Share VDE Virtual Discovery Environment

The challenge of interoperability between entity models

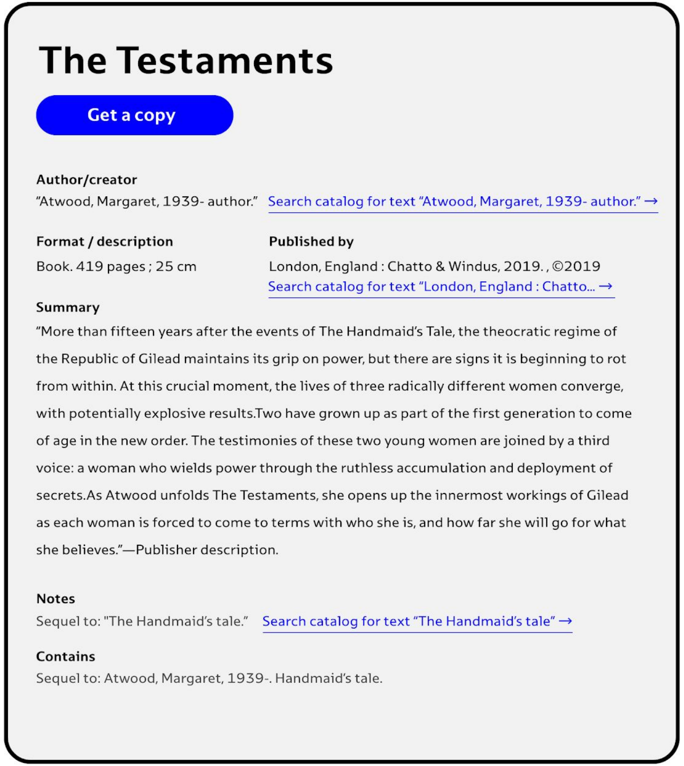
Share-VDE experience

LIBER conference 2020, Linked Open Data workshop, 23rd June 2020

LIBER 2020 ONLINE

Data publication: SVDE discovery platform

Linked data experience



The Testaments

Get a copy

Author/creator

"Atwood, Margaret, 1939- author." Search catalog for text "Atwood, Margaret, 1939- author." →

Format / description

Book. 419 pages ; 25 cm

Published by

London, England : Chatto & Windus, 2019. , ©2019

Search catalog for text "London, England : Chatto... →

Summary

"More than fifteen years after the events of The Handmaid's Tale, the theocratic regime of the Republic of Gilead maintains its grip on power, but there are signs it is beginning to rot from within. At this crucial moment, the lives of three radically different women converge, with potentially explosive results.Two have grown up as part of the first generation to come of age in the new order. The testimonies of these two young women are joined by a third voice: a woman who wields power through the ruthless accumulation and deployment of secrets.As Atwood unfolds The Testaments, she opens up the innermost workings of Gilead as each woman is forced to come to terms with who she is, and how far she will go for what she believes."—Publisher description.

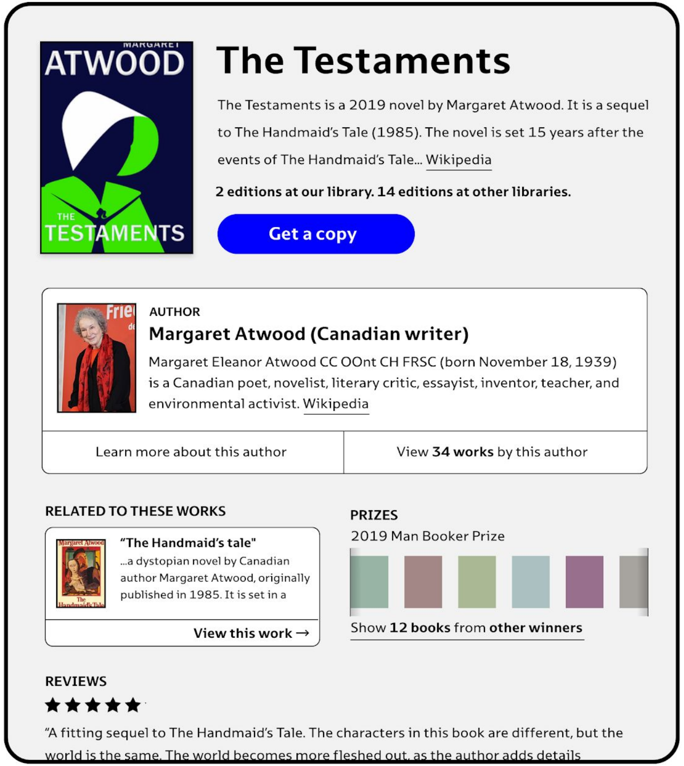
Notes

Sequel to: "The Handmaid's tale." Search catalog for text "The Handmaid's tale" →

Contains

Sequel to: Atwood, Margaret, 1939-. Handmaid's tale.

Experience without linked data.
Search for text string → View a record → Search for text string → View...



The Testaments

The Testaments is a 2019 novel by Margaret Atwood. It is a sequel to The Handmaid's Tale (1985). The novel is set 15 years after the events of The Handmaid's Tale... Wikipedia

2 editions at our library. 14 editions at other libraries.

Get a copy

AUTHOR

Margaret Atwood (Canadian writer)

Margaret Eleanor Atwood CC OOnt CH FRSC (born November 18, 1939) is a Canadian poet, novelist, literary critic, essayist, inventor, teacher, and environmental activist. Wikipedia

Learn more about this author | View **34 works** by this author

RELATED TO THESE WORKS

"The Handmaid's tale"
...a dystopian novel by Canadian author Margaret Atwood, originally published in 1985. It is set in a

View this work →

PRIZES

2019 Man Booker Prize

Show **12 books** from **other winners**

REVIEWS

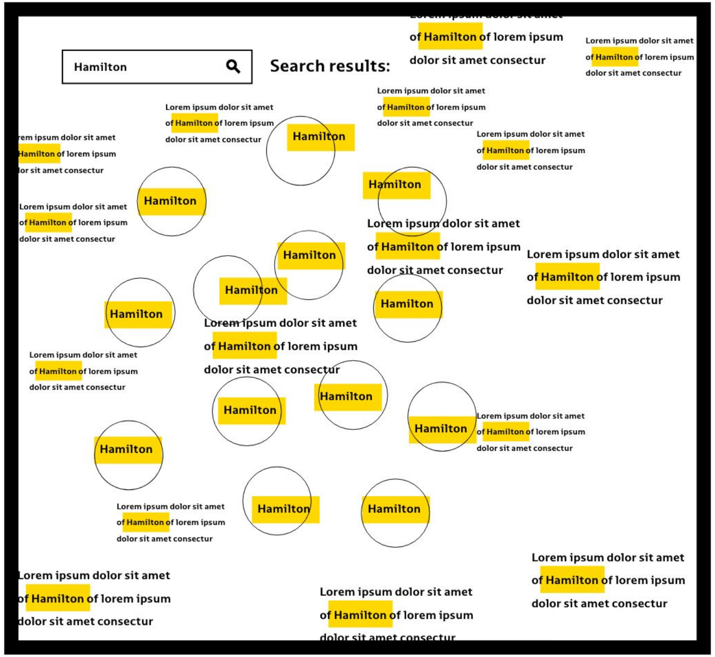
★★★★★

"A fitting sequel to The Handmaid's Tale. The characters in this book are different, but the world is the same. The world becomes more fleshed out, as the author adds details

Experience with linked data.
Search for known entities → Explore by moving from entity to entity directly.

Linked data experience

Without linked data


Hamilton
Search results:
Lorem ipsum dolor sit amet
of Hamilton of lorem ipsum
dolor sit amet consectur
Hamilton
Lorem ipsum dolor sit amet
of Hamilton of lorem ipsum
dolor sit amet consectur
Hamilton
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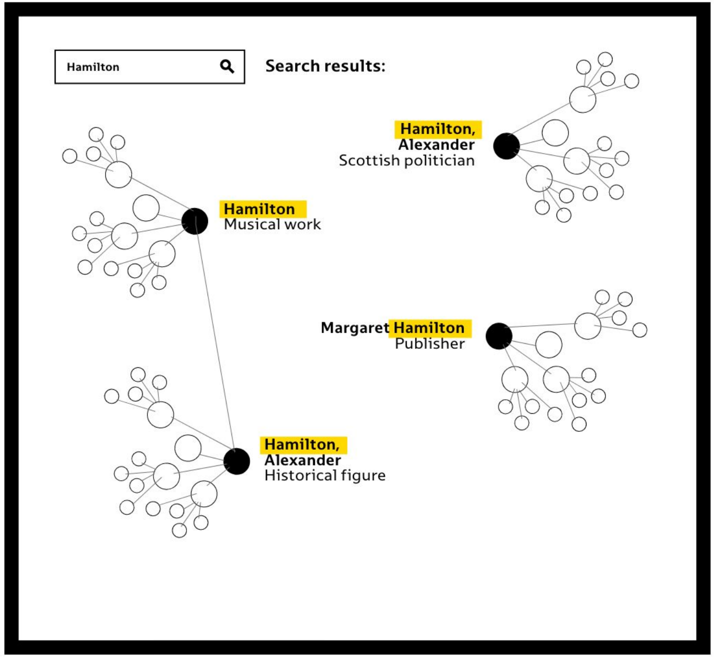
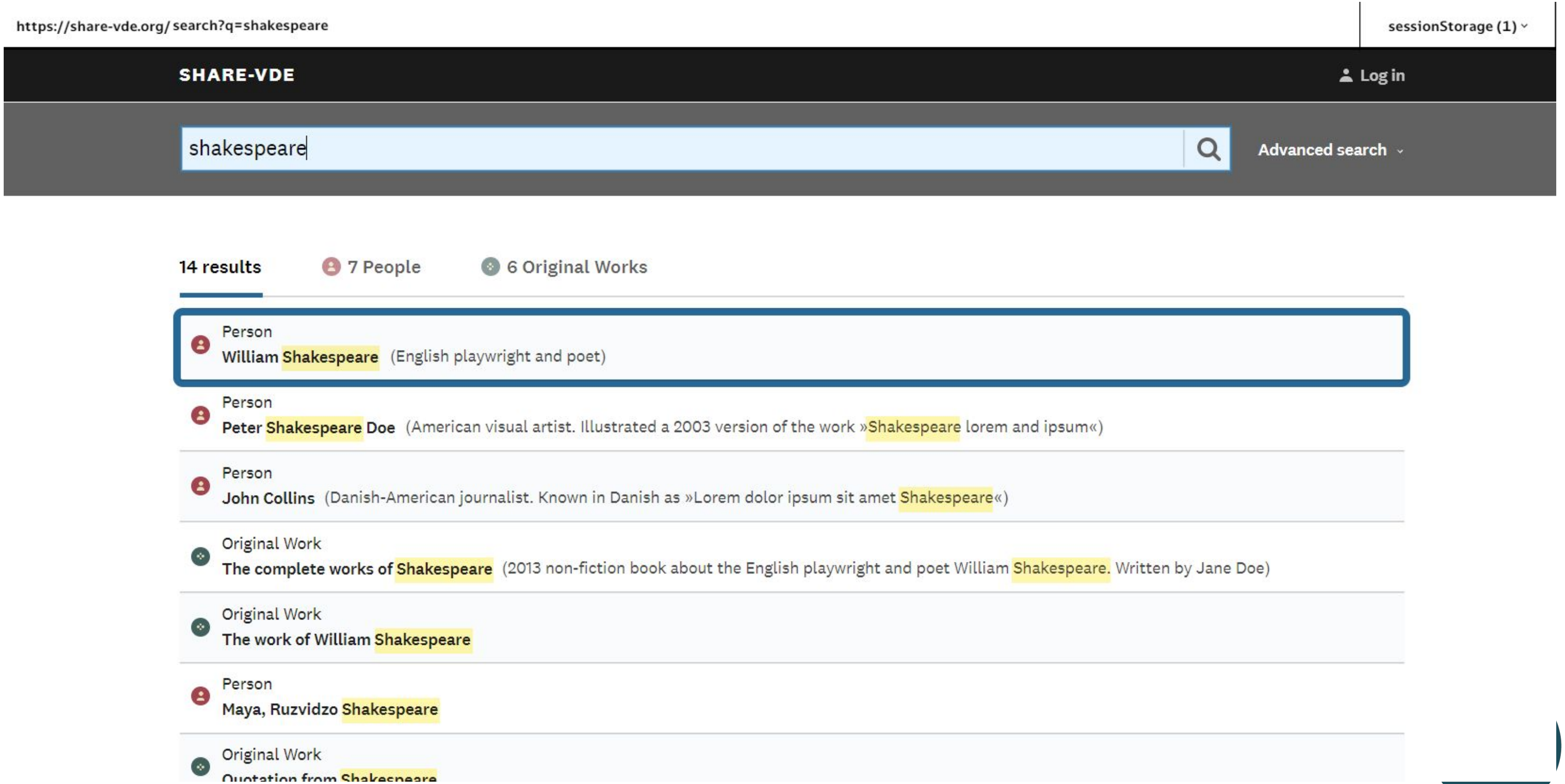
Hamilton
Lorem ipsum dolor sit amet
of Hamilton of lorem ipsum
dolor sit amet consectur

With linked data


Hamilton
Search results:
Hamilton, Alexander
Scottish politician
Hamilton
Musical work
Margaret Hamilton
Publisher
Hamilton, Alexander
Historical figure

Challenge: hide complexities



https://share-vde.org/search?q=shakespeare

shakespeare

14 results · 7 People · 6 Original Works

Person
William Shakespeare (English playwright and poet)

Person
Peter Shakespeare Doe (American visual artist. Illustrated a 2003 version of the work »Shakespeare lorem and ipsum«)

Person
John Collins (Danish-American journalist. Known in Danish as »Lorem dolor ipsum sit amet Shakespeare«)

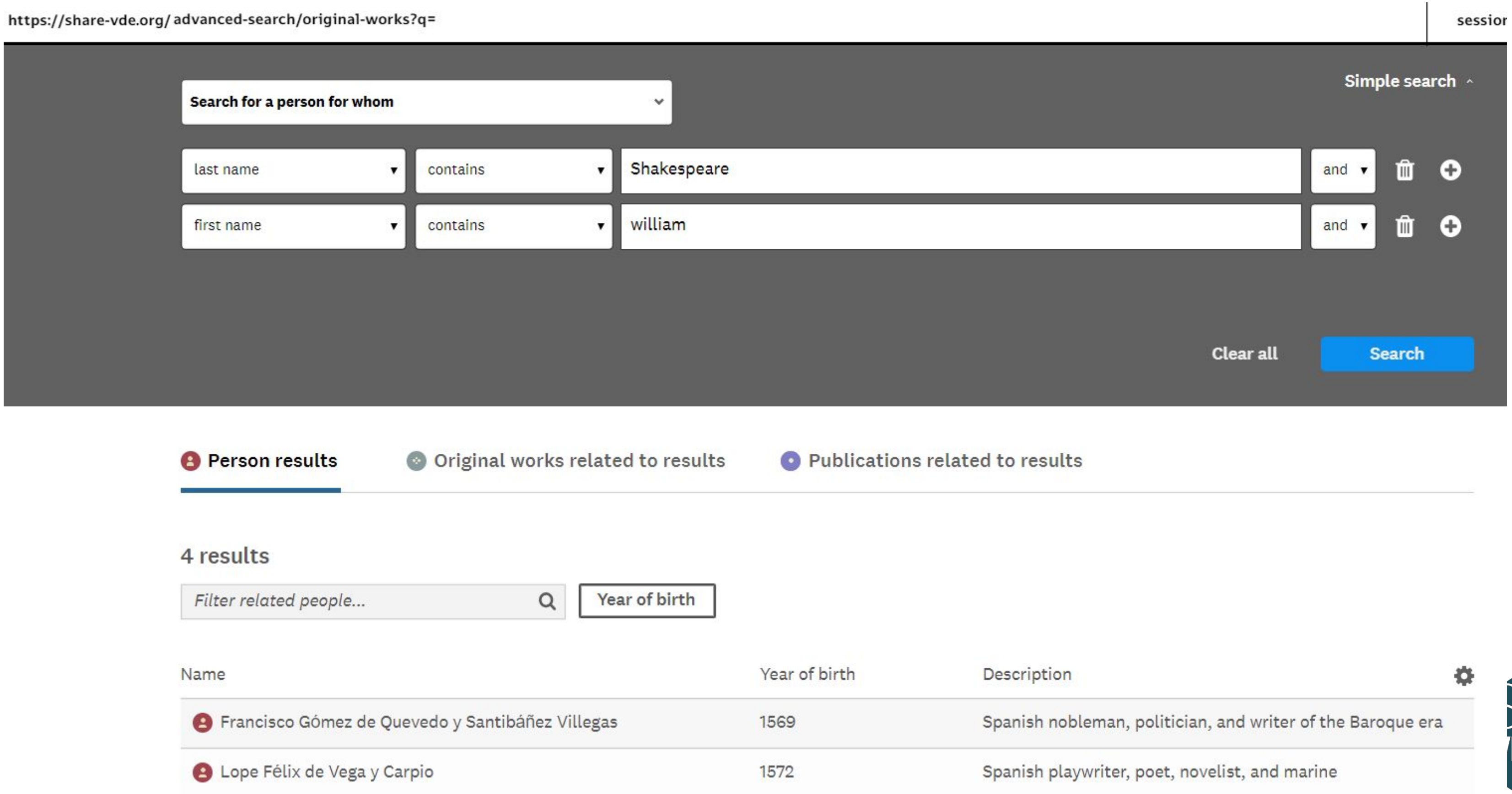
Original Work
The complete works of Shakespeare (2013 non-fiction book about the English playwright and poet William Shakespeare. Written by Jane Doe)

Original Work
The work of William Shakespeare

Person
Maya, Ruzvidzo Shakespeare

Original Work
Quotation from Shakespeare

Complexities behind search functions #1



https://share-vde.org/ advanced-search/original-works?q=

sessior

Simple search

Search for a person for whom

last name contains Shakespeare and

first name contains william and

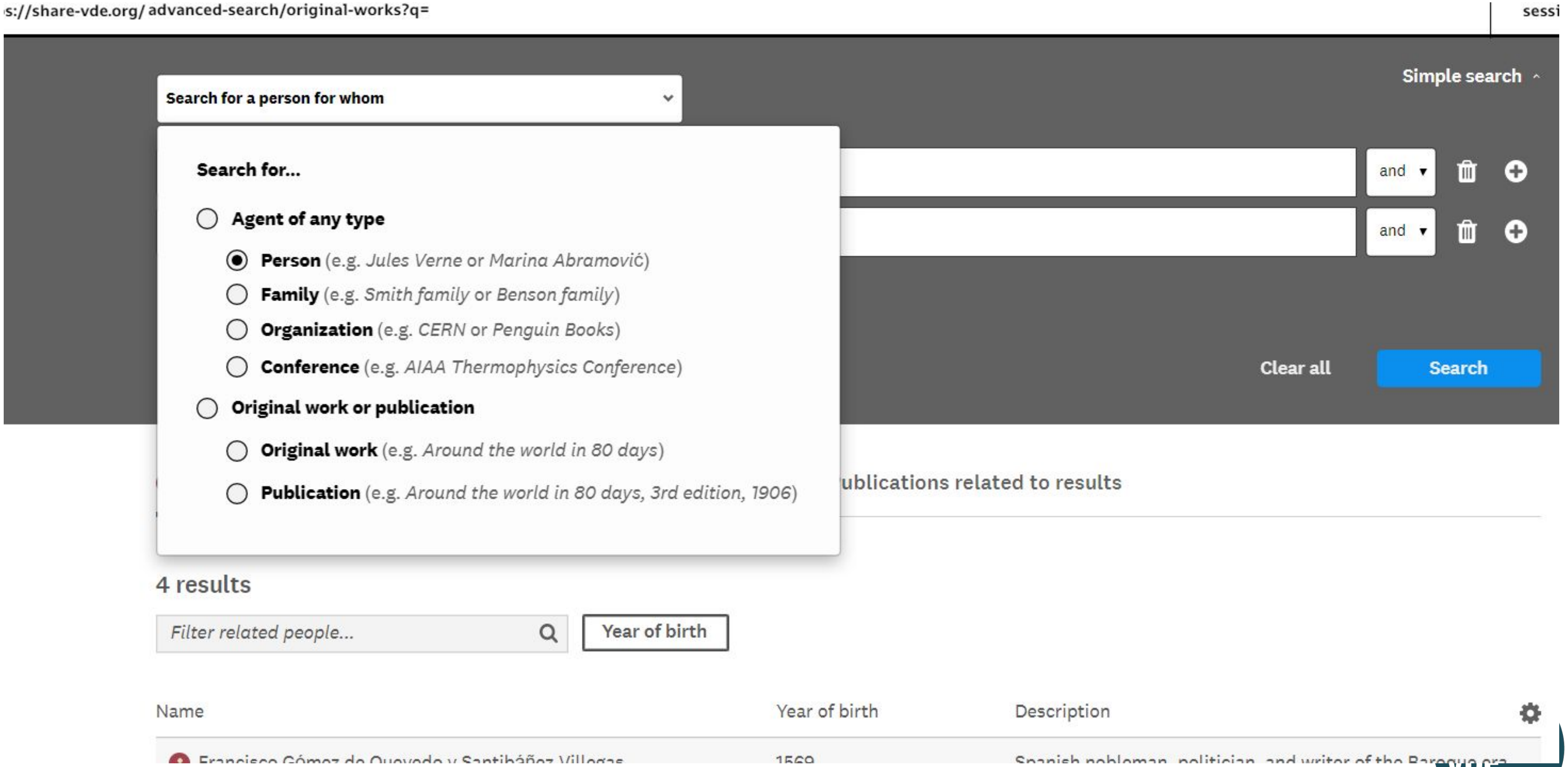
Clear all
Search
Person results
Original works related to results
Publications related to results

4 results

Filter related people...
Year of birth

Name	Year of birth	Description
Francisco Gómez de Quevedo y Santibáñez Villegas	1569	Spanish nobleman, politician, and writer of the Baroque era
Lope Félix de Vega y Carpio	1572	Spanish playwriter, poet, novelist, and marine

Complexities behind search functions #2



s://share-vde.org/ advanced-search/original-works?q=

sessi

Search for a person for whom
Simple search
and
and
Clear all
Search

Search for...

- ○ **Agent of any type**
  - ● **Person** (e.g. *Jules Verne* or *Marina Abramović*)
  - ○ **Family** (e.g. *Smith family* or *Benson family*)
  - ○ **Organization** (e.g. *CERN* or *Penguin Books*)
  - ○ **Conference** (e.g. *AIAA Thermophysics Conference*)
- ○ **Original work or publication**
  - ○ **Original work** (e.g. *Around the world in 80 days*)
  - ○ **Publication** (e.g. *Around the world in 80 days, 3rd edition, 1906*)

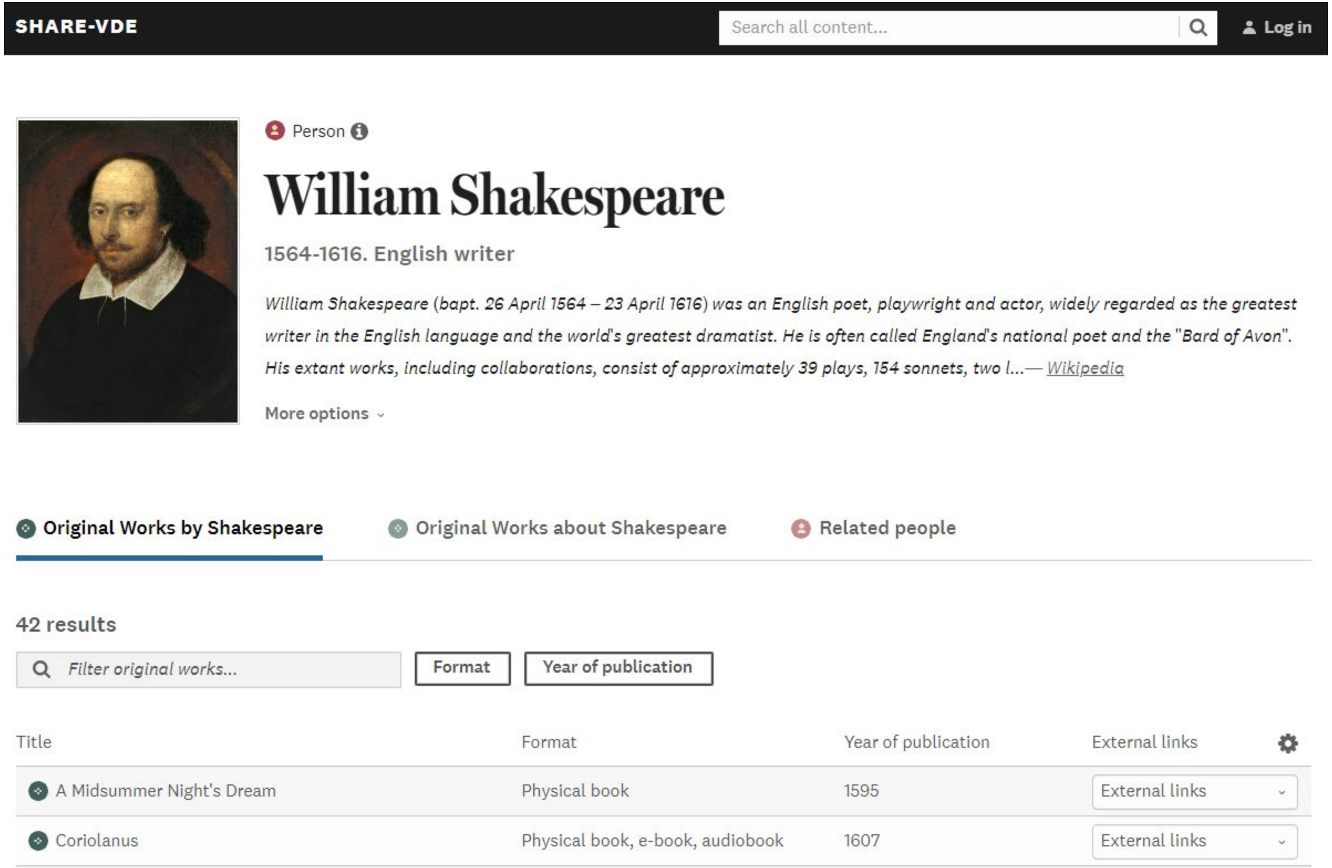
ublications related to results

4 results

Filter related people...
Year of birth

Name	Year of birth	Description
Francisco Gómez de Quevedo y Santibáñez Villegas	1569	Spanish nobleman, politician, and writer of the Baroque era

The Agent entity



SHARE-VDE

Search all content...

Log in

Person

William Shakespeare

1564-1616. English writer

William Shakespeare (bapt. 26 April 1564 – 23 April 1616) was an English poet, playwright and actor, widely regarded as the greatest writer in the English language and the world's greatest dramatist. He is often called England's national poet and the "Bard of Avon". His extant works, including collaborations, consist of approximately 39 plays, 154 sonnets, two l...— Wikipedia

More options

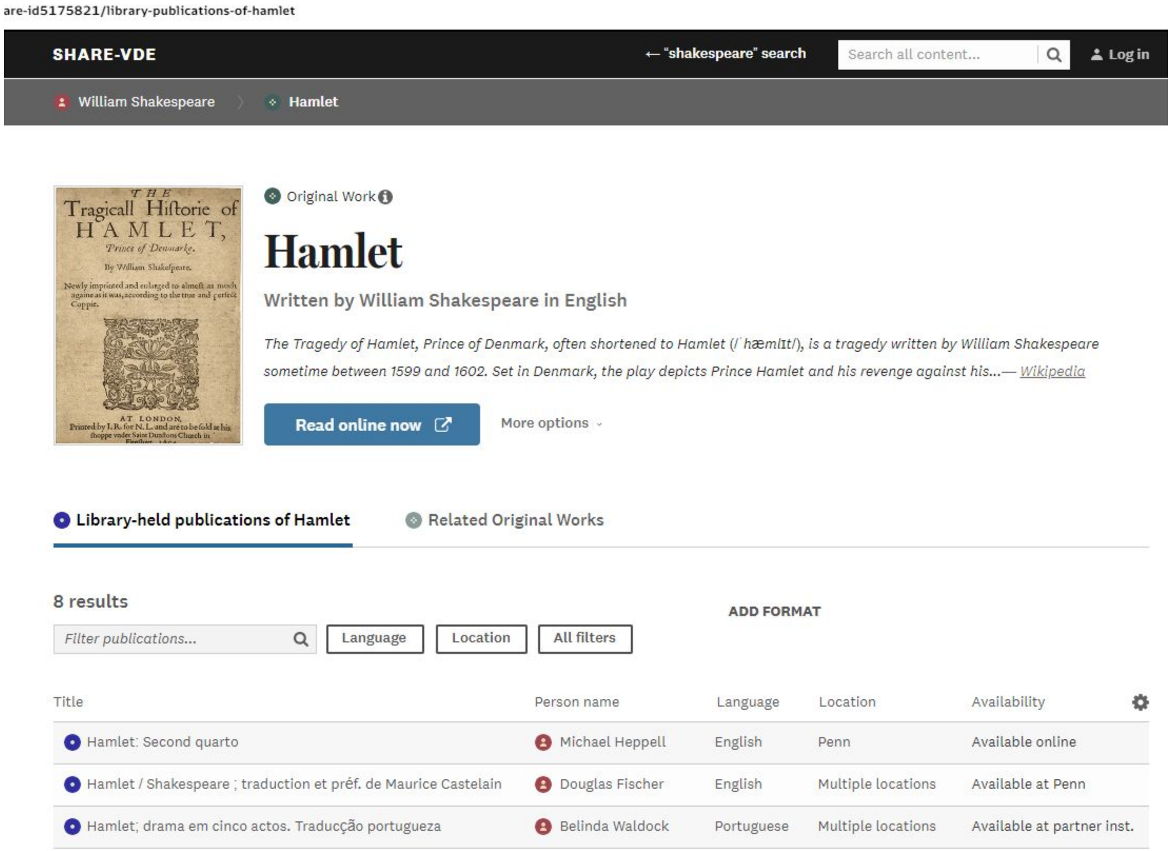
Original Works by Shakespeare | Original Works about Shakespeare | Related people

42 results

Filter original works... | Format | Year of publication

Title	Format	Year of publication	External links
A Midsummer Night's Dream	Physical book	1595	External links
Coriolanus	Physical book, e-book, audiobook	1607	External links

The Original work entity and its publications



are-id5175821/library-publications-of-hamlet

SHARE-VDE
← "shakespeare" search
Search all content...
Log in
William Shakespeare
Hamlet

Original Work

Hamlet

Written by William Shakespeare in English

The Tragedy of Hamlet, Prince of Denmark, often shortened to Hamlet (/ˈhæmlɪt/), is a tragedy written by William Shakespeare sometime between 1599 and 1602. Set in Denmark, the play depicts Prince Hamlet and his revenge against his...— Wikipedia

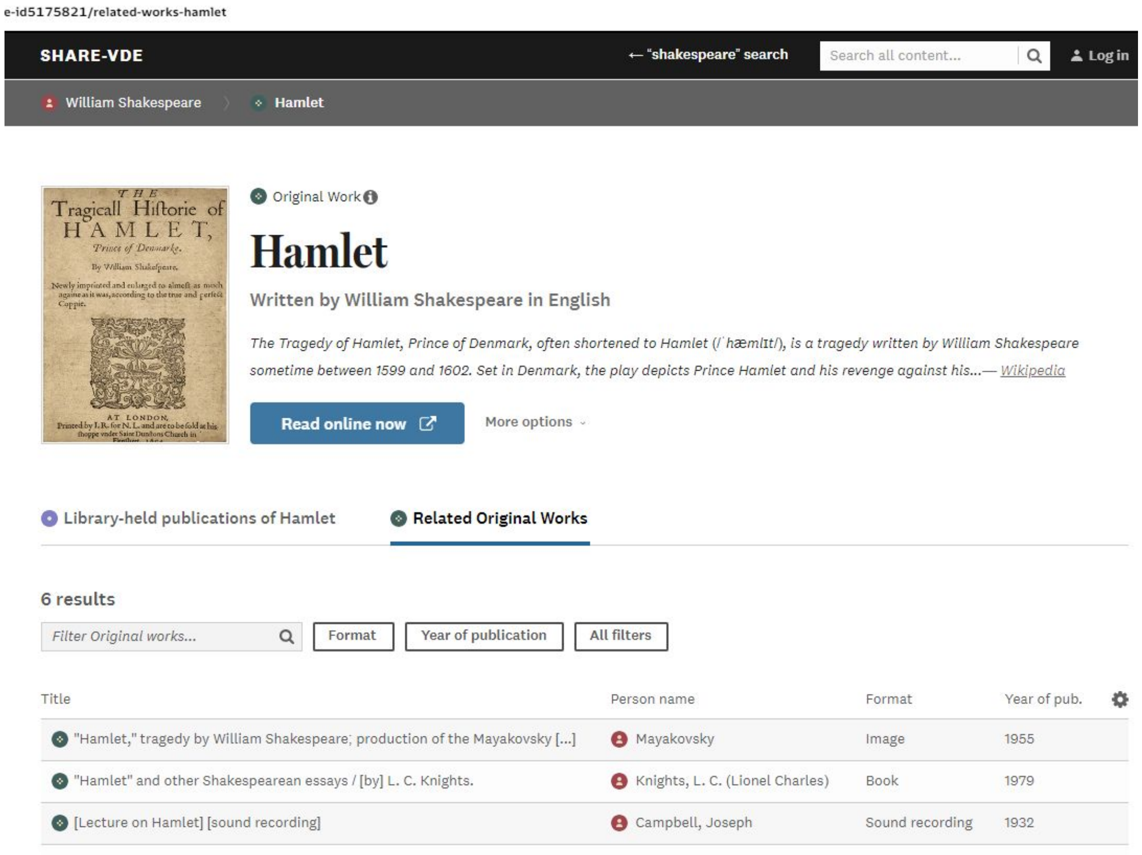
Read online now
More options
Library-held publications of Hamlet
Related Original Works

8 results

ADD FORMAT
Filter publications...
Language
Location
All filters

Title	Person name	Language	Location	Availability
Hamlet: Second quarto	Michael Heppell	English	Penn	Available online
Hamlet / Shakespeare ; traduction et préf. de Maurice Castelain	Douglas Fischer	English	Multiple locations	Available at Penn
Hamlet; drama em cinco actos. Traducção portugueza	Belinda Waldock	Portuguese	Multiple locations	Available at partner inst.

The Original work entity and its related works



e-id5175821/related-works-hamlet

SHARE-VDE
← "shakespeare" search
Search all content...
Log in
William Shakespeare
Hamlet

Original Work

Hamlet

Written by William Shakespeare in English

The Tragedy of Hamlet, Prince of Denmark, often shortened to Hamlet (/ˈhæmlɪt/), is a tragedy written by William Shakespeare sometime between 1599 and 1602. Set in Denmark, the play depicts Prince Hamlet and his revenge against his...— Wikipedia

Read online now
More options
Library-held publications of Hamlet
Related Original Works

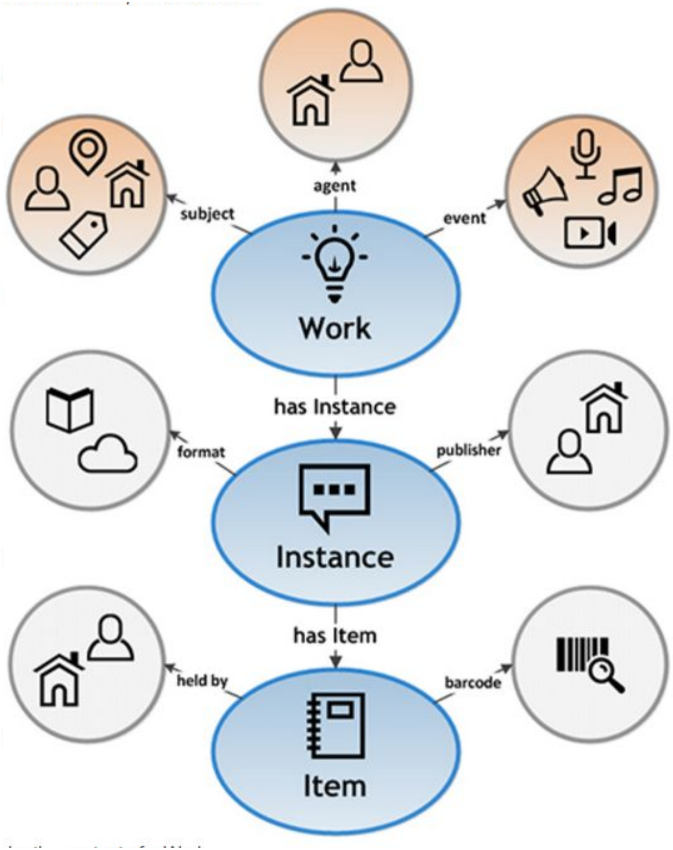
6 results

Filter Original works...
Format
Year of publication
All filters

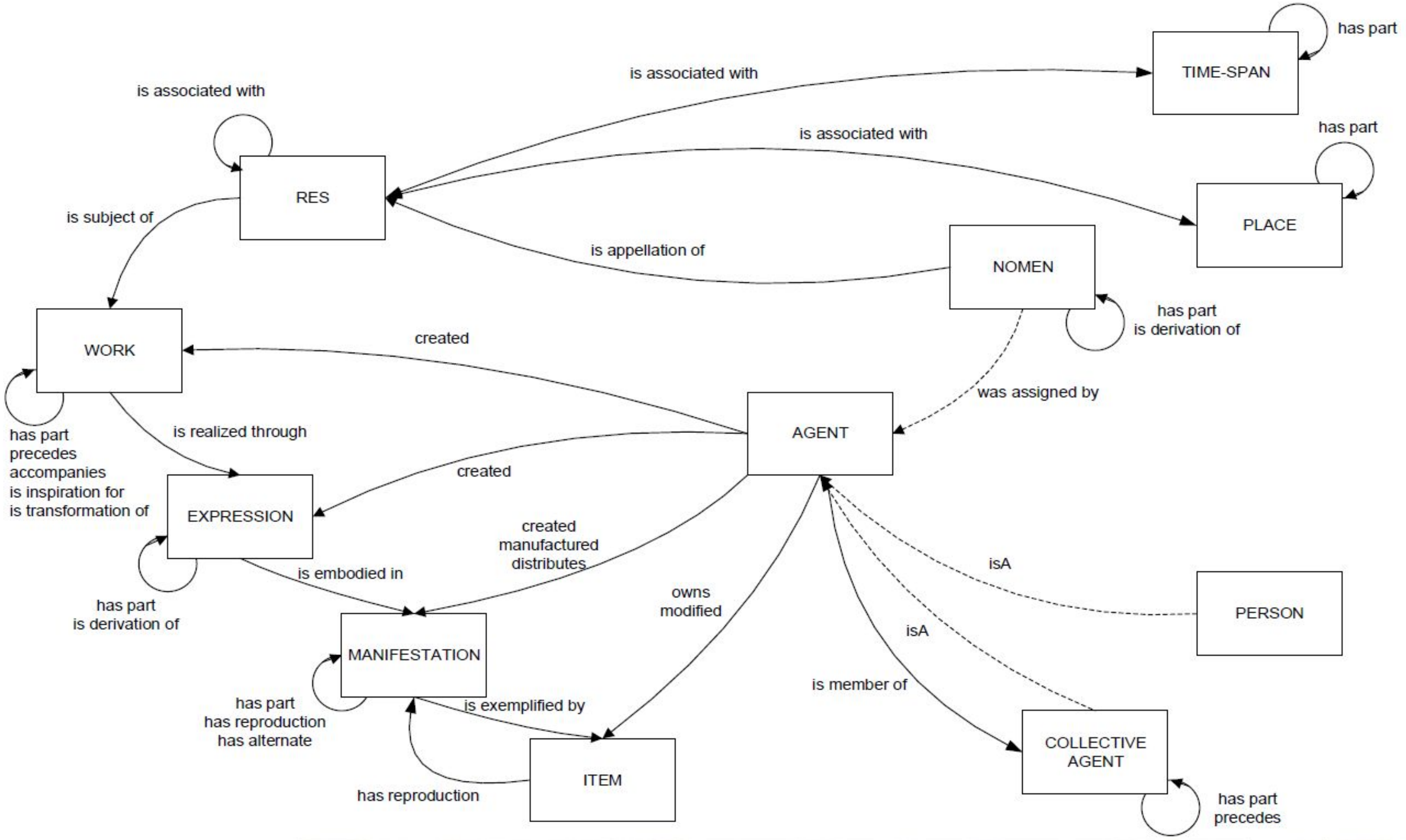
Title	Person name	Format	Year of pub.
"Hamlet," tragedy by William Shakespeare; production of the Mayakovsky [...]	Mayakovsky	Image	1955
"Hamlet" and other Shakespearean essays / [by] L. C. Knights.	Knights, L. C. (Lionel Charles)	Book	1979
[Lecture on Hamlet] [sound recording]	Campbell, Joseph	Sound recording	1932

The evolution of SVDE entity model

Starting point: BIBFRAME 2.0


agent
subject
event
Work
has Instance
format
publisher
Instance
has Item
held by
barcode
Item

Challenge: interoperability with LRM model



has part
TIME-SPAN
is associated with
is associated with
is associated with
has part
RES
PLACE
is subject of
is appellation of
NOMEN
WORK
has part
is derivation of
created
was assigned by
AGENT
has part
precedes
accompanies
is inspiration for
is transformation of
is realized through
created
EXPRESSION
created
manufactured
distributes
is embodied in
isA
owns
modified
PERSON
has part
is derivation of
isA
MANIFESTATION
is member of
has part
has reproduction
has alternate
is exemplified by
COLLECTIVE AGENT
ITEM
has reproduction
has part
precedes

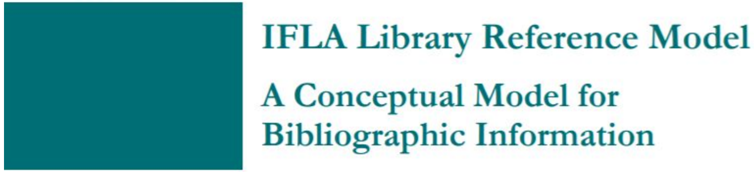
BIBFRAME vs. LRM

bf:
BIBFRAME

Work, Instance, Item (BIBFRAME)

vs.

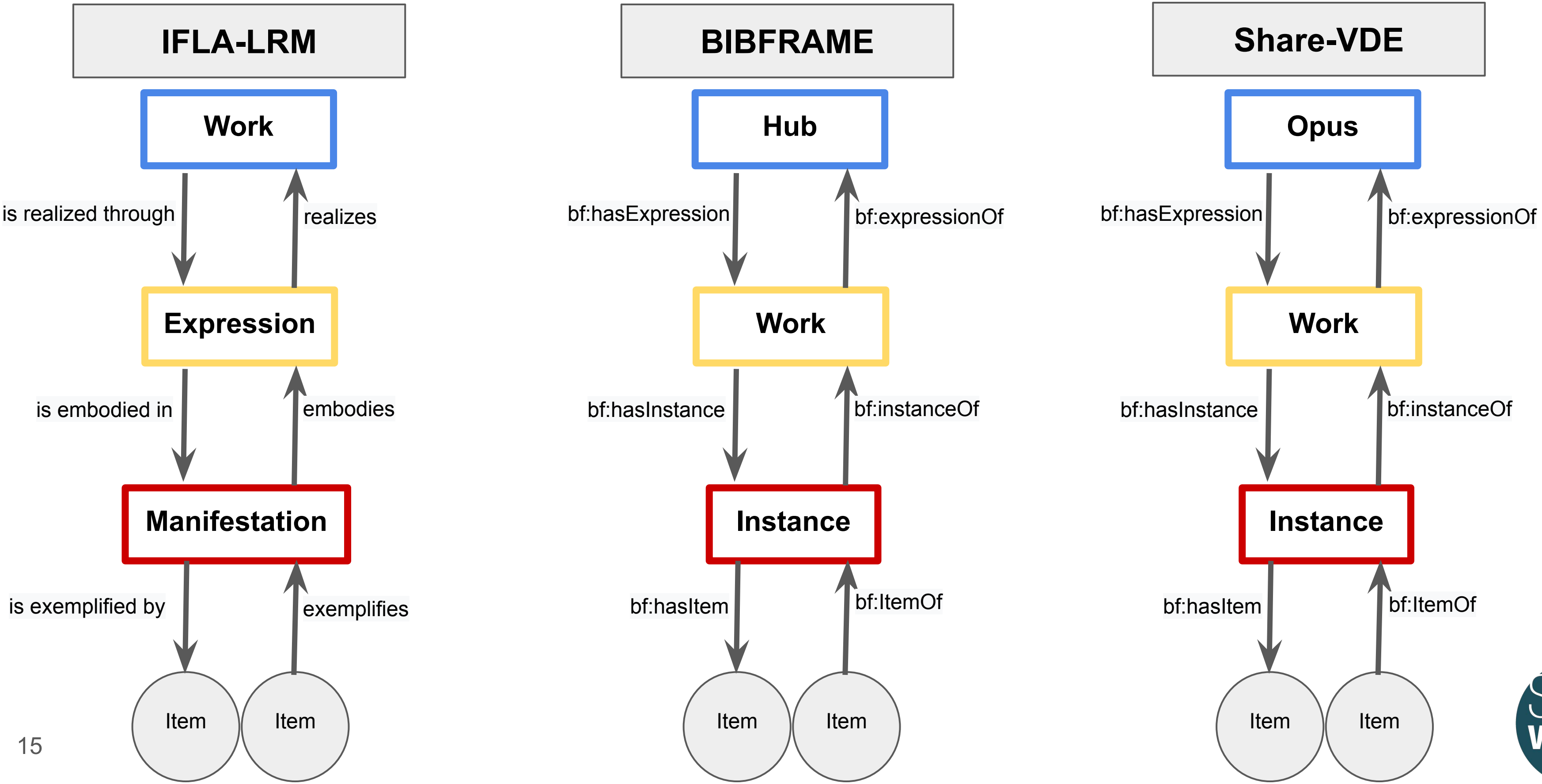
Work, Expression, Manifestation, Item (LRM)



IFLA Library Reference Model

A Conceptual Model for Bibliographic Information

Comparison of entity models in the LD community


IFLA-LRM
Work
is realized through
realizes
Expression
is embodied in
embodies
Manifestation
is exemplified by
exemplifies
Item
Item
BIBFRAME
Hub
bf:hasExpression
bf:expressionOf
Work
bf:hasInstance
bf:instanceOf
Instance
bf:hasItem
bf:ItemOf
Item
Item
Share-VDE
Opus
bf:hasExpression
bf:expressionOf
Work
bf:hasInstance
bf:instanceOf
Instance
bf:hasItem
bf:ItemOf
Item
Item

Challenge: identify the “original work”

In the Share-VDE portal the “grouping” ability (effective for the purpose of enhancing the user’s *navigation* function) is largely proposed starting from each entity.
If the Agent, with its attributes and its relationships, is clearly designed in all data models, both for researches and for librarians, the “Work” is a more complex entity due to the high degree of abstraction:

- ? how can we represent this abstraction without losing the effectiveness conveyed by the expression?
- ? how do we extract the intellectual content from the bf:Work that is the sum of both abstract content and concrete representation?

adding a new level/extension to BIBFRAME allows to separate the intellectual content → identification of the “original work”

Overcoming the challenges

To overcome the challenge of identifying the original work ***and*** keep interoperability with other models...

the SuperWork was created

To avoid confusion with other definitions of “superwork”, the Share-VDE SuperWork was ***renamed*** the Share-VDE ***Opus*** in February 2020 becoming also a new conceptual family or type of bibliographic element

The analysis of the entity model #1

The analysis in the dedicated SVDE working group considered 4 main scenarios to model the "work" entity

Main attempt:

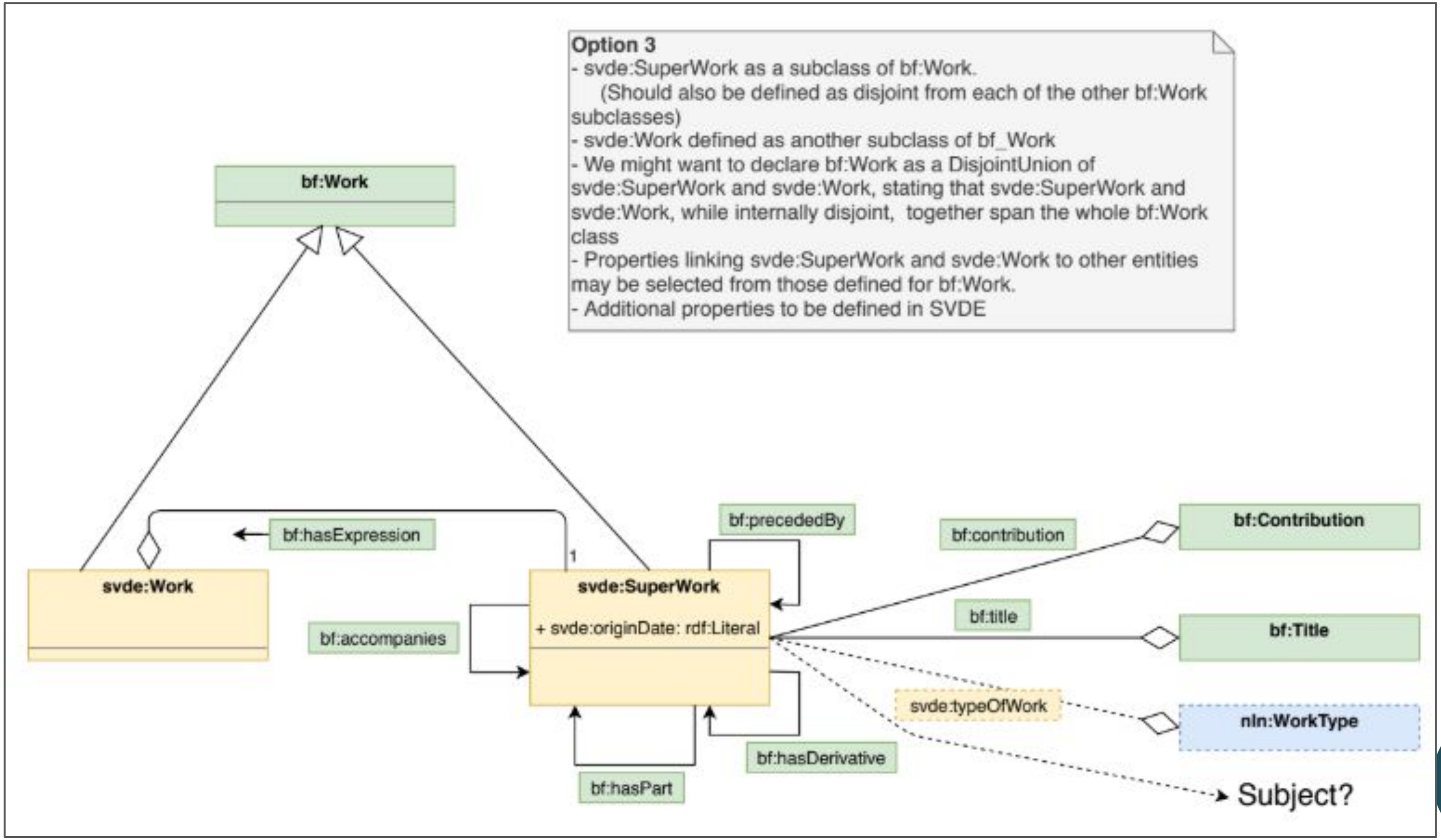
identify among many works at the same level the "original work" of an author, the "*Opus*" in its original Latin meaning

↓

The aggregating power of an Opus is the ability to bundle together all variants and publications of an abstract work

The analysis of the entity model #2

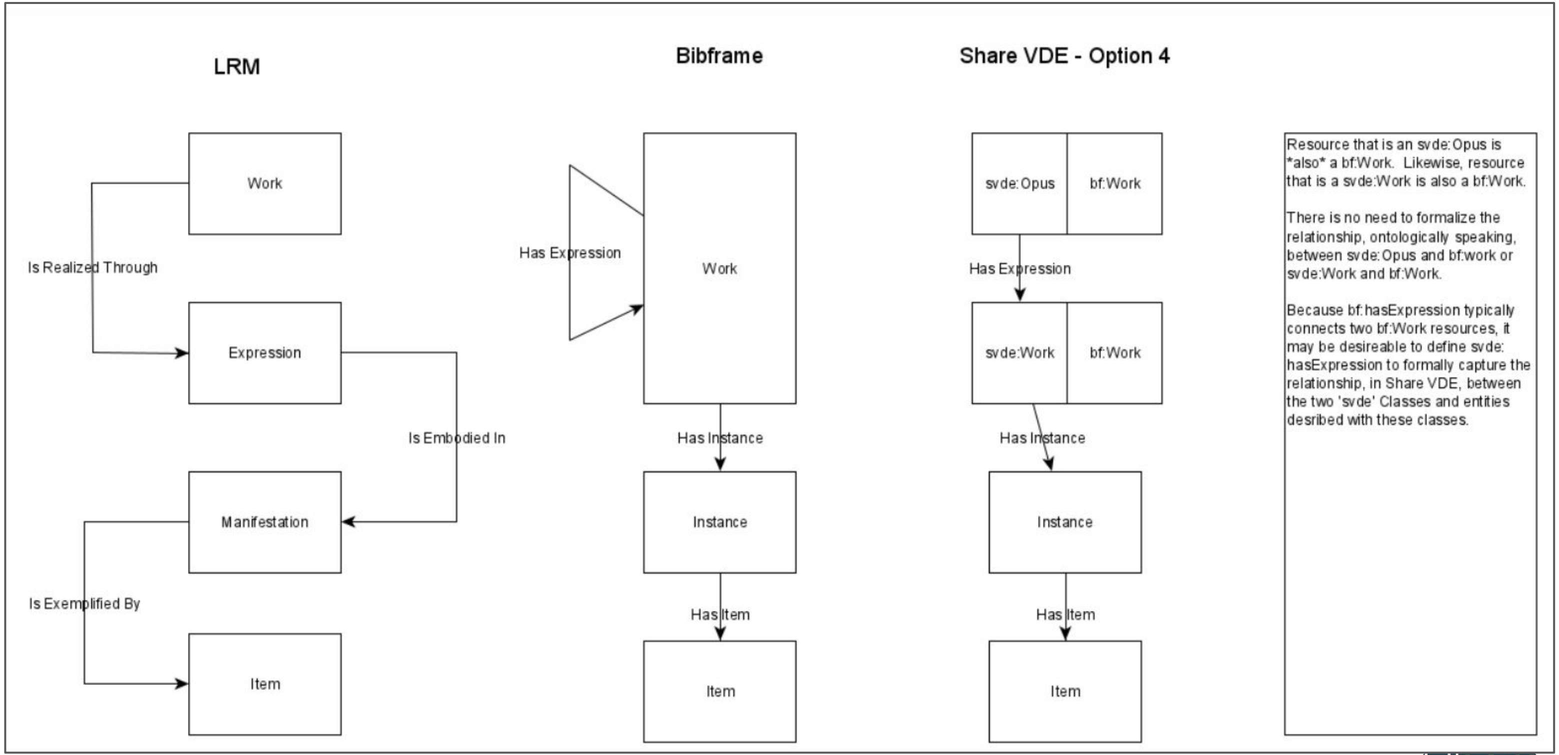
So called
“Option 3”


bf:Work
bf:hasExpression
1
svde:Work
svde:SuperWork
+ svde:originDate: rdf:Literal
bf:accompanies
bf:precededBy
bf:contribution
bf:Contribution
bf:title
bf:Title
svde:typeOfWork
nln:WorkType
bf:hasDerivative
bf:hasPart
Subject?

Option 3
- svde:SuperWork as a subclass of bf:Work.
(Should also be defined as disjoint from each of the other bf:Work subclasses)
- svde:Work defined as another subclass of bf_Work
- We might want to declare bf:Work as a DisjointUnion of svde:SuperWork and svde:Work, stating that svde:SuperWork and svde:Work, while internally disjoint, together span the whole bf:Work class
- Properties linking svde:SuperWork and svde:Work to other entities may be selected from those defined for bf:Work.
- Additional properties to be defined in SVDE

The analysis of the entity model #3

So called “Option 4”
more flexible and interoperable with BIBFRAME and IFLA-LRM


LRM
Work
Is Realized Through
Expression
Is Embodied In
Manifestation
Is Exemplified By
Item
Bibframe
Has Expression
Work
Has Instance
Instance
Has Item
Item
Share VDE - Option 4
svde:Opus
bf:Work
Has Expression
svde:Work
bf:Work
Has Instance
Instance
Has Item
Item

Resource that is an svde:Opus is *also* a bf:Work. Likewise, resource that is a svde:Work is also a bf:Work.

There is no need to formalize the relationship, ontologically speaking, between svde:Opus and bf:work or svde:Work and bf:Work.

Because bf:hasExpression typically connects two bf:Work resources, it may be desireable to define svde: hasExpression to formally capture the relationship, in Share VDE, between the two 'svde' Classes and entities desribed with these classes.

Similarities and differences #1

Representation in Option 3

Through subclassing:

svde:Opus is defined as a subclass of bf:Work

Desired model feature

An entity representing the abstract works of the bf:Work class is needed; svde:Opus

Any svde:Opus shall be regarded as a bf:Work.

Representation in Option 4

Through instantiation algorithms:

svde:Opus is defined as a separate class, not a subclass of bf:Work. All svde:Opus instances are also explicitly declared instances of bf:Work

Similarities and differences #2

Representation in Option 3

Through subclassing:

svde:Work is defined as a subclass of bf:Work

Desired model feature

An entity representing the “expression-like” entities of the bf:Work class is needed; svde:Work.

Any svde:Work shall be regarded as a bf:Work.

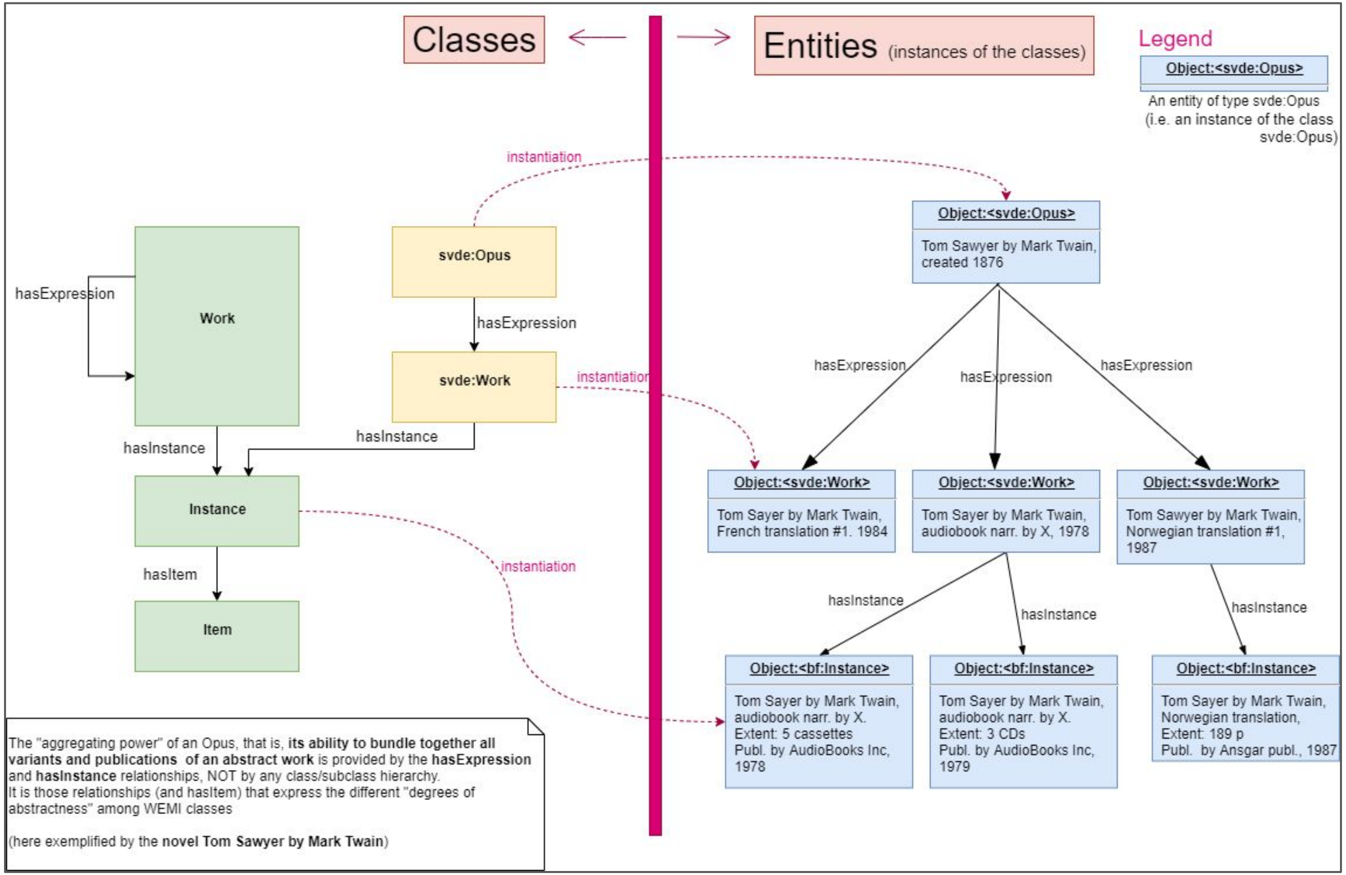
Representation in Option 4

Through instantiation algorithms:

svde:Work is defined as a separate class, not a subclass of bf:Work. All svde:Work instances are also explicitly declared instances of bf:Work

The choice of the entity model

So called “Option 4”



Classes

Entities (instances of the classes)

Legend

Object:<svde:Opus>

An entity of type svde:Opus (i.e. an instance of the class svde:Opus)

Work

Instance

Item

hasExpression

hasInstance

hasItem

svde:Opus

svde:Work

hasExpression

hasInstance

instantiation

instantiation

instantiation

Object:<svde:Opus>

Tom Sawyer by Mark Twain, created 1876

hasExpression

hasExpression

hasExpression

Object:<svde:Work>

Tom Sayer by Mark Twain, French translation #1. 1984

Object:<svde:Work>

Tom Sayer by Mark Twain, audiobook narr. by X, 1978

Object:<svde:Work>

Tom Sawyer by Mark Twain, Norwegian translation #1, 1987

hasInstance

hasInstance

hasInstance

Object:<bf:Instance>

Tom Sayer by Mark Twain, audiobook narr. by X. Extent: 5 cassettes Publ. by AudioBooks Inc, 1978

Object:<bf:Instance>

Tom Sayer by Mark Twain, audiobook narr. by X. Extent: 3 CDs Publ. by AudioBooks Inc, 1979

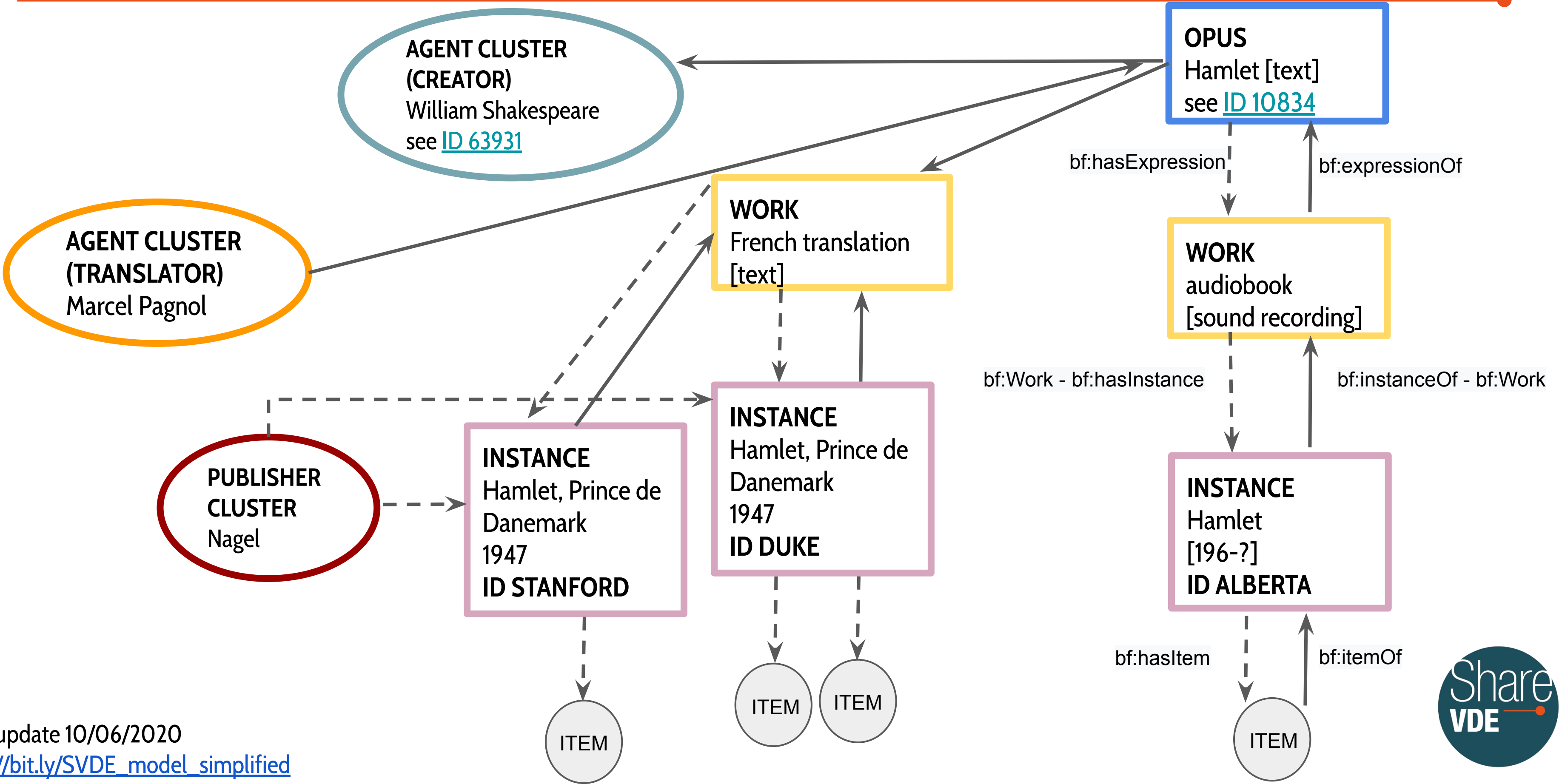
Object:<bf:Instance>

Tom Sayer by Mark Twain, Norwegian translation, Extent: 189 p Publ. by Ansgar publ., 1987

The "aggregating power" of an Opus, that is, **its ability to bundle together all variants and publications of an abstract work** is provided by the **hasExpression** and **hasInstance** relationships, NOT by any class/subclass hierarchy.
It is those relationships (and hasItem) that express the different "degrees of abstractness" among WEMI classes

(here exemplified by the **novel Tom Sawyer by Mark Twain**)

Current Share-VDE model simplified



OPUS
Hamlet [text]
see ID 10834

AGENT CLUSTER (CREATOR)
William Shakespeare
see ID 63931

AGENT CLUSTER (TRANSLATOR)
Marcel Pagnol

WORK
French translation [text]

WORK
audiobook [sound recording]

PUBLISHER CLUSTER
Nagel

INSTANCE
Hamlet, Prince de Danemark
1947
ID STANFORD

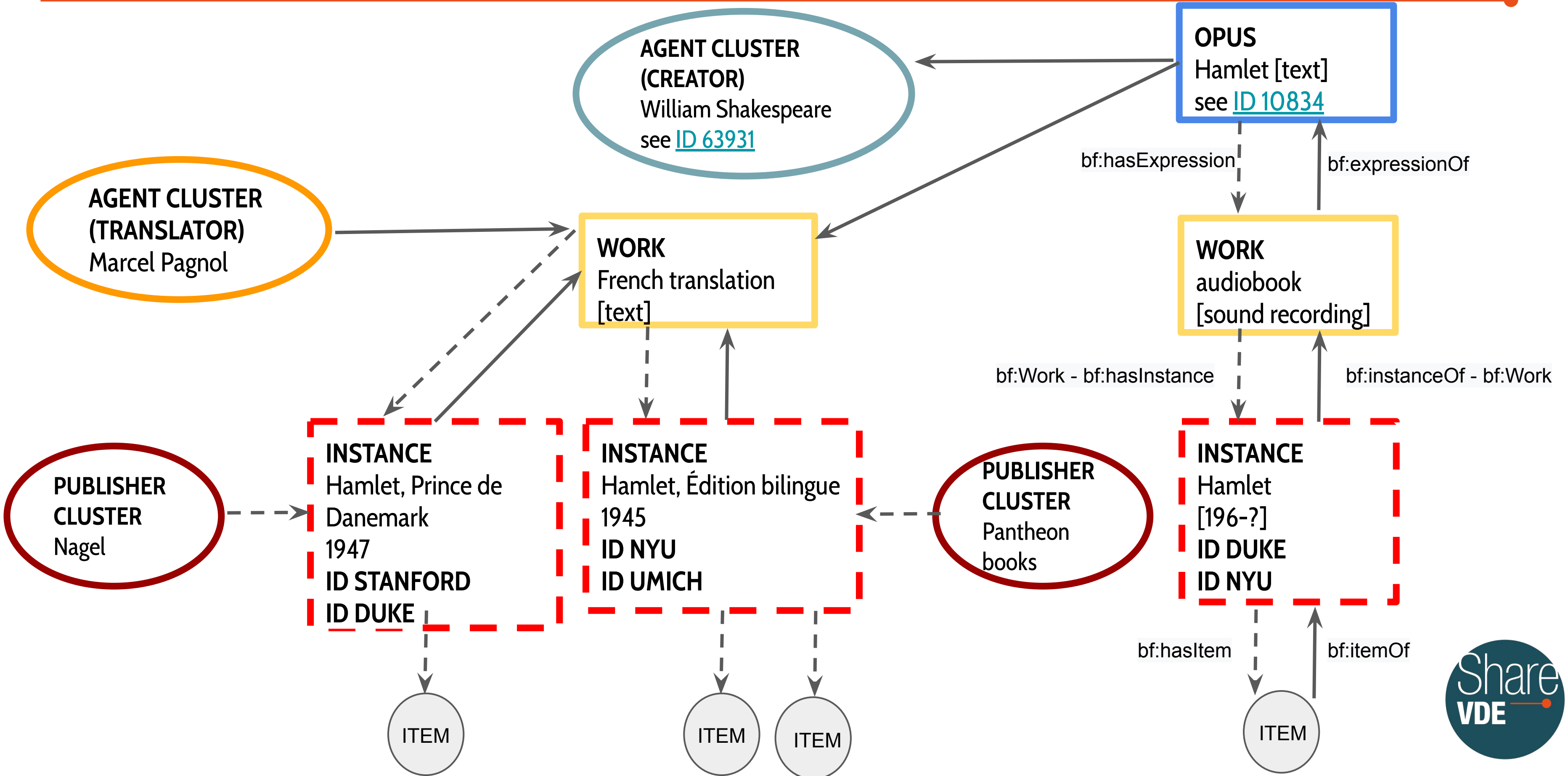
INSTANCE
Hamlet, Prince de Danemark
1947
ID DUKE

INSTANCE
Hamlet
[196-?]
ID ALBERTA

bf:hasExpression
bf:expressionOf
bf:Work - bf:hasInstance
bf:instanceOf - bf:Work
bf:hasItem
bf:itemOf
ITEM
ITEM
ITEM
ITEM

Last update 10/06/2020
http://bit.ly/SVDE_model_simplified

Future Share-VDE model simplified



OPUS
Hamlet [text]
see ID 10834

AGENT CLUSTER (CREATOR)
William Shakespeare
see ID 63931

AGENT CLUSTER (TRANSLATOR)
Marcel Pagnol

WORK
French translation [text]

WORK
audiobook [sound recording]

bf:hasExpression

bf:expressionOf

bf:Work - bf:hasInstance

bf:instanceOf - bf:Work

PUBLISHER CLUSTER
Nagel

INSTANCE
Hamlet, Prince de Danemark
1947
ID STANFORD
ID DUKE

INSTANCE
Hamlet, Édition bilingue
1945
ID NYU
ID UMICH

PUBLISHER CLUSTER
Pantheon books

INSTANCE
Hamlet
[196-?]
ID DUKE
ID NYU

bf:hasItem

bf:itemOf

ITEM

ITEM

ITEM

ITEM

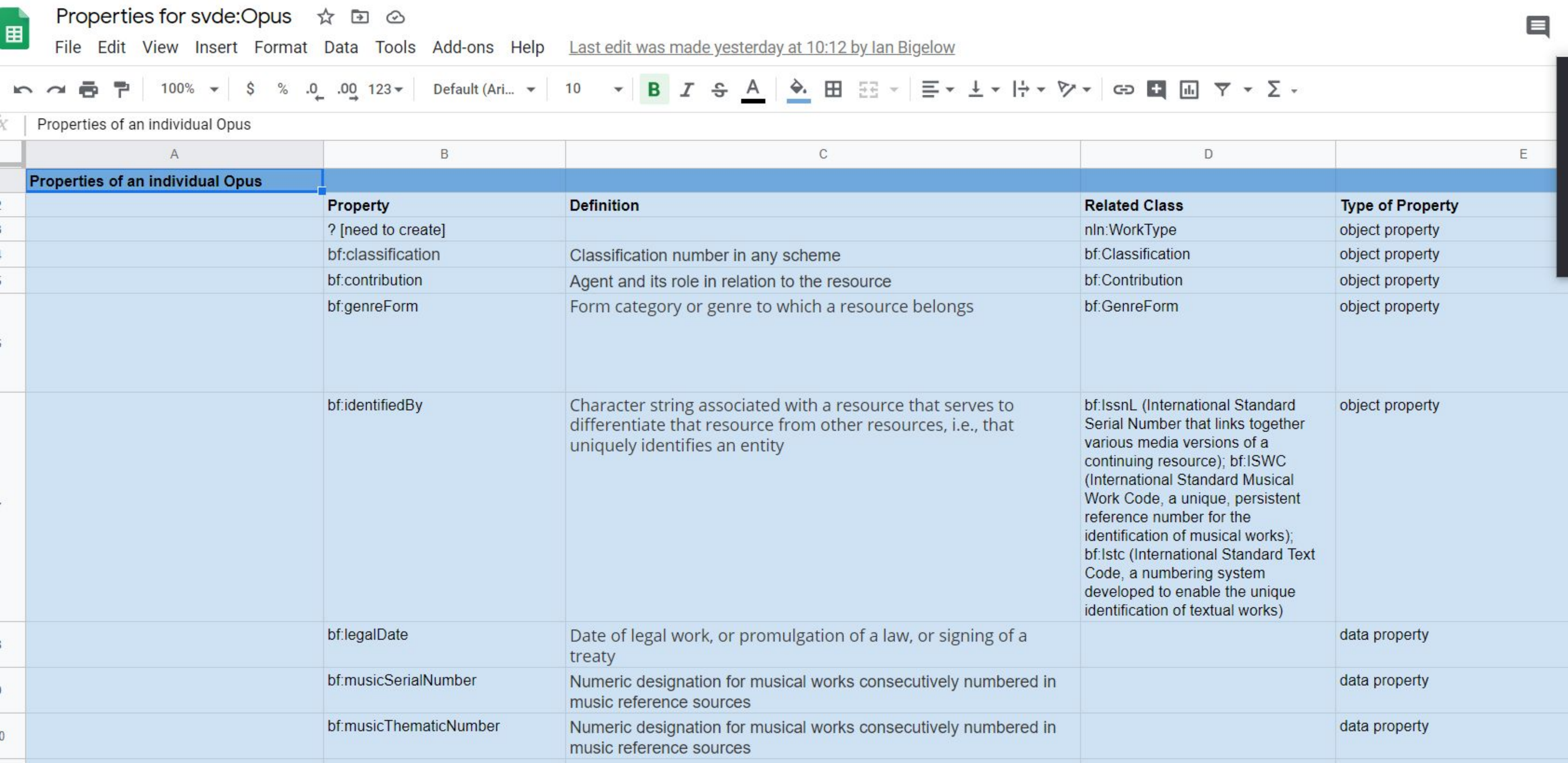
Where we are now

Goal: finalize the work done so far and choose the model that best fits the purpose of identification, description, conversion and maintenance of SVDE data - also taking into account interoperability issues with other models

How to advance **from discussion to implementation**?

1. Review svde:Opus in details

2. Substantiate the svde:Opus with attributes and relationships


Properties for svde:Opus
File
Edit
View
Insert
Format
Data
Tools
Add-ons
Help
Last edit was made yesterday at 10:12 by Ian Bigelow
100%
$
%
.0
.00
123
Default (Ari...
10
B
I
S
A
A
B
C
D
E

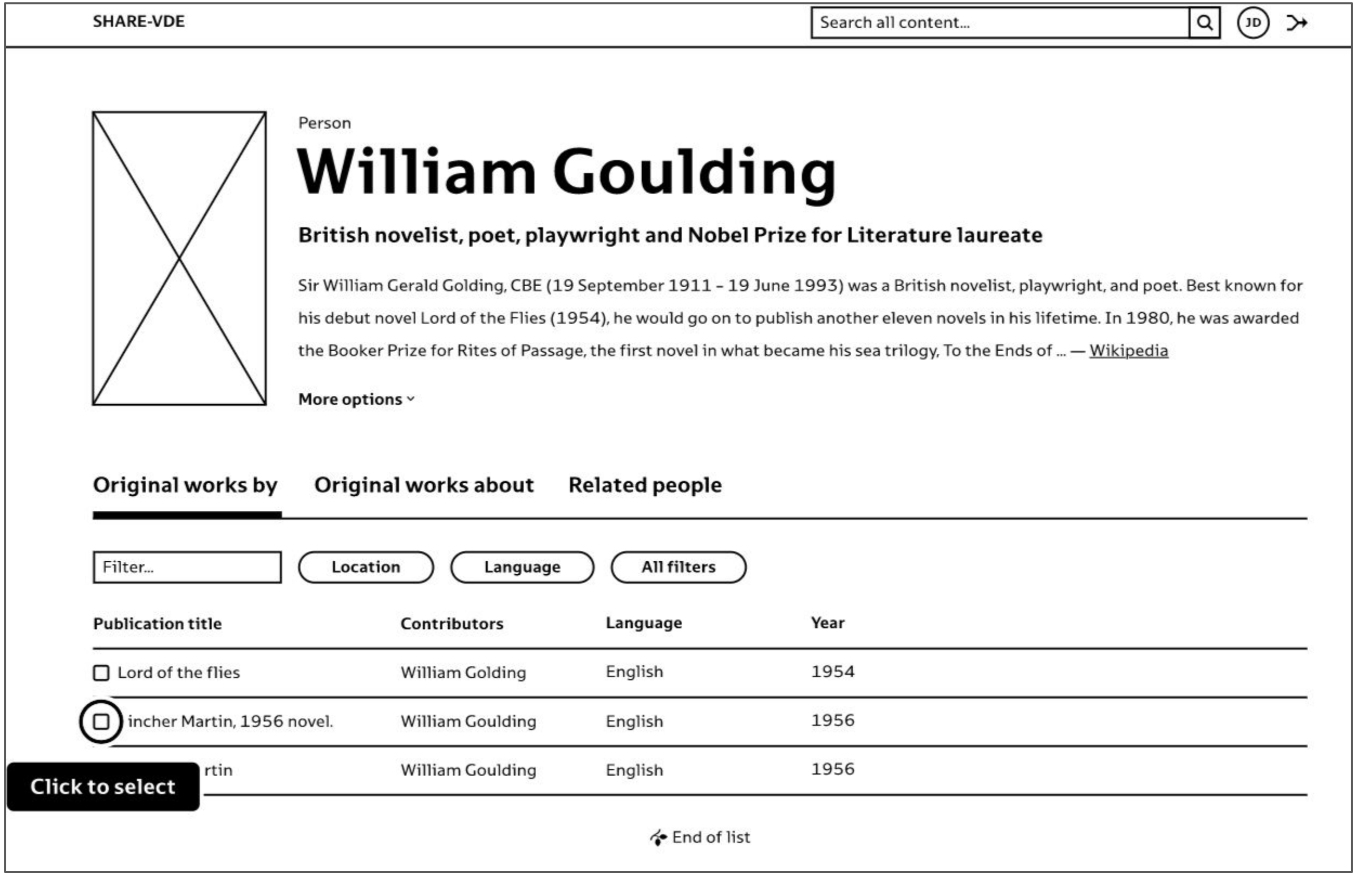
Properties of an individual Opus

Properties of an individual Opus

	Property	Definition	Related Class	Type of Property
	? [need to create]		nln:WorkType	object property
	bf:classification	Classification number in any scheme	bf:Classification	object property
	bf:contribution	Agent and its role in relation to the resource	bf:Contribution	object property
	bf:genreForm	Form category or genre to which a resource belongs	bf:GenreForm	object property
	bf:identifiedBy	Character string associated with a resource that serves to differentiate that resource from other resources, i.e., that uniquely identifies an entity	bf:IssnL (International Standard Serial Number that links together various media versions of a continuing resource); bf:ISWC (International Standard Musical Work Code, a unique, persistent reference number for the identification of musical works); bf:Istc (International Standard Text Code, a numbering system developed to enable the unique identification of textual works)	object property
	bf:legalDate	Date of legal work, or promulgation of a law, or signing of a treaty		data property
	bf:musicSerialNumber	Numeric designation for musical works consecutively numbered in music reference sources		data property
	bf:musicThematicNumber	Numeric designation for musical works consecutively numbered in music reference sources		data property

Data publication vs. data editing

Merge of more Opuses #1


SHARE-VDE
Search all content...
JD

Person

William Goulding

British novelist, poet, playwright and Nobel Prize for Literature laureate

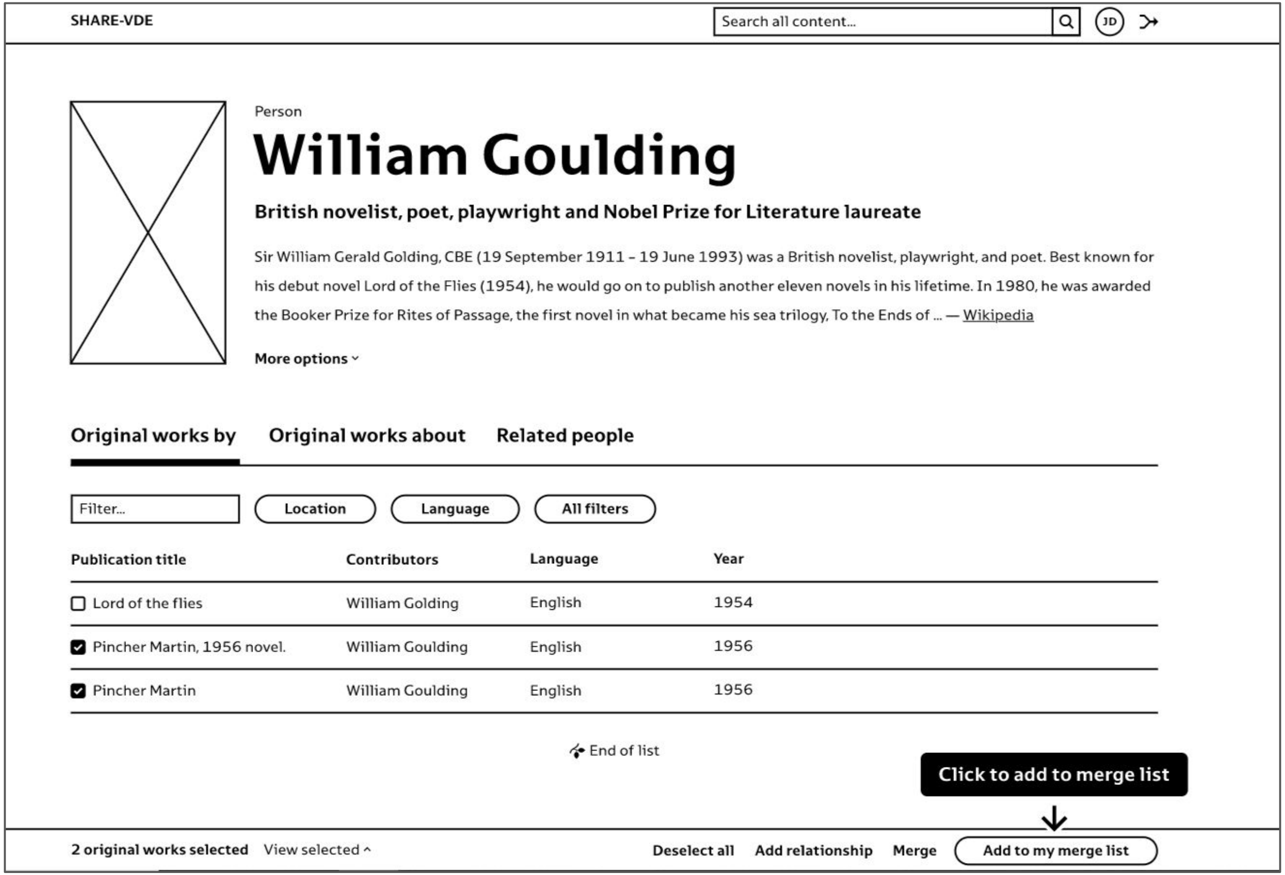
Sir William Gerald Golding, CBE (19 September 1911 – 19 June 1993) was a British novelist, playwright, and poet. Best known for his debut novel Lord of the Flies (1954), he would go on to publish another eleven novels in his lifetime. In 1980, he was awarded the Booker Prize for Rites of Passage, the first novel in what became his sea trilogy, To the Ends of ... — Wikipedia

More options
Original works by
Original works about
Related people
Filter...
Location
Language
All filters

Publication title	Contributors	Language	Year
☐ Lord of the flies	William Golding	English	1954
☐ incher Martin, 1956 novel.	William Goulding	English	1956
rtin	William Goulding	English	1956

Click to select
End of list

Merge of more Opuses #2



SHARE-VDE
Search all content...
JD

Person

William Goulding

British novelist, poet, playwright and Nobel Prize for Literature laureate

Sir William Gerald Golding, CBE (19 September 1911 – 19 June 1993) was a British novelist, playwright, and poet. Best known for his debut novel Lord of the Flies (1954), he would go on to publish another eleven novels in his lifetime. In 1980, he was awarded the Booker Prize for Rites of Passage, the first novel in what became his sea trilogy, To the Ends of ... — Wikipedia

More options
Original works by
Original works about
Related people
Filter...
Location
Language
All filters

Publication title	Contributors	Language	Year
☐ Lord of the flies	William Golding	English	1954
☑ Pincher Martin, 1956 novel.	William Goulding	English	1956
☑ Pincher Martin	William Goulding	English	1956

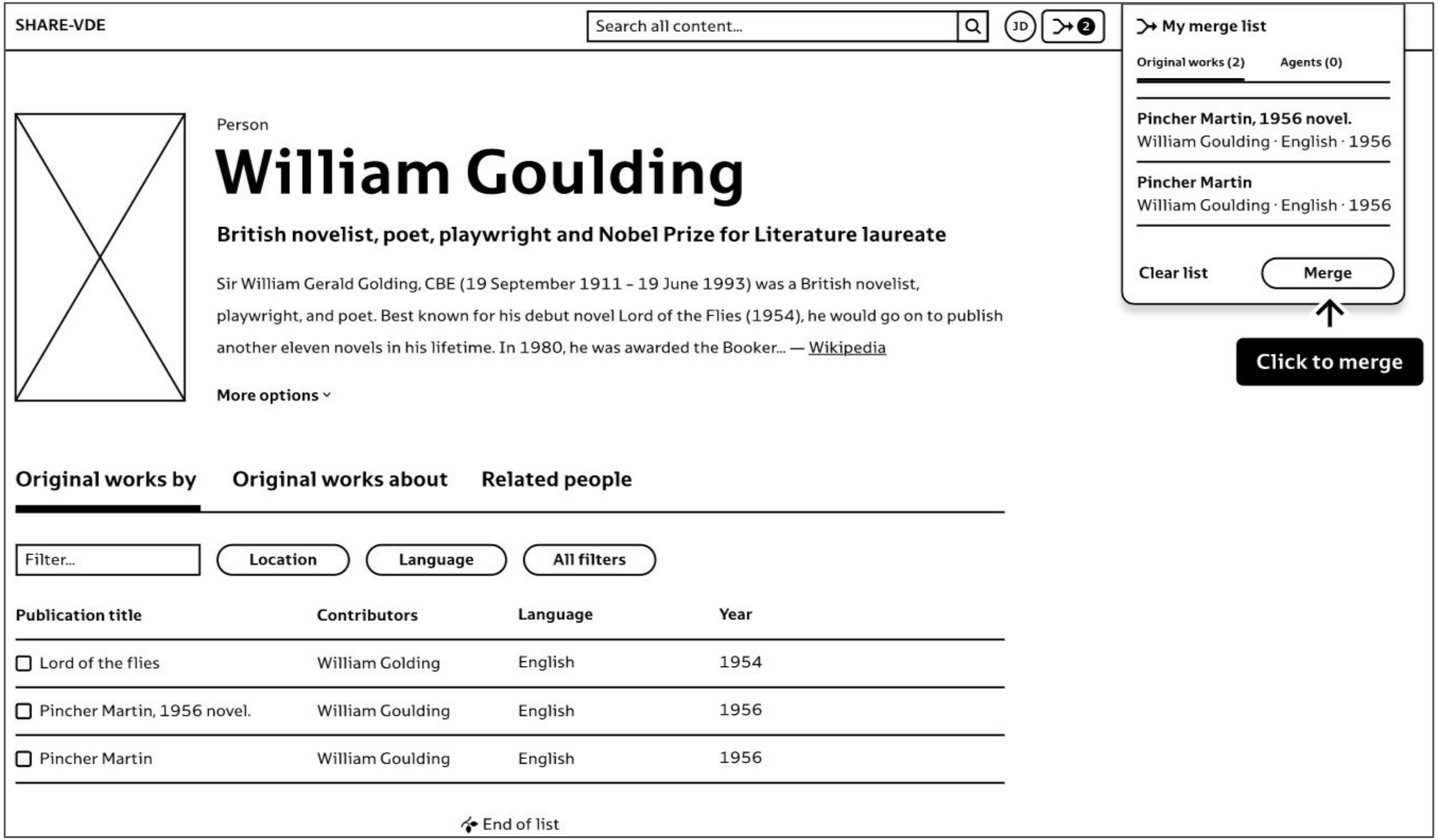
End of list

Click to add to merge list

2 original works selected

View selected
Deselect all
Add relationship
Merge
Add to my merge list

Merge of more Opuses #3



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My merge list

Original works (2) Agents (0)

Pincher Martin, 1956 novel.
William Goulding · English · 1956

Pincher Martin
William Goulding · English · 1956

Clear list Merge

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Person

William Goulding

British novelist, poet, playwright and Nobel Prize for Literature laureate

Sir William Gerald Golding, CBE (19 September 1911 – 19 June 1993) was a British novelist, playwright, and poet. Best known for his debut novel Lord of the Flies (1954), he would go on to publish another eleven novels in his lifetime. In 1980, he was awarded the Booker... — Wikipedia

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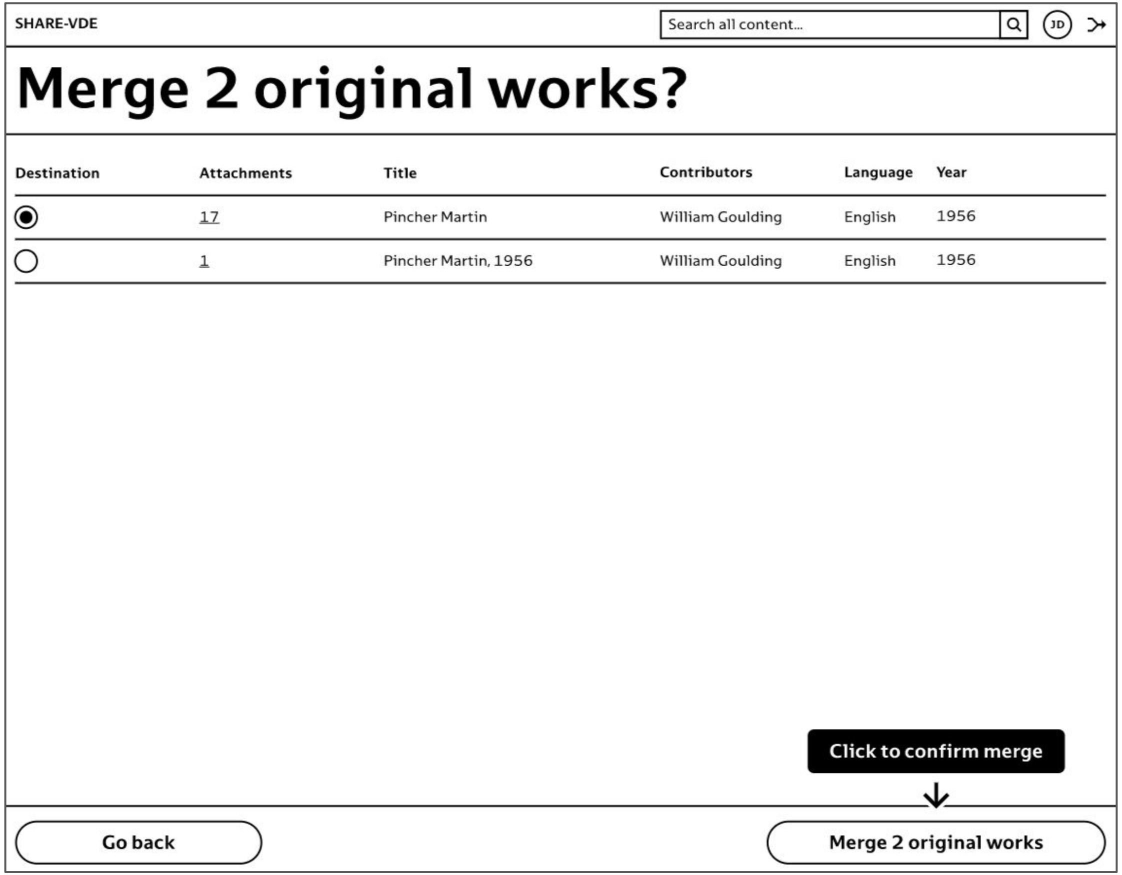
Original works by **Original works about** **Related people**

Filter... Location Language All filters

Publication title	Contributors	Language	Year
☐ Lord of the flies	William Golding	English	1954
☐ Pincher Martin, 1956 novel.	William Goulding	English	1956
☐ Pincher Martin	William Goulding	English	1956

End of list

Merge of more Opuses #4



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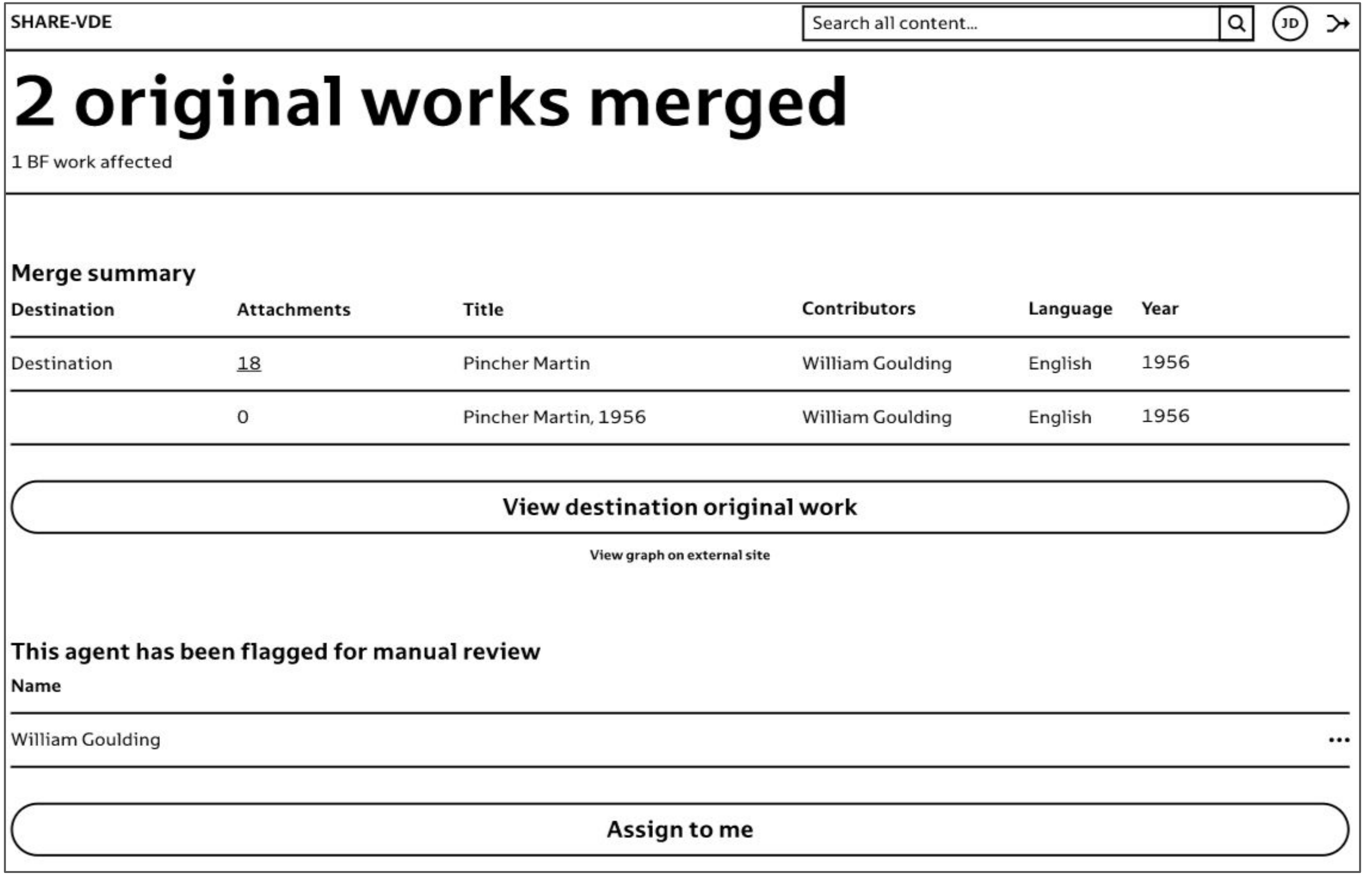
Merge 2 original works?

Destination	Attachments	Title	Contributors	Language	Year
●	17	Pincher Martin	William Goulding	English	1956
○	1	Pincher Martin, 1956	William Goulding	English	1956

Click to confirm merge

Go back
Merge 2 original works

Merge of more Opuses #5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2 original works merged

1 BF work affected

Merge summary

Destination	Attachments	Title	Contributors	Language	Year
Destination	18	Pincher Martin	William Goulding	English	1956
	0	Pincher Martin, 1956	William Goulding	English	1956

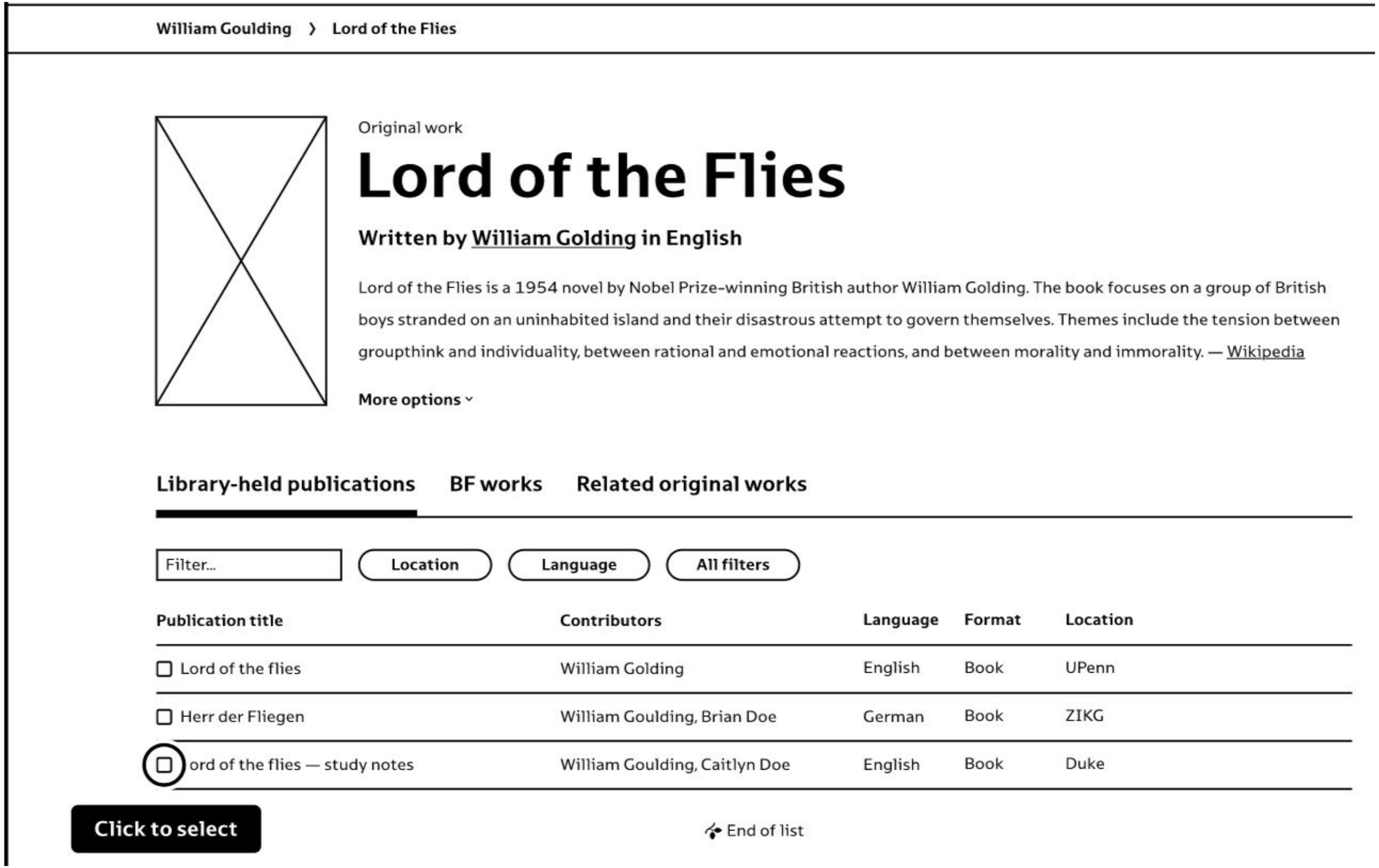
View destination original work
View graph on external site

This agent has been flagged for manual review

Name
William Goulding

•••
Assign to me

Relationship between existing Instance and new Opus



William Goulding › Lord of the Flies

Original work

Lord of the Flies

Written by William Golding in English

Lord of the Flies is a 1954 novel by Nobel Prize-winning British author William Golding. The book focuses on a group of British boys stranded on an uninhabited island and their disastrous attempt to govern themselves. Themes include the tension between groupthink and individuality, between rational and emotional reactions, and between morality and immorality. — Wikipedia

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BF works
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Language
All filters

Publication title	Contributors	Language	Format	Location
☐ Lord of the flies	William Golding	English	Book	UPenn
☐ Herr der Fliegen	William Goulding, Brian Doe	German	Book	ZIKG
☐ ord of the flies — study notes	William Goulding, Caitlyn Doe	English	Book	Duke

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