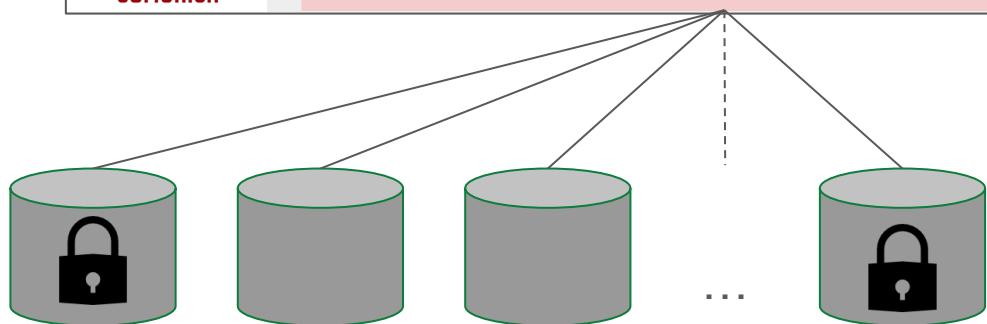
Inrupt's Solid Client Authentication library



Marmelab's React-Admin Web framework



The Ra logo, which consists of a blue square with white letters 'Ra' and a red square with white geometric shapes below it, is positioned on the left. To its right is a light blue rectangular area containing the text "Table-based UI". Further right is a white rectangular box containing the "inrupt" logo and the text "Authentication lib". Below these elements is a pink rectangular area containing the text "Heterogeneous SPARQL Querying".



PREFIX schema: <http://schema.org/>

```
SELECT ?name ?sameAs_url WHERE {
  ?list schema:name ?listTitle;
        schema:name ?name;
        schema:genre $genre;
        schema:sameAs ?sameAs_url;
}
```

Content

High level description

Setup

Basic use demo (explaining also the configuration)

Advanced use demo

Applications

Conclusion

<https://github.com/SolidLabResearch/miravi-a-linked-data-viewer.git>

Getting started

The Web application is located in directory `main`. Go to that directory.

To install:

```
npm install
```



To select the appropriate configuration (here shown for `demo`):

```
node scripts/select-config.cjs demo
```



To run the Web application in development mode:

```
npm run dev
```



<https://github.com/SolidLabResearch/miravi-a-linked-data-viewer.git>

Getting started

To build:

```
npm run build
```



The static build appears in directory `main/dist`.

This static build can be served on a webserver without modifications from the host's root path (e.g.

`https://www.example.com`), or from any other path (e.g. `https://www.example.com/your/preferred/path`).

To run the Web application in development mode:

```
npm run dev
```



Configuration file

The configuration file must follow the structure shown below.

```
{  
    "title": "Title shown at the top of the app.",  
    "logoLocation": "Image location of the logo shown at the top of the app (relative to public folder.).",  
    "logoRedirectURL": "The URL the Web application redirects to when a user clicks on the logo.",  
    "defaultIDP": "The default value used for IDP when logging in, this IDP can be manually changed in the configuration.",  
    "queryFolder": "The base location of the queries, all query locations will start from this folder (relative to the configuration).",  
    "introductionText": "The text that the app shows on the dashboard, which the app also shows when you first open it.",  
    "queryGroups" : [  
        {  
            "id": "A unique ID for the query group",  
            "name": "A name for the query group",  
            "icon": "The key to the icon for the query group. This is optional and a default menu icon will be used if not provided.",  
        }  
    ],  
    "queries": [  
        {  
            "id": "A unique ID for the query. This ID appears in the URL of the displayed result. Queries are grouped by their query group ID.",  
            "queryGroupId": "ID of the query group to which this query belongs. If not given, the query is considered to belong to the default query group.",  
            "queryLocation": "Path to the query location, relative to 'queryFolder'.",  
            "name": "A name for the query",  
            "description": "Description of the query",  
            "icon": "The key to the icon for the query. This is optional and a default menu icon will be used if not provided.",  
            "parameters": {}  
        }  
    ]  
}
```

Content

High level description

Setup

Basic use demo (explaining also the configuration)

Advanced use: custom queries

Applications

Conclusion

Miravi - a linked data viewer



Dashboard

Custom Query Editor

Example queries

Generic queries

Please log in as the appropriate actor and make your choice in the menu on the left.

Load/save your custom queries from/to a file in a pod. Saving destroys previous file contents.



From:

Log in to connect to a pod.



To:

Log in to connect to a pod.

Miravi - a linked data viewer



- Dashboard
- Custom Query Editor
- Example queries ^
 - Some images
 - Is there an artist infl...
 - A graph of artists infl...
 - Average value
 - A secret list of my fa...
 - A public list of boo... (highlighted)
 - A query about musici...
 - A templated query a...
 - A templated query a...
 - A templated query a...
 - Source verification
 - Sources from an ind...
 - Generic queries ▼

Please log in as the appropriate actor and make your choice in the menu on the left.

Load/save your custom queries from/to a file in a pod. Saving destroys previous file contents.



From:

Log in to connect to a pod.



To:

Log in to connect to a pod.

A public list of books I'd love to own

OWN

Demonstrates a query whose source does not require authentication.

Miravi - a linked data viewer



Dashboard
Custom Query Editor

Example queries ^

My idols
Some images
Is there an artist infl...
A graph of artists infl...
Average value

A secret list of my fa...
A public list of books...

A query about musici...
A templated query a...
A templated query a...
A templated query a...

Source verification
Sources from an ind...

Generic queries ^

CLONE AS CUSTOM QUERY

A public list of books I'd love to own

Finished in: 0 s Sources: 1 ⓘ

EXPORT

authorName ↗	bookTitle ↗	list	listTitle ↗
Colleen Hoover	Too Late	http://localhost:8080/example/wish-list#wish-list	Wish list of books
Rebecca Yarros	Fourth Wing	http://localhost:8080/example/wish-list#wish-list	Wish list of books

Rows per page: 10 ▾ 1-2 of 2

CONFIGURATION

Miravi - a linked data viewer

3/#/1060

Incognito

A public list of books I'd love to own

Finished in: 0 s Sources: 1 ⓘ

EXPORT

authorName ↗	bookTitle ↗	list	listTitle ↗
Colleen Hoover	Too Late	http://localhost:8080/example/wish-list#wish-list	Wish list of books
Rebecca Yarros	Fourth Wing	http://localhost:8080/example/wish-list#wish-list	Wish list of books

PREFIX schema: <http://schema.org/>

```
SELECT * WHERE {
  ?list schema:name ?listTitle;
        schema:itemListElement [
          schema:name ?bookTitle;
          schema:creator [
            schema:name ?authorName
          ]
        ].
}
```

The query variables are mapped to the table headers

books.rq

Miravi - a linked data viewer



- Dashboard
- Custom Query Editor
- Example queries ^
- My idols
- Some images
- Is there an artist infl...
- A graph of artists infl...
- Average value
- A secret list of my fa...
- A public list of books...
- A query about musici...
- A templated query a...
- A templated query a...
- A templated query a...
- Source verification
- Sources from an ind...
- Generic queries ^

CLONE AS CUSTOM QUERY

A public list of books I'd love to own

EXPORT

Some images		Finished in: 0 s Sources: 1 i	
bookTitle ↳	list	listTitle ↳	
Too Late	http://localhost:8080/example/wish-list#wish-list	Wish list of books	
Rebecca Yarros	Fourth Wing	http://localhost:8080/example/wish-list#wish-list	Wish list of books

Rows per page: 10 ▼ 1-2 of 2

Miravi - a linked data viewer



- Dashboard
- Custom Query Editor
- Example queries ^
 - My idols
 - Some images
 - Is there an artist infl...
 - A graph of artists infl...
 - Average value
 - A secret list of my fa...
 - A public list of books...
 - A query about musici...
 - A templated query a...
 - A templated query a...
 - A templated query a...
 - Source verification
 - Sources from an ind...
- Generic queries ▼

CLONE AS CUSTOM QUERY

Some images

Finished in: 0 s Sources: 1 i

EXPORT

name	image
Felix	
Garfield	

Rows per page: 10 ▾ 1-2 of 2

CONFIGURATION

Miravi - a linked data viewer

3/#/1010

Incognito

- From Query Editor
- Example queries ▾
- My idols
- Some images
- Is there an artist infl...
- A graph of artists infl...
- Average value
- A secret list of my fa...
- A public list of books...
- A query about musici...
- A templated query a...
- A templated query a...
- A templated query a...
- Source verification
- Sources from an ind...
- Generic queries ▾

Some images

Finished in: 0 s Sources: 1 ⓘ

EXPORT

name ↗	image ↗
Felix	
Garfield	

Variable type specification
to get an adequate
representation in Miravi.

images_test.rq

```
PREFIX schema: <http://schema.org/>
SELECT ?name ?image_img
WHERE {
    ?list schema:name ?listTitle;
          schema:itemListElement [
            schema:image ?image_img;
            schema:name ?name
          ].
}
```

Miravi - a linked data viewer



- Dashboard
- Custom Query Editor
- Example queries ^
 - My idols
 - Some images
 - Is there an artist infl...
 - A graph of artists infl...
 - Average value
 - A secret list of my fa...
 - A public list of books...
 - A query about musici...
 - A templated query a...
 - A templated query a...
 - A templated query a...
 - Source verification
 - Sources from an ind...
- Generic queries ▼

CLONE AS CUSTOM QUERY

Some images

Finished in: 0 s Sources: 1 i

EXPORT

name ↔	image 🔗
Felix	
Garfield	

Rows per page: 10 ▾ 1-2 of 2

CONFIGURATION

Miravi - a linked data viewer

3/#/1010

Incognito

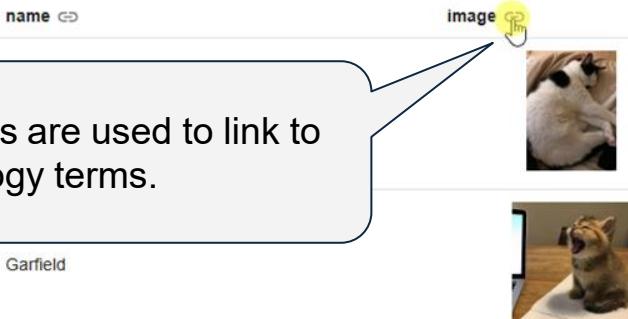
CLONE AS CUSTOM QUERY

EXPORT

Some images

Finished in: 0 s Sources: 1

Predicates are used to link to the ontology terms.



images_test.rq

```
PREFIX schema: <http://schema.org/>
SELECT ?name ?image_img
WHERE {
    ?list schema:name ?listTitle;
          schema:itemListElement [
              schema:image ?image_img;
              schema:name ?name
            ] .
}
```

🔍

image

A Schema.org Property

[Thing](#) > [Property](#) :: **image**

[more...]

An image of the item. This can be a [URL](#) or a fully described [ImageObject](#).

Values expected to be one of these types

- [ImageObject](#)
- [URL](#)

Used on these types

- [Thing](#)

Sub-properties

- [colorSwatch](#)
- [layoutImage](#)
- [logo](#)
- [photo](#)

Miravi - a linked data viewer



Some images

[CLONE AS CUSTOM QUERY](#)Finished in: 0 s Sources: 1 [i](#)[EXPORT](#)

name ↗	image ↗
Felix	

A public list of books I'd love to own
Demonstrates a query whose source does not require authentication.



Rows per page: 10 ▾ 1-2 of 2

- Dashboard
- Custom Query Editor
- Example queries ▾
- My idols
- Some images
- Is there an artist infl...
- A graph of artists infl...
- Average value
- A secret list of my fa...
- A public list of boo...
- A query about musici...
- A templated query a...
- A templated query a...
- A templated query a...
- Source verification
- Sources from an ind...
- Generic queries ▾

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1060

Incognito

Miravi - a linked data viewer

Dashboard

Custom Query Editor

Example queries ^

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries ▾

CLONE AS CUSTOM QUERY

A public list of books I'd love to own

Finished in: 0 s Sources: 1

EXPORT

authorName ↗	bookTitle ↗	list	Sources info	listTitle ↗
Colleen Hoover	Too Late	http://localhost:8080/example/wish-list#wish-list		Wish list of books
Rebecca Yarros	Fourth Wing	http://localhost:8080/example/wish-list#wish-list		Wish list of books

Rows per page: 10 ▾ 1-2 of 2

127.0.0.1:5173/#/1060

Miravi - a linked data viewer



Dashboard

Custom Query Editor

Example queries ^

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries ^

CLONE AS CUSTOM QUERY

A public list of books I'd love to own

Finished in: 0 s Sources: 1 ⓘ

EXPORT

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/wish-list		✓	?
authorName ↗	bookTitle ↗	list	listTitle ↗
Colleen Hoover	Too Late	http://localhost:8080/example/wish-list#wish-list	Wish list of books
Rebecca Yarros	Fourth Wing	http://localhost:8080/example/wish-list#wish-list	Wish list of books

Rows per page: 10 ▾ 1-2 of 2

Miravi - a linked data viewer



- Dashboard
- Custom Query Editor
- Example queries ^
- My idols
- Some images
- Is there an artist infl...
- A graph of artists infl...
- Average value
- A secret list of my fa...
- A public list of books...
- A query about musici...
- A templated query a...
- A templated query a...
- A templated query a...
- Source verification
- Sources from an ind...
- Generic queries ^

[CLONE AS CUSTOM QUERY](#)

A public list of books I'd love to own

Finished in: 0 s Sources: 1 [i](#)[EXPORT](#)

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/wish-list	 No authentication required	✓	?
authorName ↗	bookTitle ↗	list ↗	listTitle ↗
Colleen Hoover	Too Late	http://localhost:8080/example/wish-list#wish-list	Wish list of books
Rebecca Yarros	Fourth Wing	http://localhost:8080/example/wish-list#wish-list	Wish list of books

Rows per page: 10 ▾ 1-2 of 2

This source is publicly available,
without authentication

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1060

Incognito

Miravi - a linked data viewer

Dashboard

Custom Query Editor

Example queries ^

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my f...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries ^

CLONE AS CUSTOM QUERY

A public list of books I'd love to own

Finished in: 0 s Sources: 1 ⓘ

EXPORT

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/wish-list	🔒	✓	?
authorName ↗	bookTitle ↗	list	listTitle ↗
Too Late		http://localhost:8080/example/wish-list#wish-list	Wish list of books
	Fourth Wing	http://localhost:8080/example/wish-list#wish-list	Wish list of books

A secret list of my favorite books

Demonstrates a query whose source requires authentication.

Rows per page: 10 ▾ 1-2 of 2

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1050

Incognito

Miravi - a linked data viewer

- Dashboard
- Custom Query Editor
- Example queries 
- My idols
- Some images
- Is there an artist infl... 
- A graph of artists infl... 
- Average value 
- A secret list of my fa... 
- A public list of books... 
- A query about musici... 
- A templated query a... 
- A templated query a... 
- A templated query a... 
- Source verification 
- Sources from an ind... 
- Generic queries  

CLONE AS CUSTOM QUERY

A secret list of my favorite books

Finished in: 0 s Sources: 1 

 The result list is empty.

 EXPORT

127.0.0.1:5173/#/1050

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1050

Incognito

Miravi - a linked data viewer

Dashboard

Custom Query Editor

Example queries ^

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries ^

CLONE AS CUSTOM QUERY

EXPORT

A secret list of my favorite books

Finished in: 0 s Sources: 1 ⓘ

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/favourite-books	 Authentication required	⊖	?

🔍 The result list is empty.

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1050

Incognito

Miravi - a linked data viewer

Dashboard

Custom Query Editor

Example queries ^

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries ^

CLONE AS CUSTOM QUERY

EXPORT

A secret list of my favorite books

Finished in: 0 s Sources: 1 ⓘ

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/favourite-books	 Authentication required	?	?

The result list is empty.

This source requires authentication

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1050

Incognito

Miravi - a linked data viewer

Dashboard

Custom Query Editor

Example queries ▾

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries ▾

CLONE AS CUSTOM QUERY

EXPORT

A secret list of my favorite books

Finished in: 0 s Sources: 1 ⓘ

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/favourite-books	🔒	 Unauthorized	?

The result list is empty.

☰ Miravi - a linked data viewer



Profile

Dashboard

Custom Query Editor

Example queries ^

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries ▾

⚙ CLONE AS CUSTOM QUERY

A secret list of my favorite books

Finished in: 0 s Sources: 1 ⓘ

EXPORT

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/favourite-books	🔒	⊖	?

🔍 The result list is empty.

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1050

Incognito

Miravi - a linked data viewer

Dashboard

Custom Query Editor

Example queries ^

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries ▾

CLONE AS CUSTOM QUERY

Login

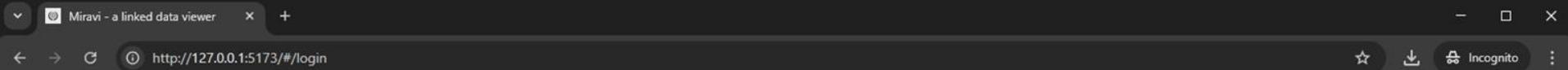
A secret list of my favorite books

Finished in: 0 s Sources: 1 ⓘ

EXPORT

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/favourite-books	🔒	⊖	?

🔍 The result list is empty.



http://localhost:8080

Login



Community Solid Server

Log in

Your account

Email

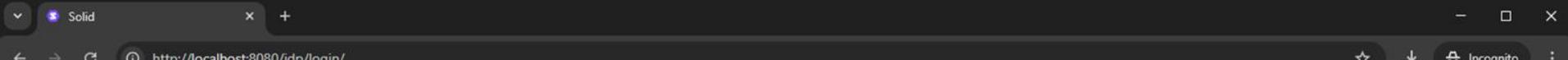
Password

Stay logged in

Log in

[Sign up](#) [Forgot password](#)

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Community Solid Server

Log in

Your account

Email

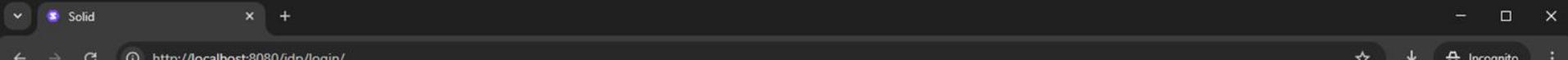
Password

Stay logged in

Log in

[Sign up](#) [Forgot password](#)

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Community Solid Server

Log in

Your account

Email

Password

Stay logged in

Login

[Sign up](#) [Forgot password](#)

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Community Solid Server

An application is requesting access

Your WebID is <http://localhost:8080/example/profile/card#me>

Do you trust this application to read and write data on your behalf?

Name: Miravi - a linked data viewer

ID: KP1sEsZtPaeokf8PYl4rd

Remember this client

Authorize

Cancel

[Use a different WebID](#)

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Miravi - a linked data viewer



Dashboard

Custom Query Editor

Example queries

Generic queries

Please log in as the appropriate actor and make your choice in the menu on the left.

Load/save your custom queries from/to a file in a pod. Saving destroys previous file contents.



From: http://localhost:8080/example/customQueries/myQueries.json



To: http://localhost:8080/example/customQueries/myQueries.json

Miravi - a linked data viewer

http://127.0.0.1:5173

Incognito

Miravi - a linked data viewer

Dashboard

Custom Query Editor

Example queries ^

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my f...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries ▾

Please log in as the appropriate actor and make your choice in the menu on the left.

Load/save your custom queries from/to a file in a pod. Saving destroys previous file contents.

LOAD ALL

From: http://localhost:8080/example/customQueries/myQueries.json

A secret list of my favorite books

Demonstrates a query whose source requires authentication.

http://localhost:8080/example/customQueries/myQueries.json

127.0.0.1:5173/#/1050

Miravi - a linked data viewer



- Dashboard
- Custom Query Editor
- Example queries 
- My idols
- Some images
- Is there an artist infl... 
- A graph of artists infl... 
- Average value 
- A secret list of my fa... 
- A public list of books... 
- A query about musici... 
- A templated query a... 
- A templated query a... 
- A templated query a... 
- Source verification 
- Sources from an ind... 
- Generic queries  

A secret list of my favorite books

Finished in: 0 s Sources: 1 

 EXPORT

authorName 	bookTitle 	list	Sources info	listTitle 
Elin Hilderbrand	The Five-Star Weekend	http://localhost:8080/example/favourite-books#favourite-books		Favourite books
Colleen Hoover	It Ends With Us	http://localhost:8080/example/favourite-books#favourite-books		Favourite books

Rows per page: 10  1-2 of 2

Miravi - a linked data viewer



- Dashboard
- Custom Query Editor
- Example queries 
- My idols
- Some images
- Is there an artist infl... 
- A graph of artists infl... 
- Average value 
- A secret list of my fa... 
- A public list of books... 
- A query about musici... 
- A templated query a... 
- A templated query a... 
- A templated query a... 
- Source verification 
- Sources from an ind... 
- Generic queries  

A secret list of my favorite books

Finished in: 0 s Sources: 1  EXPORT

Source	Authentication needed		Fetch status	Verified
authorName 	bookTitle 	list	listTitle 	
http://localhost:8080/example/favourite-books		 Authentication required	✓	
Elin Hilderbrand	The Five-Star Weekend	http://localhost:8080/example/favourite-books#favourite-books		Favourite books
Colleen Hoover	It Ends With Us	http://localhost:8080/example/favourite-books#favourite-books		Favourite books

Rows per page: 10  1-2 of 2

Miravi - a linked data viewer



- Dashboard
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- A secret list of my fa... 
- A public list of books... 
- A query about musici... 
- A templated query a... 
- A templated query a... 
- A templated query a... 
- Source verification
- Sources from an ind...
- Generic queries 

A secret list of my favorite books

Finished in: 0 s Sources: 1 

 EXPORT

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/favourite-books		 Fetch was successful	
authorName 	bookTitle 	list	listTitle 
Elin Hilderbrand	The Five-Star Weekend	http://localhost:8080/example/favourite-books#favourite-books	Favourite books
Colleen Hoover	It Ends With Us	http://localhost:8080/example/favourite-books#favourite-books	Favourite books

Rows per page: 10  1-2 of 2

Miravi - a linked data viewer



- Dashboard
- Custom Query Editor
- Example queries ^
- My idols
- Some images
- Is there an artist infl...
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- A secret list of my fa...
- A public list of books...
- A query about musici...
- A templated query a...
- A templated query a...
- A templated query a...
- Source verification
- Sources from an ind...
- Generic queries ^

A secret list of my favorite books

Finished in: 0 s Sources: 1 ⓘ

EXPORT

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/favourite-books	🔒	 Fetch was successful	?
authorName ↗	bookTitle ↗	list	listTitle ↗
Elin Hilderbrand	The Five-Star Weekend	http://localhost:8080/example/favourite-books#favourite-books	Favourite books
Colleen Hoover	It Ends With Us	http://localhost:8080/example/favourite-books#favourite-books	Favourite books

Rows per page: 10 ▾ 1-2 of 2

The logged in user has access rights
to the source

Miravi - a linked data viewer

http://localhost:5173/#/1050

Incognito

Miravi - a linked data viewer

Dashboard

Custom Query Editor

Example queries ^

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query ...

A templated query a...

Source verification

Sources from an ind...

Generic queries ^

CLONE AS CUSTOM QUERY

EXPORT

A secret list of my favorite books

Finished in: 0 s Sources: 1 ⓘ

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/favourite-books	🔒	✓	?
authorName ↗	bookTitle ↗	list	listTitle ↗
Elin Hilderbrand	The Five-Star Weekend	http://localhost:8080/example/favourite-books#favourite-books	Favourite books
Colleen Hoover	It Ends With Us	http://localhost:8080/example/favourite-books#favourite-books	Favourite books

Rows per page: 10 ▾ 1-2 of 2

A templated query about musicians (indirect variables)

Demonstrates the usage of templated queries, here with indirectly loaded variable values.

localhost:5173/#/1090

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1090

Incognito

?

Dashboard

Custom Query Editor

Example queries

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries

genre *

QUERY

127.0.0.1:5173/#/1090

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1090

Incognito

Dashboard

Custom Query Editor

Example queries ^

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries ▾

genre *

"Baroque"

"Classical"

"Romantic"

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1090

Incognito

Dashboard

Custom Query Editor

Example queries

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries

genre*
"Classical"

QUERY

The screenshot shows a web-based linked data viewer named Miravi. The interface has a blue header bar with the title 'Miravi - a linked data viewer' and a URL 'http://127.0.0.1:5173/#/1090'. On the right side of the header are icons for help, download, and incognito mode. Below the header is a navigation sidebar on the left containing links like 'Dashboard', 'Custom Query Editor', and 'Example queries'. Under 'Example queries', there is a list of various queries with icons. A specific query entry for 'genre' with the value '"Classical"' is highlighted with a yellow circle around its input field. A blue button labeled 'QUERY' with a checkmark icon is positioned below the input field. The main content area is currently empty.

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1090?genre="Classical"

CHANGE VARIABLES

CLONE AS CUSTOM QUERY

A templated query about musicians (indirect variables)

genre: "Classical"

Finished in: 0 s Sources: 1 ⓘ

EXPORT

name ↗	sameAs ↗
Ludwig van Beethoven	https://en.wikipedia.org/wiki/Ludwig_van_Beethoven
Wolfgang Amadeus Mozart	https://en.wikipedia.org/wiki/Wolfgang_Amadeus_Mozart

Rows per page: 10 ▾ 1-2 of 2

Sources from an index file

Query components (including details about materials) with the sources obtained from index files.

Dashboard

Custom Query Editor

Example queries

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an in...

Generic queries

127.0.0.1:5173/#/1120

CONFIGURATION

```
"queries": [ (...),  
  {"id": "1080",  
   (...),  
   "queryLocation": "musicians.rq",  
   "variables": {  
     "genre": [  
       "\\"Romantic\\\"",  
       "\\"Baroque\\\"",  
       "\\"Classical\\\""  
     ] } }, (...) ]
```

config snippet

Query template option 1:
list of values

musicians.rq

```
PREFIX schema: <http://schema.org/>  
  
SELECT ?name ?sameAs_url WHERE {  
  ?list schema:name ?listTitle;  
        schema:name ?name;  
        schema:genre $genre;  
        schema:sameAs ?sameAs_url;  
}
```

Ludwig van Beethoven

https://en.wikipedia.org/wiki/Ludwig_van_Beethoven

Wolfgang Amadeus Mozart

en.wikipedia.org/wiki/Wolfgang_Amadeus_Mozart

Rows per page: 10 ▾ 1-2 of 2

CONFIGURATION

```
"queries": [ (...),  
  {"id": "1090",  
   (...),  
   "queryLocation": "musicians.rq",  
   "indirectVariables": {  
     "queryLocations": [  
       "variableQueries/musicians_genre_variable.rq"  
     ]  
   }  
 }, (...)]
```

config snippet

Query template option 2:
indirect variables (scalable)

musicians.rq

```
PREFIX schema: <http://schema.org/>  
  
SELECT ?name ?sameAs_url WHERE {  
  ?list schema:name ?listTitle;  
        schema:name ?name;  
        schema:genre $genre;  
        schema:sameAs ?sameAs_url;  
}
```

musicians_genre_variable.rq

```
PREFIX schema: <http://schema.org/>  
  
SELECT DISTINCT ?genre  
WHERE {  
  ?list schema:genre ?genre  
}  
ORDER BY ?genre
```

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1090?genre="Classical"

CHANGE VARIABLES

CLONE AS CUSTOM QUERY

A templated query about musicians (indirect variables)

genre: "Classical"

Finished in: 0 s Sources: 1 ⓘ

EXPORT

name ↗	sameAs ↗
Ludwig van Beethoven	https://en.wikipedia.org/wiki/Ludwig_van_Beethoven
Wolfgang Amadeus Mozart	https://en.wikipedia.org/wiki/Wolfgang_Amadeus_Mozart

Rows per page: 10 ▾ 1-2 of 2

Sources from an index file

Query components (including details about materials) with the sources obtained from index files.

Dashboard

Custom Query Editor

Example queries

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an in...

Generic queries

127.0.0.1:5173/#/1120

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1120

Incognito

Miravi - a linked data viewer

Dashboard

Custom Query Editor

Example queries ▾

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries ▾

CLONE AS CUSTOM QUERY

Sources from an index file

Finished in: 0 s Sources: 4

EXPORT

component	componentName	material	Sources info	materialName	percentage
https://www.example.com/data/component-c01	Component 1	https://www.example.com/data/material-m01	Sources info	Material 1	60
https://www.example.com/data/component-c01	Component 1	https://www.example.com/data/material-m02	Sources info	Material 2	30
https://www.example.com/data/component-c01	Component 1	https://www.example.com/data/material-m03	Sources info	Material 3	10
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m04	Sources info	Material 4	40
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m08	Sources info	Material 8	5
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m09	Sources info	Material 9	3
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m07	Sources info	Material 7	7
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m05	Sources info	Material 5	20
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m06	Sources info	Material 6	25
https://www.example.com/data/component-c03	Component 3	https://www.example.com/data/material-m10	Sources info	Material 10	85

Rows per page: 10 ▾ 1-10 of 11 < 1 2 >

127.0.0.1:5173/#/1120

Miravi - a linked data viewer

http://localhost:5173/#/1120

Incognito

Miravi - a linked data viewer

http://localhost:8080/example/profile/card#me

Dashboard

Custom Query Editor

Example queries ^

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries ^

CLONE AS CUSTOM QUERY

Sources from an index file

Finished in: 0 s Sources: 4 ⓘ

EXPORT

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/index-example-texon-only	🔒	✓	?
http://localhost:8080/example/boms	🔒	✓	?
http://localhost:8080/example/components	🔒	✓	?
http://localhost:8080/example/materials	🔒	✓	?

component	componentName ↗	material ↗	materialName ↗	percentage ↗
https://www.example.com/data/component-c01	Component 1	https://www.example.com/data/material-m01	Material 1	60
https://www.example.com/data/component-c01	Component 1	https://www.example.com/data/material-m02	Material 2	30
https://www.example.com/data/component-c01	Component 1	https://www.example.com/data/material-m03	Material 3	10
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m04	Material 4	40
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m08	Material 8	5
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m09	Material 9	3
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m07	Material 7	7
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m05	Material 5	20
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m06	Material 6	25
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m10	Material 10	95

CONFIGURATION

Miravi - a linked data viewer

http://localhost:8080/example/profile/card#me

CLONE AS CUSTOM QUERY

```
"queries": [ (...),  
{(...),  
"comunicaContext": {  
"sources": [  
"http://localhost:8080/example/components",  
"http://localhost:8080/example/boms",  
"http://localhost:8080/example/materials"  
],  
"lenient": true  
}  
}, (...)]
```

config snippet

Federated query option 1:
list of sources

	https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m08	Material 8	5
Source verification	https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m09	Material 9	3
Sources from an ind...	https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m07	Material 7	7
Generic queries	https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m05	Material 5	20
	https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m06	Material 6	25
	https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m10	Material 10	25



CONFIGURATION

```
queries": [ (...),  
{(...),  
"sourcesIndex": {  
    "url": "http://localhost:8080/example/index-example-texon-only-lt",  
    "queryLocation": "/sourceQueries/index_example_common_lt.rq"  
}}, (...)]
```

config snippet

Federated query option 2: sources index
= link traversal starting from a source index (scalable)

Σ Average value

http://localhost:8080/example/components

?

http://localhost:8080/example/index-example-texon-only-lt

```
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .  
<#index-example> rdfs:seeAlso  
  <http://localhost:8080/example/boms>,  
  <http://localhost:8080/example/components>,  
  <http://localhost:8080/example/materials>
```

Generic queries

https://www.example.com/data/component-c02

Component 2

https://www.example.com/data/material-m06

Material 6

25

https://www.example.com/data/component-c03

Component 3

https://www.example.com/data/material-m10

Material 10

25

index_example_common_lt.rq

```
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>  
  
SELECT DISTINCT ?source WHERE {  
  ?s rdfs:seeAlso ?source.  
}
```

Miravi - a linked data viewer

http://localhost:5173/#/1120

Incognito

Miravi - a linked data viewer

Dashboard

Custom Query Editor

Example queries

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries

CLONE AS CUSTOM QUERY

Sources from an index file

Finished in: 0 s Sources: 4

EXPORT

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/index-example-texon-only	🔒	✓	?
http://localhost:8080/example/boms	🔒	✓	?
http://localhost:8080/example/components	🔒	✓	?
http://localhost:8080/example/materials	🔒	✓	?

component	componentName	material	materialName	percentage
https://www.example.com/data/component-c01	Component 1	https://www.example.com/data/material-m01	Material 1	60
https://www.example.com/data/component-c01	Component 1	https://www.example.com/data/material-m02	Material 2	30
https://www.example.com/data/component-c01	Component 1	https://www.example.com/data/material-m03	Material 3	10
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m04	Material 4	40
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m08	Material 8	5
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m09	Material 9	3
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m07	Material 7	7
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m05	Material 5	20
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m06	Material 6	25
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m10	Material 10	95

Miravi - a linked data viewer

http://localhost:5173/#/1120

Incognito

Miravi - a linked data viewer

Sources from an index file

EXPORT

Finished in: 0 s Sources: 4 ⓘ

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/index-example-texon-only	🔒	✓	?
http://localhost:8080/example/boms	🔒	✓	?
http://localhost:8080/example/components	🔒	✓	?
http://localhost:8080/example/materials	🔒	✓	?

component	componentName ↗	material ↗	materialName ↗	percentage ↗
https://www.example.com/data/component-c01	Component 1	https://www.example.com/data/material-m01	Material 1	60
https://www.example.com/data/component-c01	Component 1	https://www.example.com/data/material-m02	Material 2	30
https://www.example.com/data/component-c01	Component 1	https://www.example.com/data/material-m03	Material 3	10
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m04	Material 4	40
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m08	Material 8	5
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m09	Material 9	3
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m07	Material 7	7
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m05	Material 5	20
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m06	Material 6	25
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m10	Material 10	95

Exporting query results

Dashboard

Custom Query Editor

Example queries ^

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries ^

Save As

This PC > Downloads >

Organize New folder

Quick access

- OneDrive - Personal
 - Apps
 - Bijlagen
 - Bureaublad
 - Desktop
 - Documenten
 - Favorieten
 - Scans
- This PC
 - 3D Objects
 - Desktop
 - Documents
 - Downloads
 - Music
 - Pictures
 - Videos
 - Windows (C:)
- Network

Name

Date modified

Type

Size

Last week (4)

Earlier this month (1)

Last month (9)

Earlier this year (46)

A long time ago (5)

File name: 1120.csv

Save as type: Microsoft Excel Comma Separated Values File (*.csv)

Save Cancel

CLONE AS CUSTOM QUERY

EXPORT

status Verified

allName percentage

allName	percentage
I 1	60
I 2	30
I 3	10
I 4	40
I 8	5
I 9	3

Sources from an ind... https://www.example.com/data/component-c02 Component 2 https://www.example.com/data/material-m07 Material 7

Generic queries https://www.example.com/data/component-c02 Component 2 https://www.example.com/data/material-m05 Material 5

https://www.example.com/data/component-c02 Component 2 https://www.example.com/data/material-m06 Material 6

https://www.example.com/data/component-c02 Component 2 https://www.example.com/data/material-m10 Material 10

Miravi - a linked data viewer

http://localhost:5173/#/1120

Incognito

Miravi - a linked data viewer

Anyone using this device can see downloaded files

1120.csv
3.8 KB · None

SOURCES

Sources from an index file

Finished in: 0 s Sources: 4 ⓘ

EXPORT

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/index-example-texon-only	🔒	✓	?
http://localhost:8080/example/boms	🔒	✓	?
http://localhost:8080/example/components	🔒	✓	?
http://localhost:8080/example/materials	🔒	✓	?

component	componentName ↗	material ↗	materialName ↗	percentage ↗
https://www.example.com/data/component-c01	Component 1	https://www.example.com/data/material-m01	Material 1	60
https://www.example.com/data/component-c01	Component 1	https://www.example.com/data/material-m02	Material 2	30
https://www.example.com/data/component-c01	Component 1	https://www.example.com/data/material-m03	Material 3	10
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m04	Material 4	40
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m08	Material 8	5
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m09	Material 9	3
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m07	Material 7	7
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m05	Material 5	20
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m06	Material 6	25
https://www.example.com/data/component-c02	Component 2	https://www.example.com/data/material-m10	Material 10	95

Miravi - a linked data viewer

http://localhost:5173/#/1120

Incognito

Miravi - a linked data viewer

Dashboard

Custom Query Editor

Example

My idols

Some images

Is there a

A graph o

Average v

A secret li

A public li

A query a

A template

A template

A template

Source ve

Sources f

Generic queries

CLONE AS CUSTOM QUERY

EXPORT

AutoSave Off

Search

Comments Share

File Home Insert Page Layout Formulas Data Review View Automate Developer Help Acrobat

Paste Clipboard Font Alignment Number Styles

Cells Editing Sensitivity Add-ins Analyze Data Create a PDF

A1 component.termType

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
1	component	component	component	component	component	component	material	percentage	percentage	percentage							
2	NamedNc https://www Literal	Component 1	NamedNc http://www	NamedNc https://www Literal	Material 1	NamedNc http://www Literal	60	N									
3	NamedNc https://www Literal	Component 1	NamedNc http://www	NamedNc https://www Literal	Material 2	NamedNc http://www Literal	30	N									
4	NamedNc https://www Literal	Component 1	NamedNc http://www	NamedNc https://www Literal	Material 3	NamedNc http://www Literal	10	N									
5	NamedNc https://www Literal	Component 2	NamedNc http://www	NamedNc https://www Literal	Material 4	NamedNc http://www Literal	40	N									
6	NamedNc https://www Literal	Component 2	NamedNc http://www	NamedNc https://www Literal	Material 8	NamedNc http://www Literal	5	N									
7	NamedNc https://www Literal	Component 2	NamedNc http://www	NamedNc https://www Literal	Material 9	NamedNc http://www Literal	3	N									
8	NamedNc https://www Literal	Component 2	NamedNc http://www	NamedNc https://www Literal	Material 7	NamedNc http://www Literal	7	N									
9	NamedNc https://www Literal	Component 2	NamedNc http://www	NamedNc https://www Literal	Material 5	NamedNc http://www Literal	20	N									
10	NamedNc https://www Literal	Component 2	NamedNc http://www	NamedNc https://www Literal	Material 6	NamedNc http://www Literal	25	N									
11	NamedNc https://www Literal	Component 3	NamedNc http://www	NamedNc https://www Literal	Material 10	NamedNc http://www Literal	85	N									
12	NamedNc https://www Literal	Component 3	NamedNc http://www	NamedNc https://www Literal	Material 11	NamedNc http://www Literal	15	N									
13																	
14																	

1120

Display Settings

Accessibility: Unavailable

https://www.example.com/data/component-c02 Component 2 https://www.example.com/data/material-m05 Material 5

https://www.example.com/data/component-c02 Component 2 https://www.example.com/data/material-m06 Material 6

https://www.example.com/data/component-c02 Component 2 https://www.example.com/data/material-m10 Material 10

status Verified ? ? ? ?

InName percentage

InName	percentage
1	60
2	30
3	10
4	40
8	5
9	3
7	7

Content

High level description

Setup

Basic use demo (explaining also the configuration)

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Miravi - a linked data viewer

http://127.0.0.1:5173/#/customQuery

Incognito

Creating a new custom query

Custom Query Editor

Basic Information

Query name *

Give this custom query a name.

Description *

Give a description for the query.

SPARQL query *

```
1 SELECT ?s ?p ?o
2 WHERE {
3   ?s ?p ?o
4 }
```

Enter your SPARQL query here.

- Dashboard
- Custom Query Editor
- Example queries ^
- My idols
- Some images
- Is there an artist infl...
- A graph of artists infl...
- Average value
- A secret list of my fa...
- A public list of books...
- A query about musici...
- A templated query a...
- A templated query a...
- A templated query a...
- Source verification
- Sources from an ind...
- Generic queries ^

Miravi - a linked data viewer

http://127.0.0.1:5173/#/customQuery

Incognito

Custom Query Editor

Basic Information

Query name *

Give this custom query a name.

Description *

A secret list of my favorite books

Demonstrates a query whose source requires authentication.

```
2 WHERE {  
3   ?s ?p ?o  
4 }
```

Enter your SPARQL query here.

- Dashboard
- Custom Query Editor
- Example queries ^
- My idols
- Some images
- Is there an artist infl...
- A graph of artists infl...
- Average value
- A secret list of my f... Mouse cursor is here
- A public list of books...
- A query about musici...
- A templated query a...
- A templated query a...
- A templated query a...
- Source verification
- Sources from an ind...
- Generic queries ^

127.0.0.1:5173/#/1050

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1050

Incognito

Miravi - a linked data viewer

Dashboard

Custom Query Editor

Example queries ▾

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries ▾

A secret list of my favorite books

Finished in: 0 s Sources: 1 ⓘ

CLONE AS CUSTOM QUERY

Adapting an existing query

authorName ↗	bookTitle ↗	list	EXPORT
Elin Hilderbrand	The Five-Star Weekend	http://localhost:8080/example/favourite-books#favourite-books	Favourite books
Colleen Hoover	It Ends With Us	http://localhost:8080/example/favourite-books#favourite-books	Favourite books

Rows per page: 10 ▾ 1-2 of 2

127.0.0.1:5173/#/1050

Miravi - a linked data viewer

http://127.0.0.1:5173/#/customQuery?name=%28Cloned+from%29+A+secret+list+of+my+favorite+books&description=Demonstrates+a+query+whose+source+requires+authentication.&icon...

Incognito

Dashboard

Custom Query Editor

Example queries ^

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries ^

Custom Query Editor

Basic Information

Query name *

(Cloned from) A secret list of my favorite books

Give this custom query a name.

Description *

Demonstrates a query whose source requires authentication.

Give a description for the query.

SPARQL query *

```
1 PREFIX schema: <http://schema.org/>
2
3 SELECT * WHERE {
4   ?list schema:name ?listTitle;
5   ?list schema:itemListElement [
6     schema:name ?bookTitle;
7     schema:creator [
8       schema:name ?authorName
9     ]
10   ].
11 }
```

Enter your SPARQL query here.

Miravi - a linked data viewer

http://127.0.0.1:5173/#/customQuery?name=%28Cloned+from%29+A+secret+list+of+my+favorite+books&description=Demonstrates+a+query+whose+source+requires+authentication.&icon...

Incognito

Dashboard

Custom Query Editor

Example queries

My idols

Some images

Is there an artist infl...

A graph of artists infl...

Average value

A secret list of my fa...

A public list of books...

A query about musici...

A templated query a...

A templated query a...

A templated query a...

Source verification

Sources from an ind...

Generic queries

Custom Query Editor

Basic Information

Query name *

A list of my favorite books

Give this custom query a name.

Description *

Demonstrates a query over sources with and without authentication.

Give a description for the query.

SPARQL query *

```
1 PREFIX schema: <http://schema.org/>
2
3 SELECT * WHERE {
4   ?list schema:name ?listTitle;
5   ?list schema:itemListElement [
6     schema:name ?bookTitle;
7     schema:creator [
8       schema:name ?authorName
9     ]
10   ].
11 }
```

Enter your SPARQL query here.

Miravi - a linked data viewer

Give a description for the query.

SPARQL query *

```
1 PREFIX schema: <http://schema.org/>
2
3 SELECT * WHERE {
4   ?list schema:name ?listTitle;
5   schema:itemListElement [
6     schema:name ?bookTitle;
7     schema:creator [
8       schema:name ?authorName
9     ]
10   ].
11 }
```

Enter your SPARQL query here.

Comunica Context & Sources

Fixed data source(s) *

Give the source URL(s) for the query. Separate URLs with ';'. (These are the Comunica context sources)

Advanced Comunica Context Settings

Comunica context configuration *

```
1 {"lenient":true}
```

Miravi - a linked data viewer

Give a description for the query.

SPARQL query *

```
1 PREFIX schema: <http://schema.org/>
2
3 SELECT * WHERE {
4   ?list schema:name ?listTitle;
5   schema:itemListElement [
6     schema:name ?bookTitle;
7     schema:creator [
8       schema:name ?authorName
9     ]
10   ].
11 }
```

Enter your SPARQL query here.

Comunica Context & Sources

Fixed data source(s) *

http://localhost:8080/example/favourite-books; http://localhost:8080/example/wish-list

Give the source URL(s) for the query. Separate URLs with ';'. (These are the Comunica context sources)

Advanced Comunica Context Settings

Comunica context configuration *

```
1 {"lenient":true}
```

Miravi - a linked data viewer

http://127.0.0.1:5173/#/customQuery?name=%28Cloned+from%29+A+secret+list+of+my+favorite+books&description=Demonstrates+a+query+whose+source+requires+authentication.&icon...

Incognito

- Dashboard
- Custom Query Editor
- Example queries ^
 - My idols
 - Some images
 - Is there an artist infl...
 - A graph of artists infl...
 - Average value
 - A secret list of my fa...
 - A public list of books...
 - A query about musici...
 - A templated query a...
 - A templated query a...
 - A templated query a...
 - Source verification
 - Sources from an ind...
- Generic queries ^
 - + CREATE QUERY

Enter your extra Comunica context in JSON-format.

Indirect sources

Templated Query

Fixed Variables

Indirect Variables

Extra Options

ASK query

Http proxies

[GO BACK](#)

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1756292244080

Incognito

Miravi - a linked data viewer

Example queries ▾

- My idols
- Some images
- Is there an artist infl...
- A graph of artists infl...
- Average value
- A secret list of my fa...
- A public list of books...
- A query about musici...
- A templated query a...
- A templated query a...
- A templated query a...
- Source verification
- Sources from an ind...
- Generic queries ▾
- Custom queries ▾
- A list of my favorite...

EDIT QUERY SHARE QUERY CLONE DELETE QUERY

A list of my favorite books

Finished in: 0 s Sources: 2 ⓘ EXPORT

authorName ↗	bookTitle ↗	list	listTitle ↗
Elin Hilderbrand	The Five-Star Weekend	http://localhost:8080/example/favourite-books#favourite-books	Favourite books
Colleen Hoover	Too Late	http://localhost:8080/example/wish-list#wish-list	Wish list of books
Colleen Hoover	It Ends With Us	http://localhost:8080/example/favourite-books#favourite-books	Favourite books
Rebecca Yarros	Fourth Wing	http://localhost:8080/example/wish-list#wish-list	Wish list of books

Rows per page: 10 ▾ 1-4 of 4

The new custom query appears under the group *Custom queries*.

A list of my favorite books
Demonstrates a query over sources with and without authentication.

127.0.0.1:5173/#/1756292244080

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1756292244080

Incognito

Miravi - a linked data viewer

Example queries ^

- My idols
- Some images
- Is there an artist infl...
- A graph of artists infl...
- Average value
- A secret list of my fa...
- A public list of books...
- A query about musici...
- A templated query a...
- A templated query a...
- A templated query a...
- Source verification
- Sources from an ind...
- Generic queries ^
- Custom queries ^
- A list of my favorite b...

EDIT QUERY SHARE QUERY CLONE DELETE QUERY

A list of my favorite books

Finished in: 0 s Sources: 2

EXPORT

authorName ↗	bookTitle ↗	list	Sources info	listTitle ↗
Elin Hilderbrand	The Five-Star Weekend	http://localhost:8080/example/favourite-books#favourite-books		Favourite books
Colleen Hoover	Too Late	http://localhost:8080/example/wish-list#wish-list		Wish list of books
Colleen Hoover	It Ends With Us	http://localhost:8080/example/favourite-books#favourite-books		Favourite books
Rebecca Yarros	Fourth Wing	http://localhost:8080/example/wish-list#wish-list		Wish list of books

Rows per page: 10 ▾ 1-4 of 4

Miravi - a linked data viewer

http://127.0.0.1:5173/#/1756292244080

Incognito

Miravi - a linked data viewer

Example queries ^

- My idols
- Some images
- Is there an artist infl...
- A graph of artists infl...
- Average value
- A secret list of my fa...
- A public list of books...
- A query about musici...
- A templated query a...
- A templated query a...
- A templated query a...
- Source verification
- Sources from an ind...
- Generic queries ^
- Custom queries ^
- A list of my favorite b...

EDIT QUERY SHARE QUERY CLONE DELETE QUERY

A list of my favorite books

Finished in: 0 s Sources: 2 ⓘ

EXPORT

Source	Authentication needed	Fetch status	Verified
http://localhost:8080/example/favourite-books	🔒	✓	?
http://localhost:8080/example/wish-list	🔒	✓	?

authorName ↗	bookTitle ↗	list	listTitle ↗
Elin Hilderbrand	The Five-Star Weekend	http://localhost:8080/example/favourite-books#favourite-books	Favourite books
Colleen Hoover	Too Late	http://localhost:8080/example/wish-list#wish-list	Wish list of books
Colleen Hoover	It Ends With Us	http://localhost:8080/example/favourite-books#favourite-books	Favourite books
Rebecca Yarros	Fourth Wing	http://localhost:8080/example/wish-list#wish-list	Wish list of books

Rows per page: 10 ▾ 1-4 of 4

Miravi - a linked data viewer



http://localhost:8080/example/profile/card#me

-  Dashboard Edit
-  Custom Query Editor
-  Example queries Edit
-  My idols
-  Some images
-  Is there an artist infl...
-  A graph of artists infl...
-  Average value
-  A secret list of my fa...
-  A public list of books...
-  A query about musici...
-  A templated query a...
-  A templated query a...
-  Source verification
-  Sources from an ind...
-  Generic queries Edit

A list of my favorite books

Finished in: 0 s Sources: 2 i EXPORT

Source	Authentication needed		Fetch status	Verified
authorName	bookTitle	list	listTitle	
http://localhost:8080/example/favourite-books			✓	?
http://localhost:8080/example/wish-list			✓	?
Elin Hilderbrand	The Five-Star Weekend	http://localhost:8080/example/favourite-books#favourite-books	Favourite books	
Colleen Hoover	Too Late	http://localhost:8080/example/wish-list#wish-list	Wish list of books	
Colleen Hoover	It Ends With Us	http://localhost:8080/example/favourite-books#favourite-books	Favourite books	
Rebecca Yarros	Fourth Wing	http://localhost:8080/example/wish-list#wish-list	Wish list of books	

Rows per page: 10 1-4 of 4



Miravi - a linked data viewer

- Dashboard
- Custom Query Editor
- Example queries ^
- My idols
- Some images
- Is there an artist infl...
- A graph of artists infl...
- Average value
- A secret list of my fa...
- A public list of books...
- A query about musici...
- A templated query a...
- A templated query a...
- A templated query a...
- Source verification
- Sources from an ind...
- Generic queries ^

Please log in as the appropriate actor and make your choice in the menu on the left.

Load/save your custom queries from/to a file in a pod. Saving destroys previous file contents.



From: http://localhost:8080/example/customQueries/myQueries.json



To: http://localhost:8080/example/customQueries/myQueries.json

The logged in user can save the created custom queries on his Solid pod, or load queries from his Solid pod to the Miravi dashboard .

Miravi - a linked data viewer

http://127.0.0.1:5173/#/

Incognito

Miravi - a linked data viewer

Please log in as the appropriate actor and make your choice in the menu on the left.

Load/save your custom queries from/to a file in a pod. Saving destroys previous file contents.

 **LOAD ALL** From:

 **SAVE ALL** To:

Successfully saved your queries on the pod!

Generic queries ▾

Custom queries ▾

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High level description

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Basic use demo (explaining also the configuration)

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Ontology-based Decentralized Sharing of Industry Data in the European Circular Economy (Onto-DESIDE)

A Horizon Europe Project with **access control** as requirement for data sharing. The **development of Miravi** was part of this project.

With Miravi we demonstrate the **benefits** of the data integration in the backend to the **non-technical end user**.

The screenshot shows a web-based interface for querying an ontology. The URL is https://onto-deside.ilabt.imec.be/viewer/#/421?ProductLabel="Speaker". The interface has a sidebar with various navigation links such as Dashboard, Custom Query Editor, Generic query examples, Construction use case, Textile use case, Extended textile use case, Evaluation June 2024 - Construction, Evaluation June 2024 - Electronics, Overview, Resilience of the sup..., REACH compliance ..., Rare Earth content ..., Recycled content of ..., All accessible data, Sources in electronic..., Evaluation June 2024 - Textile, and Cross-domain. The main area displays a query titled "Resilience of the supply chain of a product ProductLabel: "Speaker"". Below the title, it says "Finished in: 0 s Sources: 12". The results table has columns for Source, Authentication needed, Fetch status, and Verified. The table lists four sources, all of which require authentication and have fetch status checked, with verified status also checked. The table also includes columns for ComponentLabel and siteCountry, showing details for Electrical structure (Austria), Magnet (China), Aluminum basket (China), Coil (China), and Cone (Spain). At the bottom right, there are buttons for EXPORT, ROWS PER PAGE (set to 10), and PAGES (set to 1-5 of 5).

<https://onto-deside.ilabt.imec.be/viewer/>

Open Standards for Linked Organizations (OSLO)

A project of **Digital Flanders**, that has published more than 250 **vocabularies** and **application profiles**.

With Miravi we created a **dedicated search interface** as an aid for **developers** of **future OSLO standards** and **users** of **existing OSLO standards**.

The screenshot shows a web-based search interface titled "IDLab Search the OSLO vocabularies and application profiles". The URL in the address bar is <https://oslo-kg-viewer.knows.idlab.ugent.be/#/102?class=<http%3A%2F%2Fdata.vlaanderen.be%2Fns%2Fbesluit#Artikel>>. On the left, there is a sidebar with various navigation options: Dashboard, Custom Query Editor, All used classes, All used properties, Outgoing triples per ..., Outgoing triples per ..., All application profile..., All properties used b..., All application profile..., and All classes used by In the center, there is a search bar with the placeholder "Outgoing triples per (super)class" and a dropdown menu showing "class: <http://data.vlaanderen.be/ns/besluit#Artikel>". Below the search bar, there is a button labeled "CHANGE VARIABLES". To the right, the results are displayed in a table format. The table has two columns: "pto" and "oto". The "pto" column lists various RDF predicates, and the "oto" column lists their corresponding objects. The table includes rows for w3.org predicates like rdf:type, rdf-schema:comment, rdf-schema:isDefinedBy, rdf-schema:label, rdf-schema:subClassOf, and w3.org/ns/adms:status, along with other specific OSLO classes like Class, LegalExpression, and FormalFramework. At the bottom of the table, there are links for "EXPORT" and "FINISHED IN: 0 s SOURCES: 1". The footer of the page shows "Rows per page: 10" and "1-7 of 7".

<https://oslo-kg-viewer.knows.idlab.ugent.be/>

SecuWeb

An **Interreg Europe project**, aiming to strengthen **data security** in companies and organizations in Flanders, Wallonia, and France.

With Miravi, we integrate decentralized Linked Data from the Food Supply Chain domain, with access control

IDLab Query the Open Circularity Platform

Transport information: tomatoPack01

Finished in: 0s Sources: 6

productTransported	transportCompany	quantity	transportLoad	trip	vehicleType	from	to	fromEntity	toEntity	dDeparture	dArrival
http://example.com/tomatoC001-tomatoPack01	http://example.com/AgroTransCo	1500	http://example.com/trip-trip001-product-tomatoC001-tomatoPack01	http://example.com/trip-trip001	Truck	Murcia, Spain	Berlin, Germany	NatureHarvest	freshMarket01_Berlin	2024-10-01	2024-10-03
http://example.com/tomatoC001-tomatoPack01	http://example.com/AgroTransCo	1200	http://example.com/trip-trip002-product-tomatoC001-tomatoPack01	http://example.com/trip-trip002	Van	Murcia, Spain	Paris, France	NatureHarvest	freshMarket01_Paris	2024-10-05	2024-10-07
http://example.com/tomatoC001-tomatoPack01	http://example.com/FreshMove	400	http://example.com/trip-trip101-product-tomatoC001-tomatoPack01	http://example.com/trip-trip101	Small Truck	Berlin, Germany	local store	freshMarket01_Berlin	local_store_berlin	2024-10-09	2024-10-10
http://example.com/tomatoC001-tomatoPack01	http://example.com/FreshMove	600	http://example.com/trip-trip102-product-tomatoC001-tomatoPack01	http://example.com/trip-trip102	Small Truck	Paris, France	local store	freshMarket01_Paris	local_store_paris	2024-10-09	2024-10-10

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High level description

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Conclusion

Mirava is a **Linked Data viewer** with **client-side** processing of **SPARQL queries** over decentralized heterogeneous Linked Data sources, supporting user **authentication** for permissioned (Solid) data sources, **data source** and variable **discovery**, inspection of **data source status**, **export** of query results, and **custom queries**, reusing the following open-source components: **Comunica**, **Solid Client Authentication library**, and **React-Admin**.

Miravi - a Linked Data Viewer

Els de Vleeschauwer, Martin Vanbrabant,
Ben De Meester, and Pieter Colpaert

<https://github.com/SolidLabResearch/miravi-a-linked-data-viewer>

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