# Assignment 2

# Book Search Application

**Group 12**

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# Ontology Design

## Follow Knowledge Engineering Methodology

- Six-stage process:
    - Definition of the domain, purpose and scope of ontology
    - Acquisition and conceptualization of the domain knowledge
    - Reusing of existing ontologies
    - Formal specification of the ontology
    - Population of the ontology with individual instances
    - Evaluation and documentation

- **Definition of the domain, purpose and scope of ontology**
  - Domain: Book
  - Purpose:
    - A search book website
    - Support search by author, category, …
  - Scope:
    - Covers a certain number of books in a number of topics in many different languages

Note: We tried to find documents related to book hierarchy, but there was no standard design. So, we define ourselves from our perspective

- **Acquisition and conceptualization of the domain knowledge:**
  - Classes:
    - Book, Author, Publisher, Language
    - Book has multiple categories
    - Category has multiple topics
  - Object Properties:
    - Book :hasAuthor Author >< Author :isAuthorOf Book
    - Book :hasPublisher Publisher >< Publisher :isPublisherOf Book
    - Book :hasLanguage Language
  - Data Properties:
    - Domain Book: hasTitle, hasId, hasTag, hasSize, hasRate, hasPublishYear, hasNumberPage, hasExtension, hasDescription
    - Domain Publisher: publisherHasName
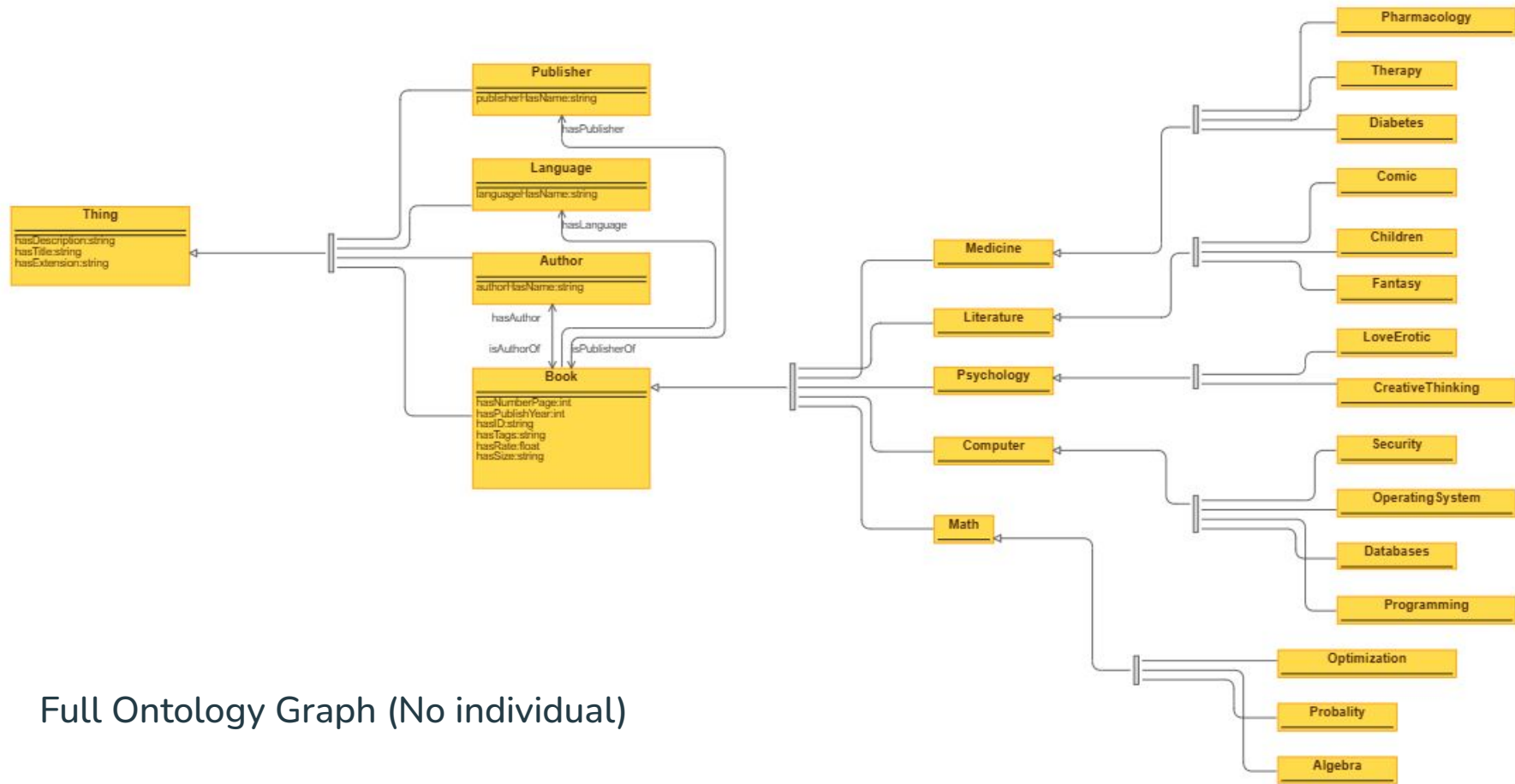    - Domain Author: authorHasName

- **Reusing of existing ontologies**

    No

- **Formal specification of the ontology**
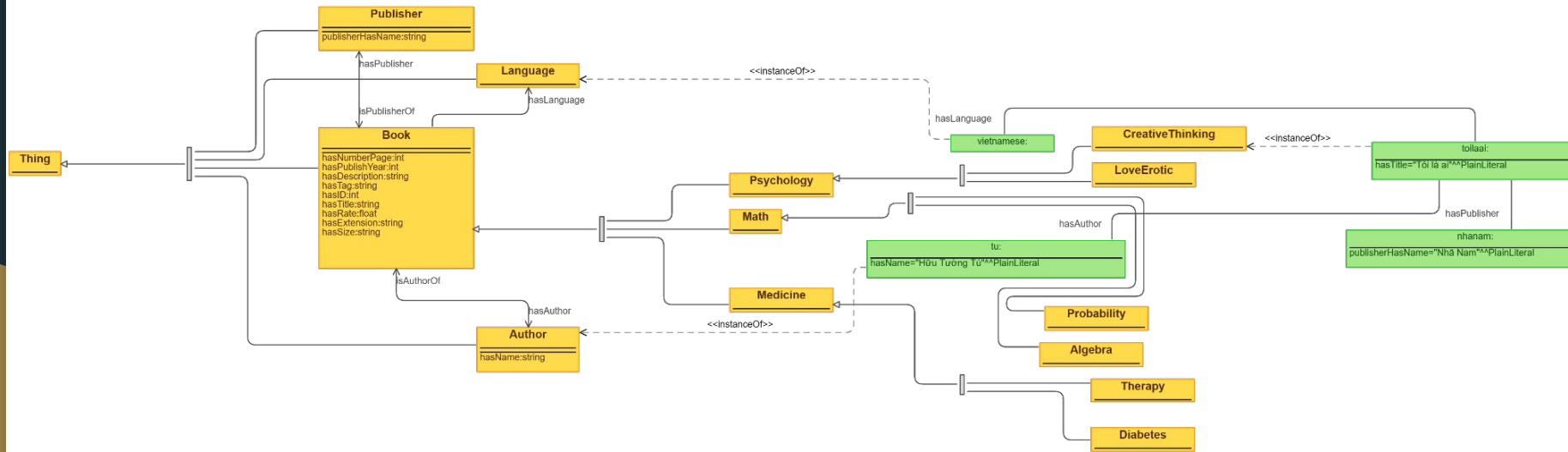
    - Use protégé

    - OWL format

- **Population of the ontology with individual instances**

    - Resource: [Library Genesis (libgen.is)](libgen.is)

- **Evaluation and documentation**

Full Ontology Graph (No individual)

Ontology Graph with Individuals

# Demo



**Book Search Application**

| Quick Search | Advanced Search | ▷ Semantic Search |

Describe the book you want to find

I'm looking for a Comic book, 300 pages, in English and published in 2024, and don't need anything more.

Search

| | ID | Author | Title | Description | Publisher | Publish Yea | Number Pag | Langu |
|---|---|---|---|---|---|---|---|---|
| 0 | 4238700 | [Bisette,Vincent,Van Der Post,Hay | NextGen Algorithmic Trading Stra | Absolutely lets draft a compelling synopsis that reflects the cuttinge | Reactive Publishing | 2024 | 339 | Englis |
| 1 | 4218278 | [Mladjenovic,Paul] | AI Investing For Dummies | Winning strategies for investors looking to boost gains with artificial | Wiley | 2024 | 307 | Englis |
| 2 | 4233704 | [Bisette,Vincent,Van Der Post,Hay | Options Finance Options Stratigie | Unlock the Power of Python in Options Trading Master Strategies to | Reactive Publishing | 2024 | 333 | Englis |
| 3 | 4232464 | [Gargi Sanati] | International Trade Finance and I | This book bridges the existing gap between the theory and practices | nan | 2024 | 274 | Englis |