DSpace Entities

Sep 4th, 2018
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Introduction

• **Original proposal:**
  • [https://docs.google.com/document/d/158OKVGy_fXNHO4K-_OTft1_hi7Zljmb3bUSDKigWoRo](https://docs.google.com/document/d/158OKVGy_fXNHO4K-_OTft1_hi7Zljmb3bUSDKigWoRo)

• **High level specifications:**
  • Avoid hard-coding a particular object model
  • Start from the DSpace Item object
  • Items can be typed, relations can be created
  • Implementation of a data model is configurable
Introduction

• Prototype implementation
  • Documentation
    • https://docs.google.com/document/d/1wEmHirFzrY3qqGtRr2YBQwGOvH1uTVGmxDIdnqywM
  • Code
    • ANGULAR: https://github.com/atmire/dspace-angular/tree/entities
    • REST API: https://github.com/atmire/DSpace/tree/w2p-51058_dspace7-entities
  • Demo server
    • https://dspace7-entities.atmire.com/home
Configuration of the entity types and their relations

• Data model is configurable in XML
• Example relationship Publication and Person:

```xml
<relationships>
  <type>
    <leftType>Publication</leftType>
    <rightType>Person</rightType>
    <leftLabel>isAuthorOfPublication</leftLabel>
    <rightLabel>isPublicationOfAuthor</rightLabel>
    <leftCardinality>
      <min>0</min><!--<max></max> not specified, unlimited-->  
    </leftCardinality>
    <rightCardinality>
      <min>0</min>
    </rightCardinality>
  </type>
</relationships>
```
Configuration of the entity types and their relations

- Documentation: [https://docs.google.com/document/d/1wEmHirFzrY3qgGtRr2YBQwGOvH1luTVGmxDIdnqvwxM#heading=h.46e6ol5ak216](https://docs.google.com/document/d/1wEmHirFzrY3qgGtRr2YBQwGOvH1luTVGmxDIdnqvwxM#heading=h.46e6ol5ak216)

- The XML file to configure the data model can be processed into the database by a script and it will read each relationship in the configuration file.

Database Storage

- Type of entity is stored in the item table.
- New tables:
  - store the relationship configuration: one row per relationship type from the XML
  - store the actual relations, containing a row per relation between two entities.
- Default DSpace database tables have not been modified: entity type is item metadata
- Flyway will create tables to store the entity type and relationship configuration.
Java API

- The implementation only requires classes to:
  - retrieve the relationship schema,
  - identify the entity type of the current item,
  - identify which relations can be created for the current item’s type, and
  - retrieve all current relations of the item

- Docs: https://docs.google.com/document/d/1wEmHirFzrY3qgGtRr2YBQwGOvH1lLuTVGmxDIdnqywvxM/edit#heading=h.pcouajmq04iz
DSpace 7 REST API

- The DSpace REST API has been extended to represent:
  - an Entity Type,
  - a Relationship Type,
  - and a Relationship.
- For these objects, Services have been created to easily create, retrieve, update, delete them.
- Docs: [https://docs.google.com/document/d/1wEmHirFzrY3qqGtRr2YBQwGOvH1luTVGmxDiSnqvwxxM/edit#heading=h.fhfalhjjh1kc](https://docs.google.com/document/d/1wEmHirFzrY3qqGtRr2YBQwGOvH1luTVGmxDiSnqvwxxM/edit#heading=h.fhfalhjjh1kc)
DSpace 7 Angular UI

- Display the relations on item pages
  - The entity type switcher component
  - The entity type decorator
- Custom item pages based on the entity type
  - Modifying the item display fields per entity type is made easy with entity-page-fields.component.ts: contains the common functionality for using entities on an item page.
- Only section where the source code needs has been modified based on the chosen model.
Virtual Metadata

Related entities as relations should not require duplicated storage of metadata.

Populate one entity with the metadata of other entities

Ensure this is available independent of how metadata is retrieved (OAI, SWORD, REST, ...).

Example:

If authors are included using relations to a Person object, the author name can be virtually included as dc.contributor.author.

Docs: https://docs.google.com/document/d/1wEmHirFzrY3qqGtRr2YBQwGOvH1luTVGmxDIdnqvwxM#heading=h.5bo9g6294oai
Configuration of other functionality to support entities

- Search for entity types
  - facet for the different entities
  - option to create separate discovery pages with a predefined filter
- Batch import for entity types
  - entity type is part of metadata
  - has been modified to support importing relations to other entities.
- Submission forms per entity type
- Workflow for entity types
- Community/collection list for entity types
Example Use Case: Journals

- Journal
  - Journal Volume
    - Journal Issue
      - Article
    - Journal Issue
  - Journal Volume
    - Journal Issue
      - Article
Environmental & Architectural Phenomenology

Volumes

- Environmental & Architectural Phenomenology Volume 29 (2018)
- Environmental & Architectural Phenomenology (29)
- Environmental & Architectural Phenomenology Volume 28 (2017)
- Environmental & Architectural Phenomenology (28)

Description

Environmental & Architectural Phenomenology, published two times a year, is a forum and clearing house for research and design that incorporate a qualitative approach to environmental and architectural experience and meaning. One key concern of EAP is design, education, and policy supporting and enhancing natural and built environments that are beautiful, alive, and humane. Realizing that a clear conceptual stance is integral to informed research and design, the editor is most interested in phenomenological approaches but also gives attention to related styles of qualitative research.

Related items: 2 journal volumes
Environmental & Architectural Phenomenology Volume 29 (2018)

Journal
Environmental & Architectural Phenomenology
10839194

Issues
Environmental & Architectural Phenomenology Vol. 29, No. 1
29 - 1

Description
The 29th volume of Environmental & Architectural Phenomenology

Related item: Journal
Related item: Issue in volume
Environmental & Architectural Phenomenology Vol. 29, No. 1

Volume
Environmental & Architectural Phenomenology Volume 29 (2018)
Environmental & Architectural Phenomenology (29)

Articles
TestArticle3
(2018-05-17) DeLanghe, Kristof

Description

Keywords
Environmental psychology
Environmental aspects
Periodicals, Human beings
Effect of environment on Periodicals, Architecture
Periodicals, Architecture
Human factors
Periodicals, Architecture
Psychological aspects
Periodicals, Phenomenology
Periodicals
TestArticle3

Date
2018-05-17

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Software Developer

Org Units
The London Eye
Sed ut perspiciatis unde omnis iste natus error sit voluptatem accusantium doloremque laudantium, totam rem aperiam, eaque ipsa quae ab illo inventore veritatis et quasi architecto.

Journal Issue
Environmental & Architectural Phenomenology Vol. 29, No. 1
29 - 1

Related item: Article in issue
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Publications
- TestTheses1 (2018-05-17) Van de Velde, Kevin Ponsaerts, Raf DeLanghe, Kristof
- TestTheses3 (2018-05-17) Ponsaerts, Raf DeLanghe, Kristof
- TestArticle3 (2018-05-17) DeLanghe, Kristof
- TestBook1 (2018-05-17) Van de Velde, Kevin Ponsaerts, Raf DeLanghe, Kristof
- TestBook3 (2018-05-17) DeLanghe, Kristof Van de Velde, Kevin
- TestArticle2 (2018-05-17) DeLanghe, Kristof Ponsaerts, Raf
- TestArticle1 (2018-05-17) DeLanghe, Kristof

Projects
- Upgrade Parking Lots
  - DELAYED
- First project of the functionality
  - COMPLETED
- TestProject1
  - ONGOING

Org Units
- The London Eye
- Of course, please read the related terms and conditions.
Search Results

Now showing items 1 - 10 of 43

TestArticle2
(2018-05-17) DeLanghe, Kristof Ponsaerts, Raf

TestArticle1
DeLanghe, Kristof Van de Velde, Kevin Ponsaerts, Raf

La Louvre
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TestTheses1
(2018-05-17) Van de Velde, Kevin Ponsaerts, Raf DeLanghe, Kristof

TestBook1
Search Results

Now showing items 1 - 7 of 7

- Environmental & Architectural Phenomenology Vol. 28, No. 2
  28 - 2
- Environmental & Architectural Phenomenology Vol. 29, No. 1
  29 - 1
- Environmental & Architectural Phenomenology Vol. 28, No. 1
  28 - 1
- Editorial, Volume 7, Issue 1
  7 - 1
- Editorial, Volume 7, Issue 2
  7 - 2
Work estimates

• For the generic data model:
  • Designing the model & integration in DSpace 7: already completed
  • Changes to the database (new tables and corresponding Java classes): 1 day
  • Changes to the REST API: 4 days
  • Changes to the Angular UI: 6 days
  • Changes to the submission: 3 days
  • Changes to the batch import: 2 days
Work estimates

• For the CRIS use case:
  • Configuration of entities and relations: 1 day
  • Submission form: 2 days
  • Search config: 2 days
  • Community list config: 1 day
  • Item display config: 3 days
  • (optional) Automatic setup of configs: 8 days

• For the Journal use case:
  • Configuration of entities and relations: 1 day
  • Submission form: 2 days
  • Search config: 2 days
  • Community list config: 1 day
  • Item display config: 3 days
  • (optional) Automatic setup of configs: 8 days