



NIEDERSÄCHSISCHE STAATS- UND
UNIVERSITÄTSBIBLIOTHEK GÖTTINGEN

Dateneingabeformulare für RDF Daten auf Basis von SHACL/DASH

Max-Ferdinand Zeterberg

KIM Workshop 2021

27. April 2021



GEORG-AUGUST-UNIVERSITÄT
GÖTTINGEN

Ausgangspunkt und Ziel

- Problemstellung: Erfassung von RDF Daten (z. B. Personen, Orte, Ereignisse)
- Bisher: Formularanwendungen spezifisch für jedes Projekt
- Ziel: Generische Anwendung für Formulare und Validierung

SHACL und DASH

- Shapes Constraint Language: W3C-Spezifikation zur Validierung von RDF-Daten
- Data Shapes: Erweiterung für SHACL die Shapes zur Beschreibung von Formularen bietet

Beispiel: Person (Wörterbuch des klassischen Maya)

```
<idiom:EpigraphicActor rdf:about="http://textgridrep.de/255jb">
  <idiom:prefActorAppellation>
    <idiom:prefActorAppellation rdf:about="http://idiom-projekt.de/schema/
prefActorAppellation151212f85b17c">
      <idiom:actorName>Lady Jaguar Seat</idiom:actorName>
      <dct:isReferencedBy>
        <dct:isReferencedBy rdf:about="http://purl.org/dc/terms#isReferencedBy15150309431D1">
          <schema:pagination>II-54</schema:pagination>
          <dct:bibliographicCitation>Grube, Nikolai, Simon Martin (2000): Notebook for the XXIVth Maya
Hieroglyphic Forum at Texas, March 2000: Tikal and Its Neighbors.</dct:bibliographicCitation>
          <idiom:zoteroURI>https://www.zotero.org/idiom_bibliography/items/KETII9WI</idiom:zoteroURI>
        </dct:isReferencedBy>
      </dct:isReferencedBy>
      <idiom:status>Finished</idiom:status>
    </idiom:prefActorAppellation>
  </idiom:prefActorAppellation>
  <rel:siblingOf>
    <rel:siblingOf rdf:about="http://purl.org/vocab/relationship/siblingOf1775dbc7745Pg">
      <idiom:relationshipSibling rdf:resource="http://textgridrep.de/2t2k4"/>
    </rel:siblingOf>
  </rel:siblingOf>
  <idiom:status>Finished</idiom:status>
</idiom:EpigraphicActor>
```

Anforderungen an das Formular

- Verschiedene Arten von Eingabefeldern: Auswahlliste, Textfeld, Verknüpfung mit anderen Daten
- Geschachtelte Formulare
- Wiederverwendung von Formularfeldern

Beispiel: NodeShape

```
idiomshapes:EpigraphicActorShape
  a sh:NodeShape ;
  rdfs:label "Epigraphic Actor Shape" ;
  sh:targetClass idiom:EpigraphicActor ;
  tgforms:FormNode true ;
  sh:property idiomshapes:statusShape ,
              idiomshapes:prefActorAppellationShape ,
              idiomshapes:siblingOfShape .
```

Beispiel: Auswahlliste

```
idiomshapes:statusShape
  a sh:PropertyShape ;
  sh:path idiom:status ;
  sh:datatype xsd:string ;
  sh:description "state of the current editing process" ;
  sh:in ( "Finished" "Review Needed" "Work in Progress" ) ;
  sh:minCount 1 ;
  sh:maxCount 1 ;
  sh:name "Status" ;
  sh:order "0"^^xsd:decimal .
```

Beispiel: Verknüpfung interne Daten und Schachtelung

```
idiomshapes:siblingOfShape
  a sh:PropertyShape ;
  sh:path rel:siblingOf ;
  sh:name "Sibling" ;
  dash:editor dash:DetailsEditor ;
  sh:node idiomshapes:SiblingNodeShape ;
  sh:class idiom:Sibling ;
  sh:nodeKind sh:BlankNode ;
  sh:order "54"^^xsd:decimal .

idiomshapes:SiblingNodeShape
  a sh:NodeShape ;
  rdfs:label "Sibling Node Shape" ;
  sh:targetClass idiom:Sibling ;
  sh:name "Sibling" ;
  sh:property idiomshapes:sourceSiblingShape ,
             idiomshapes:relationshipSiblingShape .

> idiomshapes:sourceSiblingShape ...
idiomshapes:relationshipSiblingShape
  a sh:PropertyShape ;
  sh:path idiom:relationshipSibling ;
  sh:class idiom:EpigraphicActor ;
  sh:node idiomshapes:EpigraphicActorShape ;
  dash:editor dash:AutoCompleteEditor ;
  dash:singleline true ;
  sh:nodeKind sh:IRI ;
  sh:description "Please relate another Epigraphic Actor who is a sibling of the described person." ;
  sh:maxCount 1 ;
  sh:name "Epigraphic Actor" ;
  sh:order "92"^^xsd:decimal .
```


Beispiel: Textfeld und wiederverwendete Formularfelder

```
idiomshapes:prefActorAppellationShape
  a sh:PropertyShape ;
  sh:path idiom:prefActorAppellation ;
  sh:description "The preferred name of an actor" ;
  sh:name "Preferred Actor Appellation" ;
  dash:editor dash:DetailsEditor ;
  sh:node idiomshapes:ActorAppellationNodeShape ;
  sh:class CRM:ActorAppellation ;
  sh:nodeKind sh:BlankNode ;
  sh:maxCount 1 ;
  sh:order "1"^^xsd:decimal .

idiomshapes:ActorAppellationNodeShape
  a sh:NodeShape ;
  rdfs:label "Actor Appellation Node Shape" ;
  sh:targetClass CRM:ActorAppellation ;
  sh:name "Actor Appellation" ;
  sh:property idiomshapes:statusShape ,
              idiomshapes:actorNameShape ,
              idiomshapes:isReferencedByShape .

idiomshapes:actorNameShape
  a sh:PropertyShape ;
  sh:path idiom:actorName ;
  dash:editor dash:TextFieldEditor ;
  dash:singleLine true ;
  sh:datatype xsd:string ;
  sh:minCount 1 ;
  sh:maxCount 1 ;
  sh:name "Name" ;
  sh:description "The name of the described actor." ;
  sh:order "11"^^xsd:decimal .
```

Beispiel: Verknüpfung mit externen Daten

```
idiomshapes:isReferencedByShape
  a sh:PropertyShape ;
  sh:path dct:isReferencedBy ;
  sh:name "Source" ;
  dash:editor dash:DetailsEditor ;
  sh:node idiomshapes:SourceNodeShape ;
  sh:class idiom:Source ;
  sh:nodeKind sh:BlankNode ;
  sh:order "90"^^xsd:decimal .

idiomshapes:SourceNodeShape
  a sh:NodeShape ;
  rdfs:label "Source Node Shape" ;
  sh:name "Source" ;
  sh:targetClass idiom:Source ;
  sh:property idiomshapes:bibliographicCitationShape ,
              idiomshapes:paginationShape ,
              idiomshapes:attributionTypeShape ,
              idiomshapes:hasconfidenceLevelShape ,
              idiomshapes:zoteroURIShape .

> idiomshapes:bibliographicCitationShape ...
> idiomshapes:paginationShape ...
> idiomshapes:attributionTypeShape ...
> idiomshapes:hasconfidenceLevelShape ...
idiomshapes:zoteroURIShape
  a sh:PropertyShape ;
  sh:path idiom:zoteroURI ,
  dash:editor [
    a tgforms:SelectInstanceFromRemoteDatasetEditor ;
    tgforms:useOpenSearchDescription "https://example.com/opensearch_zotero.osxml" ;
  ] ;
  sh:nodeKind sh:IRI ;
  sh:name "Zotero URI" ;
  sh:order "11"^^xsd:decimal .
```

Beispiel: Verknüpfung mit externen Daten II

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <OpenSearchDescription xmlns="http://a9.com/-/spec/opensearch/1.1/">
3   <ShortName>Zotero Search</ShortName>
4   <Description>Searching the KMG Zotero Library</Description>
5   <Tags>Zotero</Tags>
6   <Contact>zeterberg@sub.uni-goettingen.de</Contact>
7   <Url type="application/atom+xml"
8     template="https://api.zotero.org/groups/2206325/items?format=atom&
9     v=3&key={authenticationKey}&q={searchTerms}"/>
</OpenSearchDescription>
```

Formularanwendung

Choose Object Class Open Save Delete

You are editing the object: subform:27410533173667F
with the type: idiomshapes:EpigraphicActorShape

Epigraphic Actor

Status * ⓘ Finished ▾

Preferred Actor Appellation ⓘ * ⓘ
idiom:preferredActorAppellation178ead610feM4 Choose Remove ▾

Actor Appellation

Status * ⓘ ▾

Name * ⓘ
Lady Jaguar Seat

Name Type + ▾

Activity associated with Naming ⓘ + ⓘ
Choose Remove

Source ⓘ + ⓘ
idiom:source178ead6bdec1A Choose Remove ▾

Source ⓘ + - ⓘ
idiom:source178ead785b6ZA Choose Remove ▾

Description + ⓘ

Comment + ⓘ

SUB

NIEDERSÄCHSISCHE STAATS- UND
UNIVERSITÄTSBIBLIOTHEK GÖTTINGEN

Vielen Dank für Ihre Aufmerksamkeit



GEORG-AUGUST-UNIVERSITÄT
GÖTTINGEN