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ONTOLOGY BASED APPROACH FOR ONLINE CUSTOMERS REVIEWS ANALYSIS



Search. . .

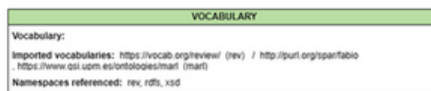
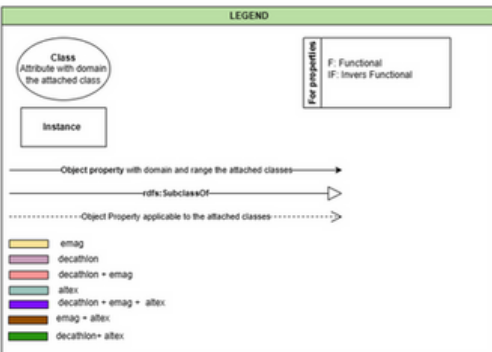
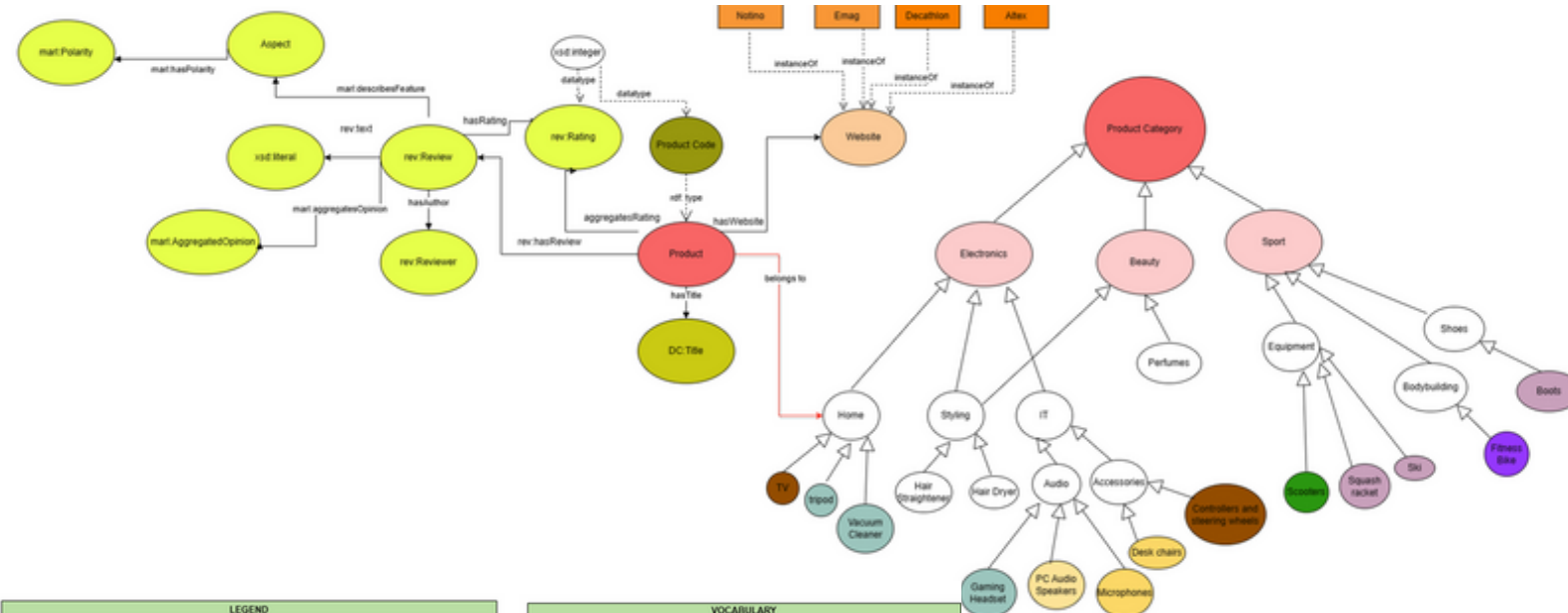


Proiect Semantic Web – Etapa 2
Nume: Gheorghe Alina
Grupa: ISI

http://www.semanticweb.org/alina/ontologies/2023/3/reviews_ontology#

...

Diagrama Ontologiei



Modelarea Ontologiei – Protege

The screenshot displays the Protege ontology editor interface for the 'reviews_ontology' project. The interface is divided into several panes:

- Left Pane (Class Hierarchy):** Shows the hierarchy of classes under 'owl:Thing'. The 'Product' class is highlighted, showing its subclasses: 'Beauty', 'Electronics', 'Home', 'IT', and 'Sport'. Each of these has further subclasses, such as 'Perfumes', 'TV', 'VacuumCleaner', 'Accessories', 'ControllerAndSteeringWheel', 'DeskChair', 'Audio', 'GamingHeadset', 'Microphone', 'PCAudioSpeakers', 'Bodybuilding', 'FitnessBike', 'Equipment', 'Scooter', 'Ski', 'SquashRacket', 'Shoes', 'Boots', and 'Ski'.
- Right Pane (Property Hierarchy):** Shows the hierarchy of properties under 'owl:topObjectProperty'. The 'belongsTo' property is highlighted, showing its subproperties: 'aggregatesOpinion', 'aggregatesRating', 'describesFeature', 'hasAuthor', 'hasPolarity', 'hasRating', 'hasTitle', 'hasWebsite', 'rev:hasReview', and 'rev:text (rev:text)'.
- Bottom Pane (Description: Product):** Shows the description of the 'Product' class, including its instances: 'Product105926', 'Product105930', 'Product105931', 'Product10756962', 'Product114026', 'Product114079', 'Product114494', 'Product114501', 'Product114510', 'Product114541', 'Product114818', 'Product114836', and 'Product114842'.

The interface also includes a search bar at the top right, a toolbar with various icons, and a status bar at the bottom indicating 'Git: master' and 'To use the reasoner click Reasoner >'.

Vocabularul

```
@prefix : <http://www.semanticweb.org/alina/ontologies/2023/3/reviews_ontology#> .
@prefix dc: <http://purl.org/dc/terms> .
@prefix owl: <http://www.w3.org/2002/07/owl#> .
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix rev: <http://purl.org/stuff/rev#> .
@prefix xml: <http://www.w3.org/XML/1998/namespace> .
@prefix xsd: <http://www.w3.org/2001/XMLSchema#> .
@prefix foaf: <http://xmlns.com/foaf/0.1/> .
@prefix marl: <http://www.gsi.upm.es/ontologies/marl/ns#> .
@prefix rdfs: <http://www.w3.org/2000/01/rdf-schema#> .
@base <http://www.semanticweb.org/alina/ontologies/2023/3/reviews_ontology> .

<http://www.semanticweb.org/alina/ontologies/2023/3/reviews_ontology> rdf:type owl:Ontology ;
                                                                    owl:versionIRI <http://www.semanticweb.org/alina/ontologies/2023/3/reviews_ontology/1.0.0> .

#####
#   Annotation properties
#####

### http://www.semanticweb.org/alina/ontologies/2023/3/reviews_ontology#aggregatesOpinion
:aggregatesOpinion rdf:type owl:AnnotationProperty .

### http://www.semanticweb.org/alina/ontologies/2023/3/reviews_ontology#hasReview
:hasReview rdf:type owl:AnnotationProperty .
```



Statistici : toate tripletele × :Website × :Product × :Review × Statistici: toti indivizii × Statistici: toate clasele × Statistici: toatele clasele din... ×

Statistici: Review-uri negativ... × Statistici: Review-uri Neutre × Statistici: Review-uri pozitive × Produse Altex × Produse cu rating < 3 × ⊕

```
1 PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
2 PREFIX owl: <http://www.w3.org/2002/07/owl#>
3 select * where {
4     ?s rdf:type owl:NamedIndividual .
5 }
6
```

36,874

Numărul total de triplete
⚠ Showing results from 1 to 1,000 of 36,874.

4,804

Numărul total de instanțe
⚠ Showing results from 1 to 1,000 of 4,804.

33

Numărul total de clase
⚠ Showing results from 1 to 33 of 33.



Backend Scraping

Python - Scrapy



Altex



Emag



Decathlon

Demo Interogări

SPARQL Query & Update

Edi sw_project_reviews ts only en

Statistici: toate tripletele x :Website x :Product x :Review x Statistici: toti indivizii x Statistici: toate clasele x Statistici: toatele clasele din... x

Statistici: Review-uri negativ... x Statistici: Review-uri Neutre x Statistici: Review-uri pozitive x Produse Altex x Produse cu rating < 3 x +

```
1 PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
2 PREFIX : <http://www.semanticweb.org/alina/ontologies/2023/3/reviews_ontology#>
3 select * where {
4   ?s rdf:type :Product ;
5     :aggregatesRating ?r .
6   FILTER(?r <= 3)
7 }
8
```



Run

keyboard shortcuts

Table Raw Response Pivot Table Google Chart

Download as

Filter query results

Showing results from 1 to 7 of 7. Query took 0.1s, today at 21:59.

	s	r
1	:Product299041	"2.0"xsd:decimal
2	:Product260192	"2.3333333333333335"xsd:decimal
3	:Product204252	"2.8"xsd:decimal

Demo Interogări

Statistici: Review-uri negativ...

×

Statistici: Review-uri Neutre

×

Statistici: Review-uri pozitive

×

Produse Altex

×

Produse cu rating < 3

×

+

1

PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>

2

PREFIX owl: <http://www.w3.org/2002/07/owl#>

3

PREFIX rev: <http://purl.org/stuff/rev#>

4

PREFIX : <http://www.semanticweb.org/alina/ontologies/2023/3/reviews_ontology#>

5

PREFIX marl: <http://www.gsi.upm.es/ontologies/marl/ns#>

6

select * where {

7

?s rdf:type rev:Review ;

8

:aggregatesOpinion marl:Positive .

9

}

10

Save

Folder

Link

Next

Network

Run

keyboard shortcuts

Table

Raw Response

Pivot Table

Google Chart

Download as

▼

◀

1

2

3

4

▶

Filter query results

⚠ Showing results from 1 to 1,000 of 3,677. Query took 0.1s, today at 22:01.

s

⌵

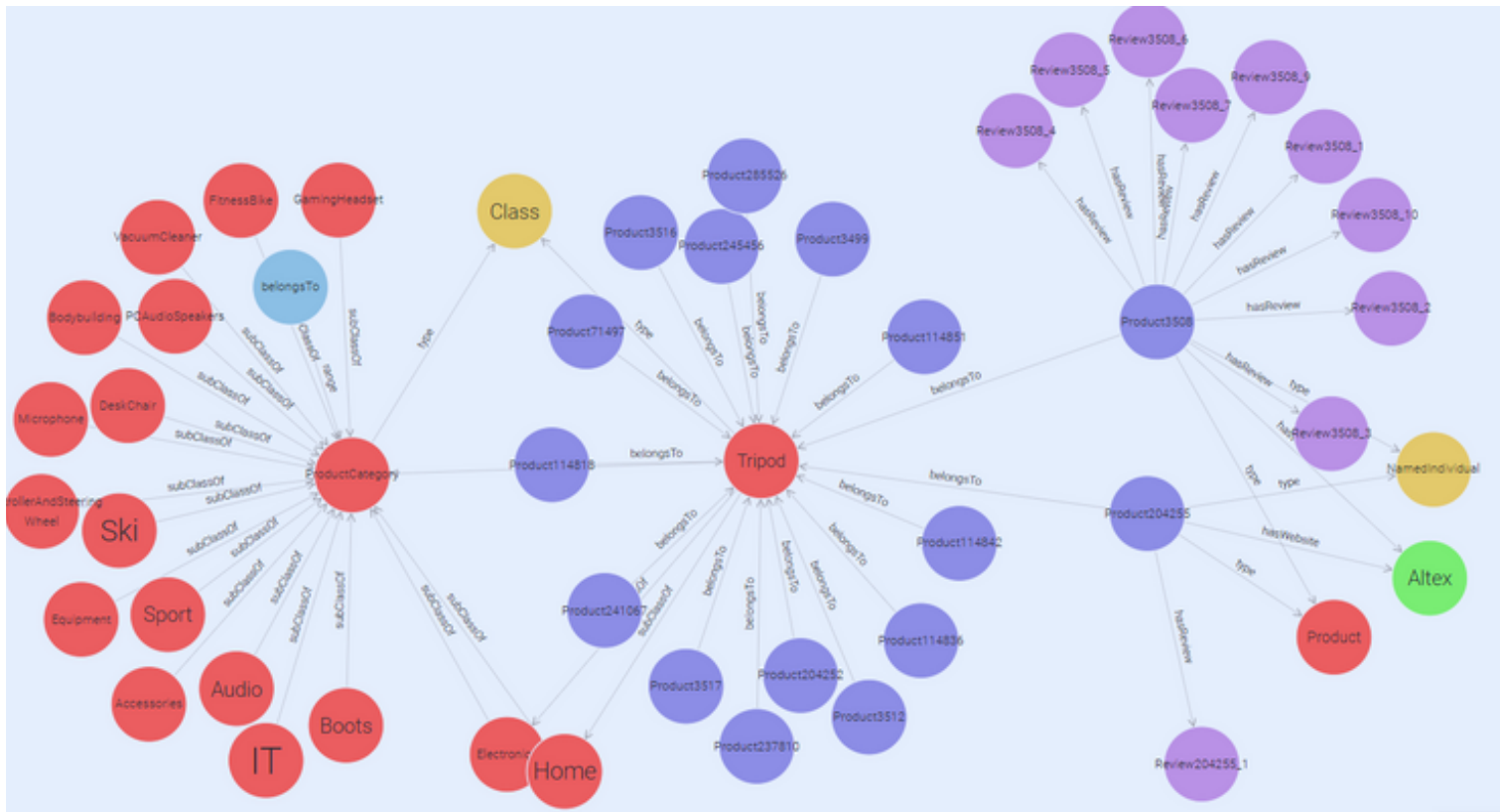
1

.Review105926_1

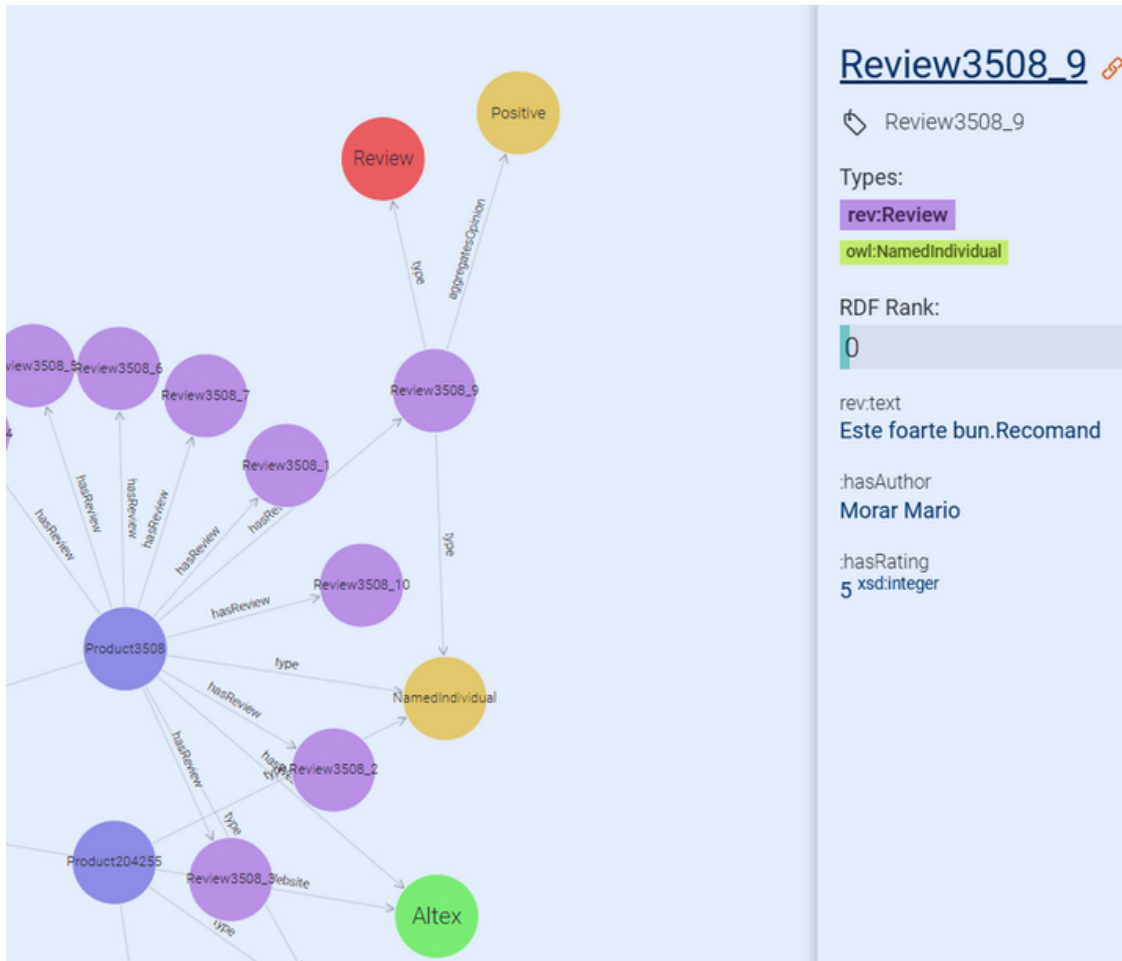
2

.Review105926_10

Vizualizare Graf



Vizualizare Graf



PROBLEME ÎNTÂMPINATE

```
graph TD; A[Scraping diferit pentru site-uri (javascript)] --> B[Obținerea unui număr limitat de review-uri]; B --> C[Număr redus de review-uri în limba română pe Decathlon]; C --> D[Importul unui număr mare de triplete în Protege]; D --> E[Alinierea categoriilor între surse distincte]; E --> F[Găsirea de review-uri negative]; F --> A;
```

Scraping diferit pentru site-uri (javascript)

Obținerea unui număr limitat de review-uri

Număr redus de review-uri în limba română pe Decathlon

Importul unui număr mare de triplete în Protege

Va urma...

Alinierea categoriilor între surse distincte

Găsirea de review-uri negative

