

**AYDIN ADNAN MENDERES UNIVERSITY  
ENGINEERING FACULTY  
COMPUTER ENGINEERING DEPARTMENT**

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Supervisor:  
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**Assignment#4**

**LIBRARY ONTOLOGY**

**Questions**

1) Which book belongs to which type of book?

The screenshot shows a web browser window titled "library-ontology (http://www.semanticweb.org/ek13/ontologies/2022/0/library-ontology)". The browser address bar shows the URL. The page has a menu bar with "File", "Edit", "View", "Reasoner", "Tools", "Refactor", "Window", and "Help". Below the menu bar is a search bar labeled "Search for entity". The main content area has a tabbed interface with tabs for "Active Ontology", "Entities", "Classes", "Object Properties", "Data Properties", "Annotation Properties", "Individuals", "OWL Viz", "DL Query", "OntoGraf", "Ontology Differences", and "SPARQL Query". The "SPARQL Query" tab is active, showing a SPARQL query:

```
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX : <http://www.semanticweb.org/ek13/ontologies/2022/0/library-ontology#>
SELECT ?book ?type
WHERE { ?book :genre ?type }
```

Below the query, there is a table with two columns: "book" and "type". The table contains the following data:

book	type
Kurgu	"Others"^^<http://www.w3.org/2001/XMLSchema#string>
PicturePerfect	"Others"^^<http://www.w3.org/2001/XMLSchema#string>
Algebra:CompleteIntroduction	"Algebra"^^<http://www.w3.org/2001/XMLSchema#string>
TheLittleBookofHumanism	"Humanism"^^<http://www.w3.org/2001/XMLSchema#string>
Kurgu2	"Others"^^<http://www.w3.org/2001/XMLSchema#string>
ThePinkRose	"Others"^^<http://www.w3.org/2001/XMLSchema#string>
InceMemed	"Turkish_Literature"^^<http://www.w3.org/2001/XMLSchema#string>

At the bottom of the table, there is an "Execute" button. At the very bottom of the browser window, there is a status bar that says "No Reasoner set. Select a reasoner from the Reasoner menu" and a checkbox labeled "Show Inferences" which is checked.

2) Which author wrote which book?

library-ontology (http://www.semanticweb.org/ek13/ontologies/2022/0/library-ontology) : [C:\Users\USER\Desktop\libraryontology2.owl]

File Edit View Reasoner Tools Refactor Window Help

library-ontology (http://www.semanticweb.org/ek13/ontologies/2022/0/library-ontology)

Active Ontology Entities Classes Object Properties Data Properties Annotation Properties Individuals OWL Viz DL Query OntoGraf Ontology Differences SPARQL Query

SPARQL query:

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PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX <http://www.semanticweb.org/ek13/ontologies/2022/0/library-ontology#>
SELECT ?author ?book
WHERE { ?author :writes ?book }
```

author	book
Yaşar_Kemal	InceMemed
Alice_Roberts	ThePinkRose
Alice_Roberts	TheLittleBookofHumanism
Alice_Roberts	PicturePerfect
Hugh_Neill	Algebra:CompleteIntroduction

Execute

No Reasoner set. Select a reasoner from the Reasoner menu ☒ Show Inferences

3) Who organizes the books?

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PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX <http://www.semanticweb.org/ek13/ontologies/2022/0/library-ontology#>
SELECT ?x ?book
WHERE { ?x :keeps_track_of ?book }
```

x	book
Nagihan_Baz	Book

Execute

No Reasoner set. Select a reasoner from the Reasoner menu ☒ Show Inferences

4) Is there a device that users can use?

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PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX : <http://www.semanticweb.org/ek13/ontologies/2022/0/library-ontology#>
SELECT ?user ?device
WHERE { ?user :use ?device }
```

user	device
Nagihan_Baz	Computer
Elize_H	Computer

Execute

No Reasoner set. Select a reasoner from the Reasoner menu ☒ Show Inferences

5) How many series of books are there?

library-ontology (http://www.semanticweb.org/ek13/ontologies/2022/0/library-ontology) : [C:\Users\USER\Desktop\libraryontology2.owl]

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PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX : <http://www.semanticweb.org/ek13/ontologies/2022/0/library-ontology#>
SELECT ?x ?y
WHERE { ?x :sequel_of ?y }
```

x	y
Kurgu2	Kurgu
Kurgu3	Kurgu2
PicturePerfect	ThePinkRose

Execute

No Reasoner set. Select a reasoner from the Reasoner menu ☒ Show Inferences

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PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX <http://www.semanticweb.org/ek13/ontologies/2022/0/library-ontology#>
SELECT ?x (COUNT(?a) as ?b)
WHERE { ?x :sequel_of ?a }
group by ?x
having(?b)
```

x	b
Kurgu2	"1"^^<http://www.w3.org/2001/XMLSchema#integer>
Kurgu3	"1"^^<http://www.w3.org/2001/XMLSchema#integer>
PicturePerfect	"1"^^<http://www.w3.org/2001/XMLSchema#integer>

Execute

No Reasoner set. Select a reasoner from the Reasoner menu ☒ Show Inferences

6) Which writers were born in England?

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PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX <http://www.semanticweb.org/ek13/ontologies/2022/0/library-ontology#>
SELECT ?author
WHERE { ?author :wasBorn:England }
```

author
Hugh_Neill
Alice_Roberts

Execute

No Reasoner set. Select a reasoner from the Reasoner menu ☒ Show Inferences