Knowledge Graph: Rijksmuseum Data

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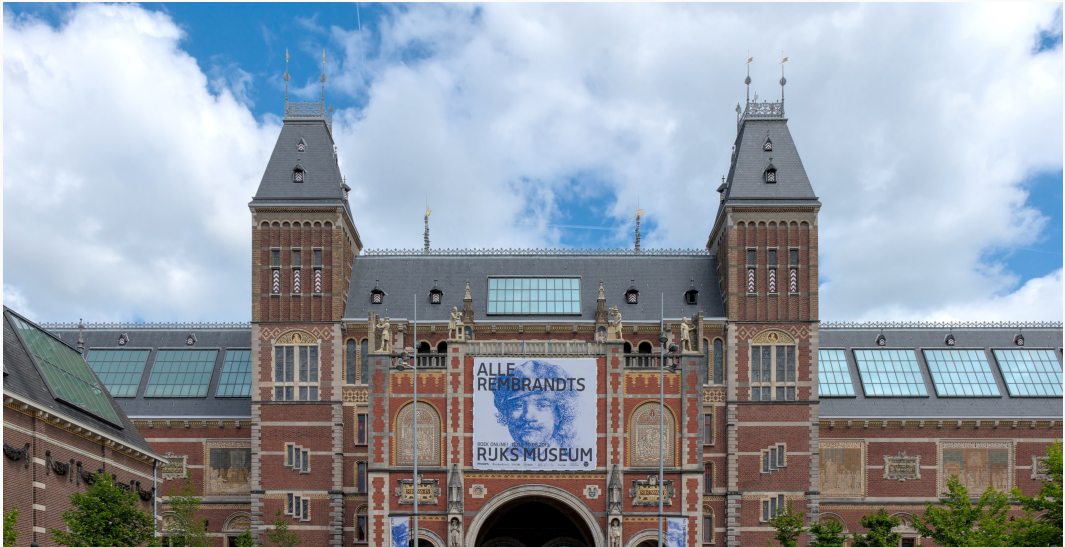


1. Data Set

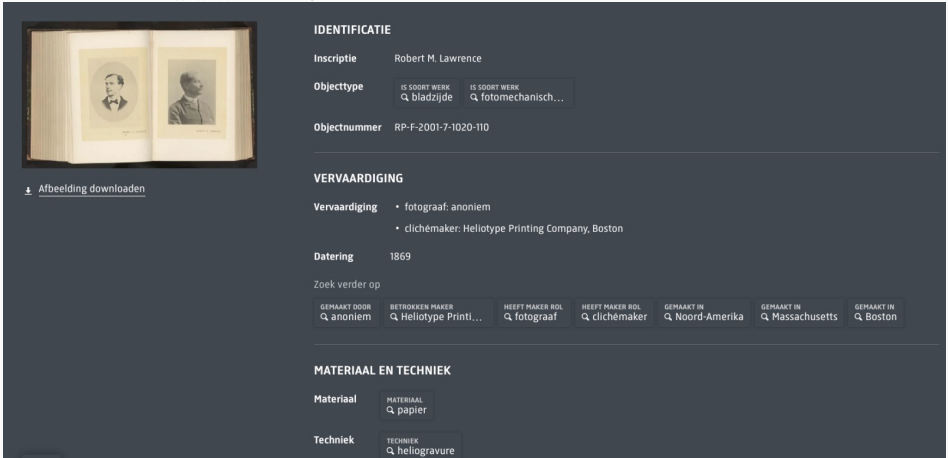
Source

- **Rijksmuseum Data Dumps**
  Historical Dumps
- The Rijksmuseum is the national museum of the Netherlands established in 1800 and is located in Amsterdam. It moves you through more than 8,000 works of Dutch art and history including masterpieces by Vermeer, Rembrandt, and Van Gogh.
- The dataset utilized in this project is provided by the Rijksmuseum as part of their open data initiative.

1. Data Set [2]

Dataset Information

- **Dataset**: LIDO dataset (`202020-rma-lido-collection.zip`)
  - **Size**: 11.6 GB ### Example record



1. Data Set [3]

Subset

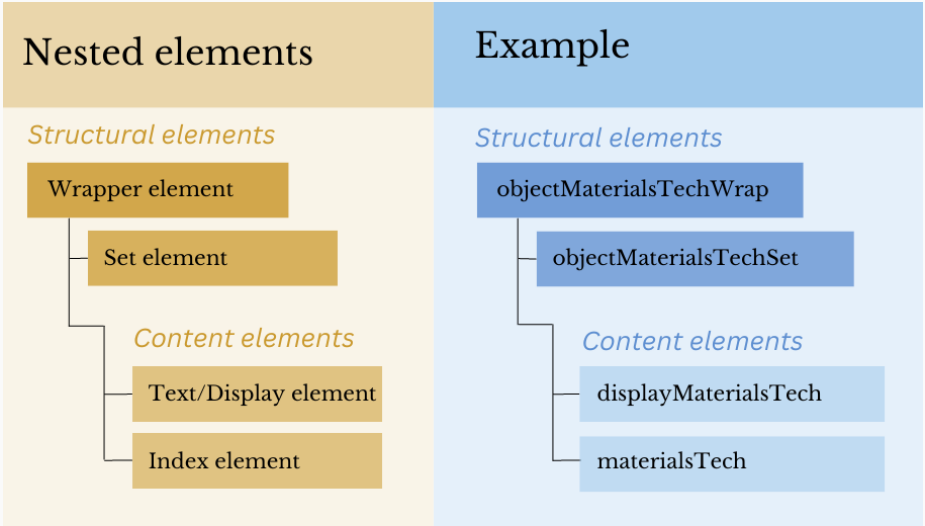
Query Subset: Photo Print Subset
- **Size**: 454 MB
- **Details**: Contains over 100+ LIDO classes
- **Mapping Fields**: - Inventory - Title - Creator - Inception - Material

2. LIDO (Lightweight Information Describing Objects)

- XML-based metadata schema
- Describing and sharing cultural heritage objects
- Used by museums, galleries, and cultural institutions
- Standardize object metadata and facilitate interoperability across platforms
- Its alignment with Linked Open Data principles enhances accessibility and connectivity

2. LIDO (Lightweight Information Describing Objects) [2]

- LIDO organizes data into structured classes



3. Wikibase

- Wikibase is an open-source platform for managing structured data, widely used for collaborative knowledge sharing (e.g., Wikidata)
- **Instance Creation**: Deploy on a server or use a cloud solution; configure structure and import data
- **Properties**: Define attributes and relationships between entities (e.g., “creator,” “inception date”)
- **JSON** : Native format for data storage, API interactions, and import/export, ensuring compatibility with Linked Open Data standards

4. Tools and Technologies

Preprocessing

- The XML data from the LIDO dataset was **converted to JSON** for easier and more flexible processing in subsequent steps

Data Integration

- **Wikibase cloud**
- **Wikidata**
- **Pywikibot**

5. Workflow Overview

- Data Extraction
- Data Transformation
- Metadata(Property) Mapping

Entities	Wikibase (our Instance)	Wikidata	Datatype
Inventory Number	P1	P217	String
Title	P2	P1476	Monolingualtext
Creator	P3	P170	Wikibase-item
Inception	P4	P571	Point in Time
Material	P5	P186	Wikibase-item

- Data Integration

6. Implementation

7. Challenges

- Large data size
- Highly nested data structure
- Ambigious data types
- Data extraction errors

8. Future Work

- Expanding the subset
- Try to import the photos

9. References

- Wikibase Documentation
- Pywikibot Manual
- ICOM International Committee for Documentation, What is LIDO?

Thank You!

Questions?