Computer Engineering and
Software Systems department,

Faculty of engineering,
Ain Shams University

CSE488

"Ontologies and Semantic Web"

Pokémon Ontology

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Contents

Briefing:

The Pokémon franchise, created by Satoshi Tajiri and Ken Sugimori, has become a global phenomenon since its inception in 1996. With its iconic characters and imaginative world, Pokémon has captured the hearts of millions of fans worldwide. As the franchise evolved and expanded across various media, including video games, trading card games, TV shows, movies, and more, the need for a structured representation of Pokémon-related information became evident. This led to the development of the Pokémon Ontology, a formalized knowledge representation of the Pokémon universe.

The Pokémon Ontology serves as a comprehensive framework for organizing and categorizing various aspects of the Pokémon world. It captures not only information about individual Pokemon species, but also their characteristics, types, abilities, moves, evolutions, and relationships with other Pokemon. Additionally, it encompasses details about the in-game regions, trainers, items, game mechanics, and other relevant elements that shape the Pokemon experience.

By leveraging the power of ontologies, the Pokemon Ontology enables researchers, developers, and enthusiasts to analyze, query, and reason about Pokemon-related data in a structured manner. It provides a common vocabulary and set of relationships that facilitate interoperability and knowledge sharing across different Pokemon-related applications and domains.

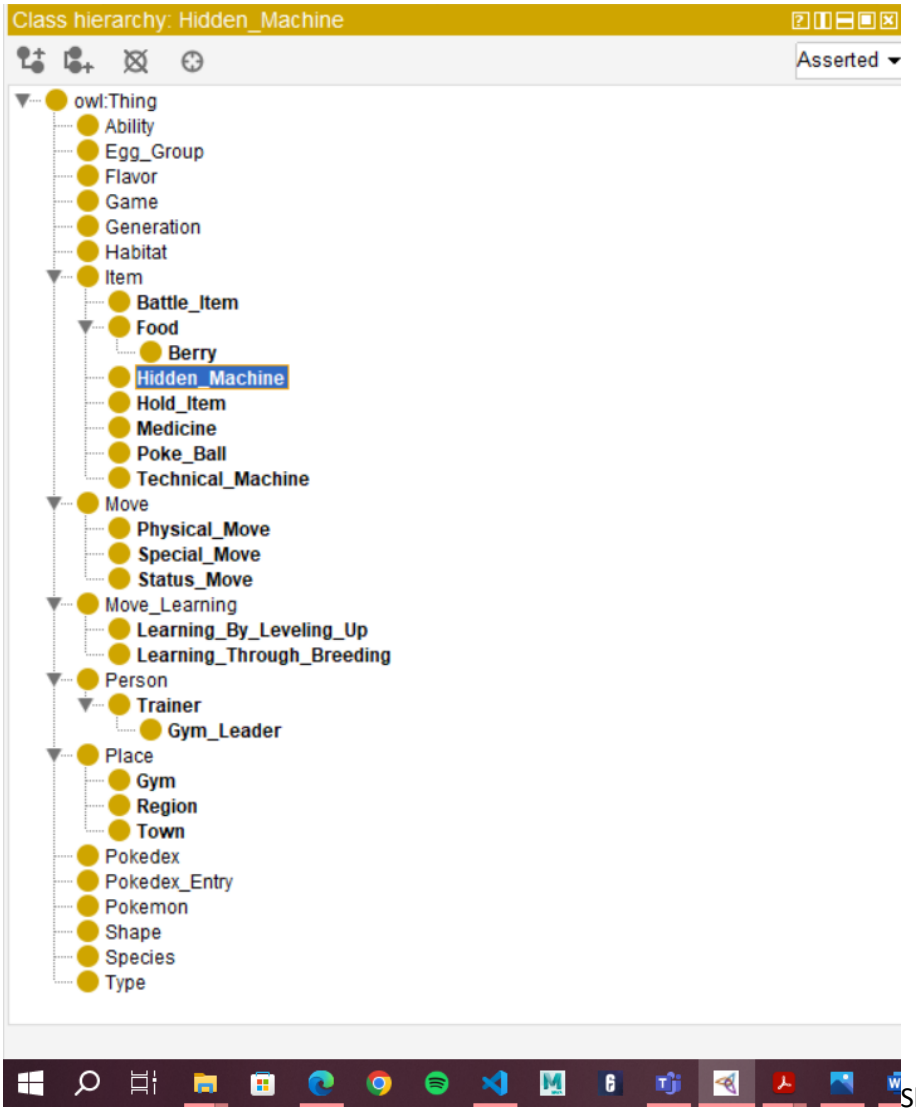
The Pokemon Ontology has numerous potential applications. Game developers can utilize it to build intelligent systems that generate new Pokemon species, design challenging battles, or create immersive virtual environments. Researchers can leverage the ontology to analyze gameplay patterns, study Pokemon ecology, or explore the effectiveness of different strategies in battles. Collectors and enthusiasts can use it to catalog and organize their Pokemon collections, discover new Pokemon combinations, or generate team recommendations for competitive play.

Overall, the Pokemon Ontology plays a crucial role in consolidating the vast amount of information associated with the Pokemon franchise into a structured knowledge representation. It opens up avenues for research, innovation, and collaboration within the Pokemon community, offering new insights and possibilities for understanding and engaging with the beloved world of Pokemon.

Classes and Entities:

Classes as:

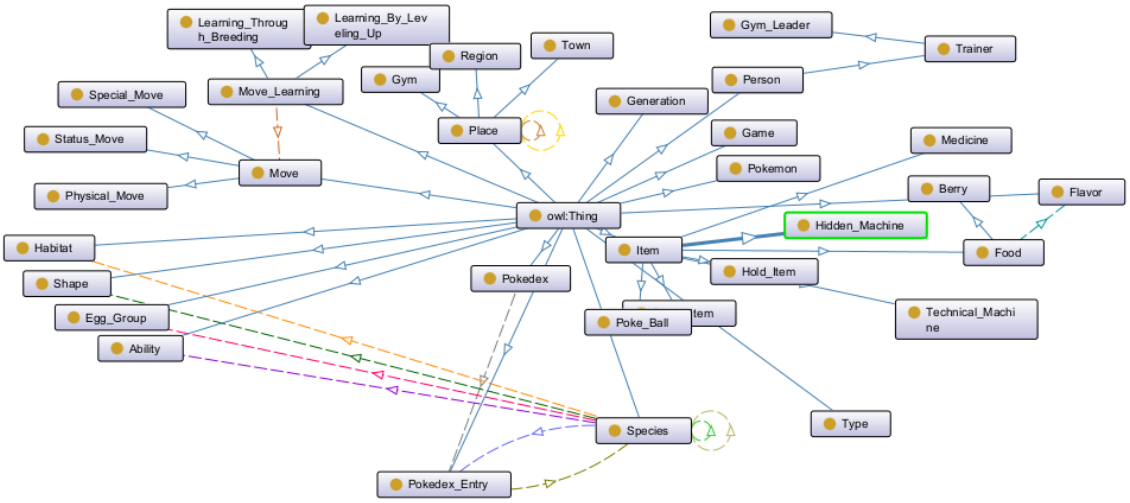
- Ability
- Egg group
- Item and its sub classes
- Move and Move Learning
- Person
- Place
- Pokedex and entry
- Pokemon

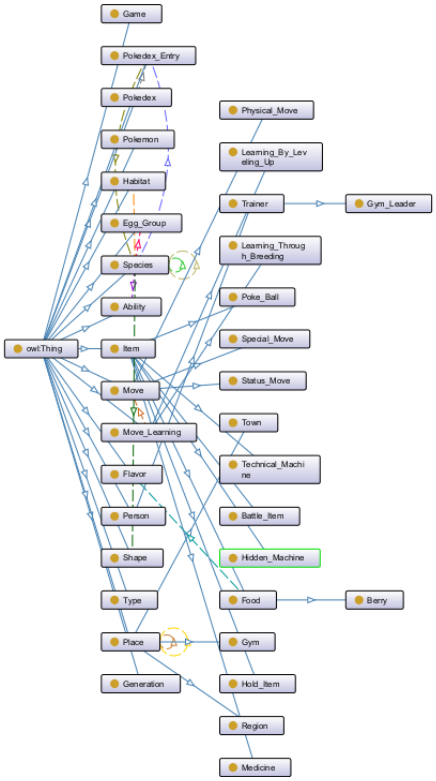
- 

Shapes and Types

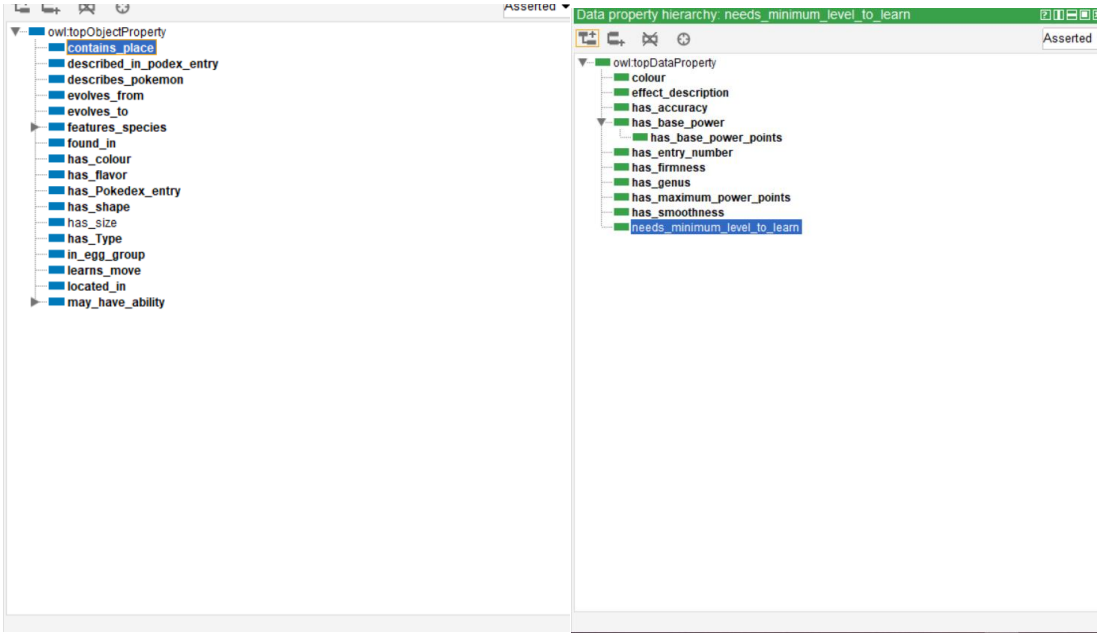
Relations:

Ontology Schema:

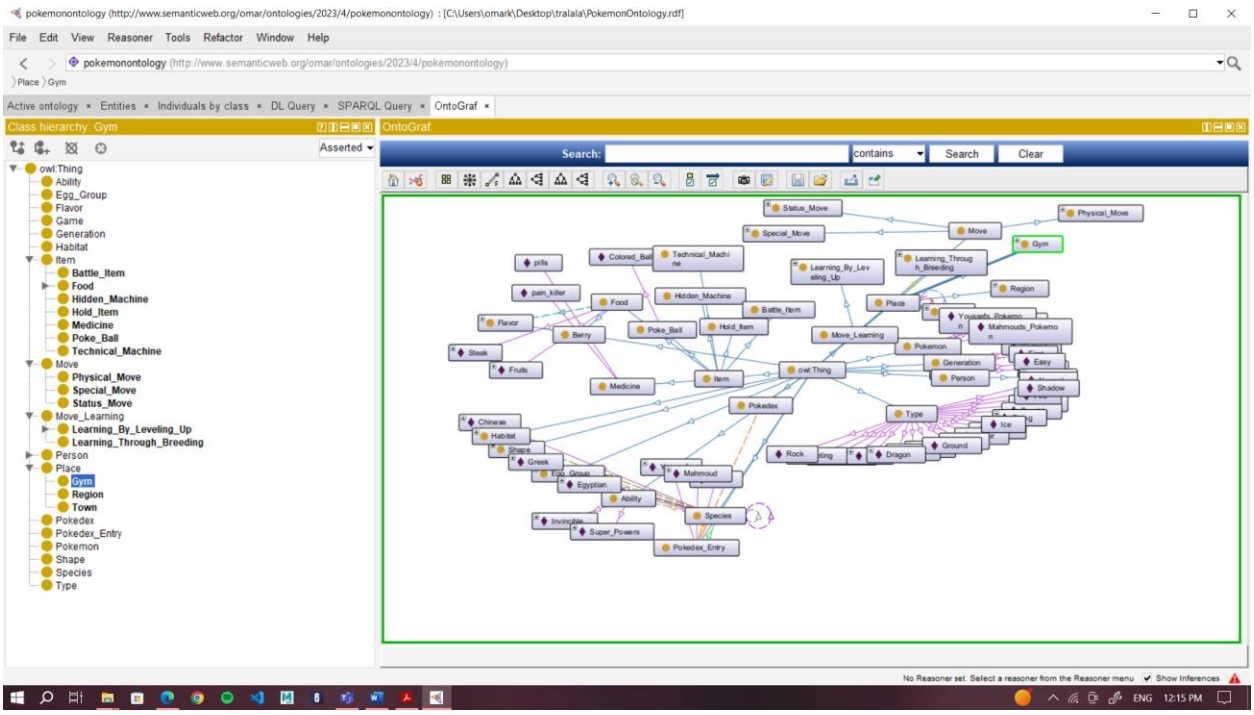




Properties and Attributes

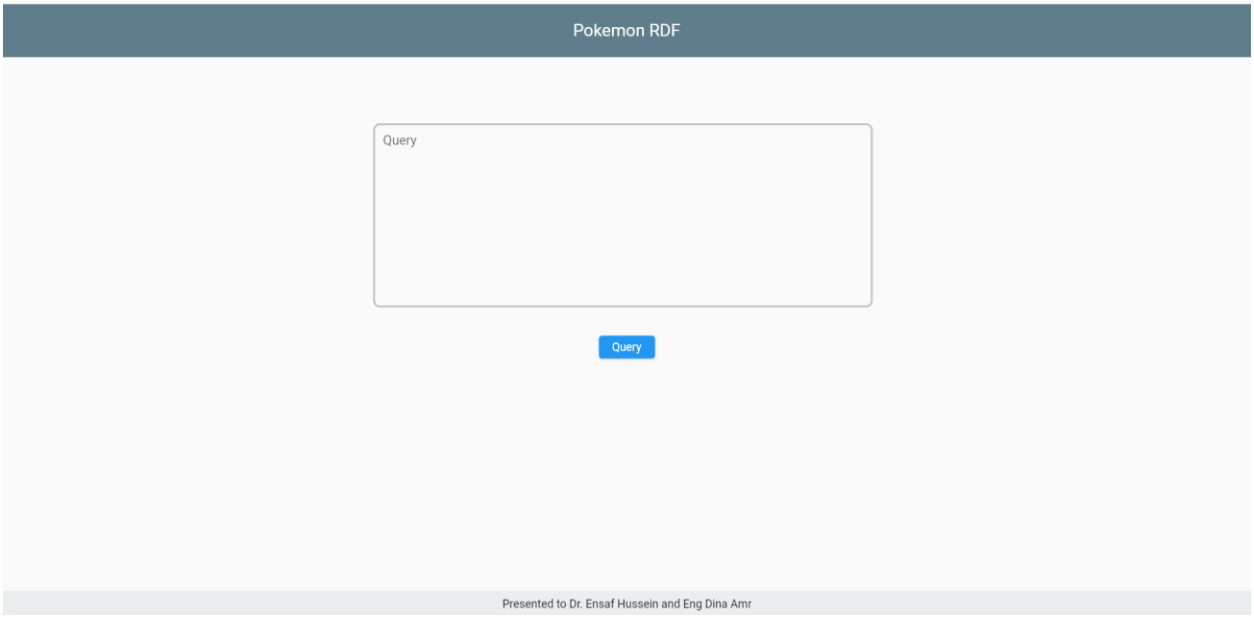


Population:



UI and Interface:

Web app:



Pokemon RDF

Query

```
Select ?spec ?shape Where{

 ?spec :has_shape ?shape.
}
```

Query

spec	shape
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Egyptian	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Fish
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Egyptian	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Heads
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Greek	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Heads
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Egyptian	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Humanoid
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Greek	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Armor
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Greek	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Legs
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Greek	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#wings

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Pokemon RDF

Query

```
Select ?location ?outerLocation Where {
 ?location omar:located_in ?outerLocation.
}
```

Query

location	outerlocation
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Cairo	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#MENA
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#NYC	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#US
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Paris	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#EU

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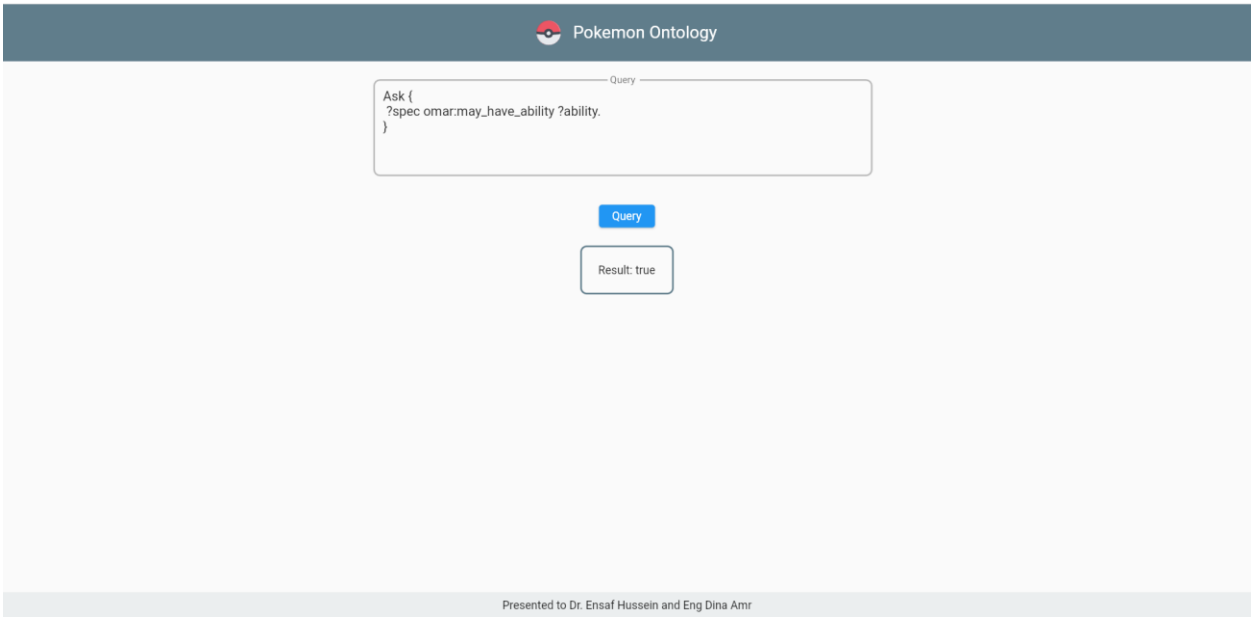

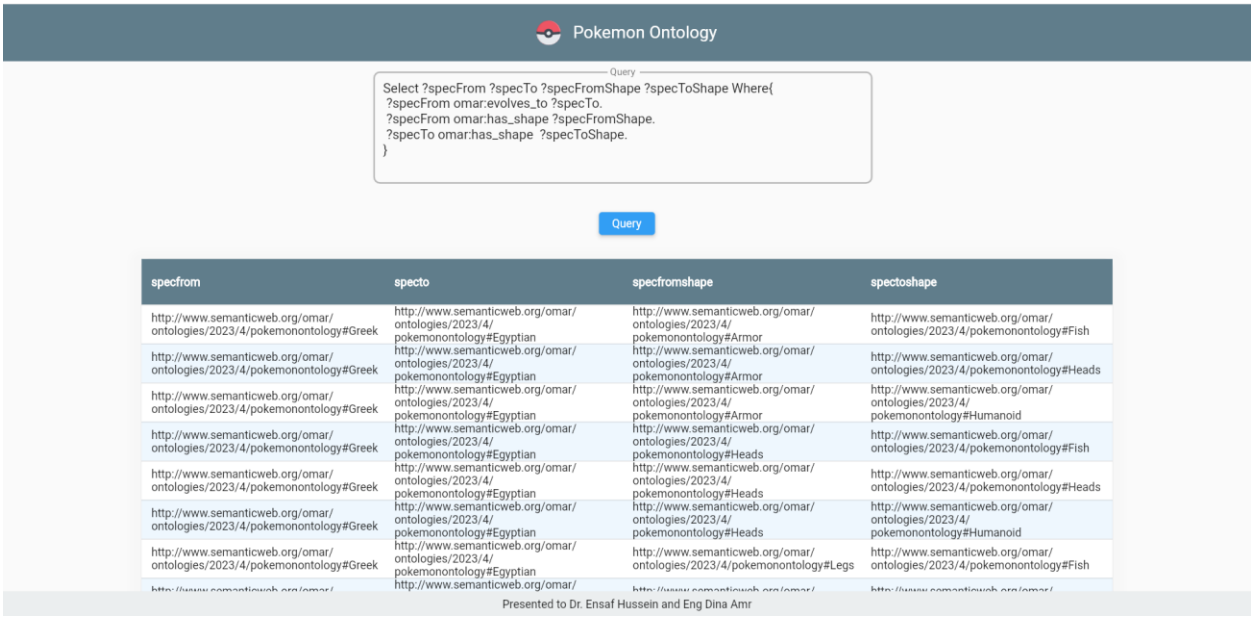

specfrom	specto	specfromshape	spectoshape
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Greek	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Egyptian	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Armor	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Fish
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Greek	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Egyptian	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Armor	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Heads
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Greek	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Egyptian	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Armor	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Humanoid
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Greek	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Egyptian	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Heads	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Fish
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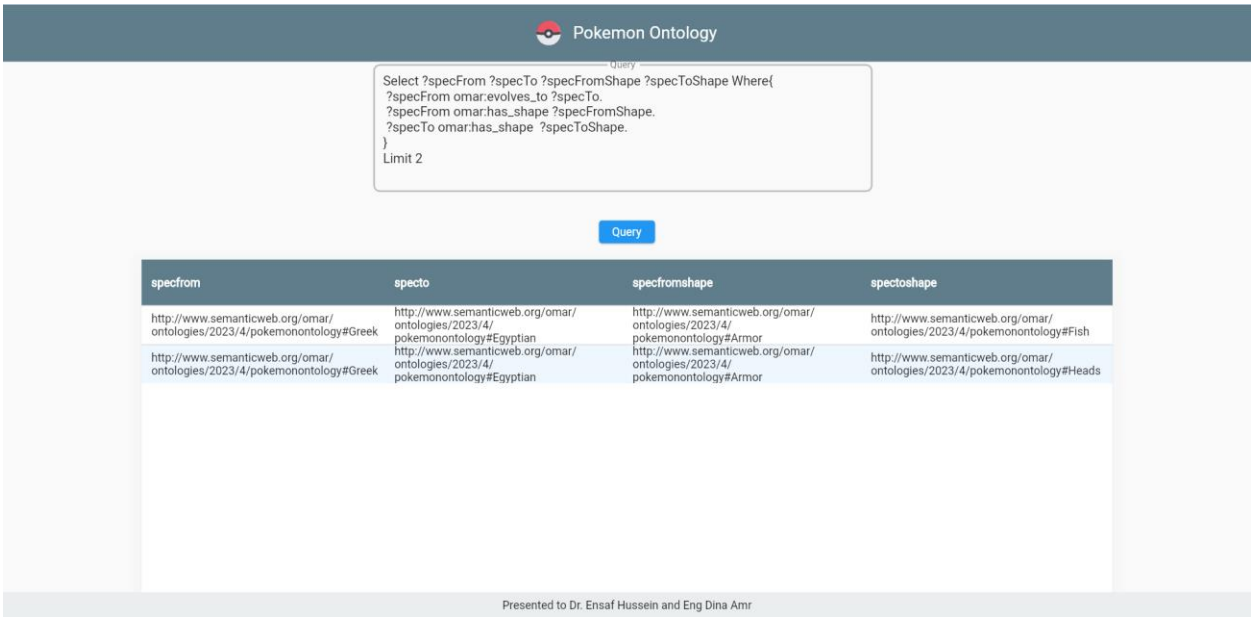
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Greek	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Egyptian	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Legs	http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Fish
http://www.semanticweb.org/omar/	http://www.semanticweb.org/omar/		


Pokemon Ontology
Query
Select ?specFrom ?specTo ?specFromShape ?specToShape Where{
?specFrom omar:evolves_to ?specTo.
?specFrom omar:has_shape ?specFromShape.
?specTo omar:has_shape ?specToShape.
}
Limit 2
Query
specfrom
specto
specfromshape
spectoshape
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Greek
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Egyptian
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Armor
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Fish
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Greek
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Egyptian
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Armor
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Heads
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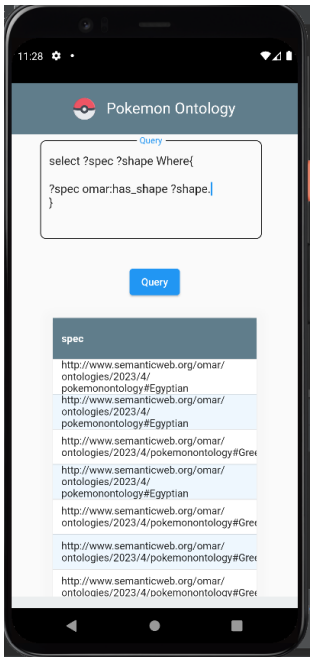
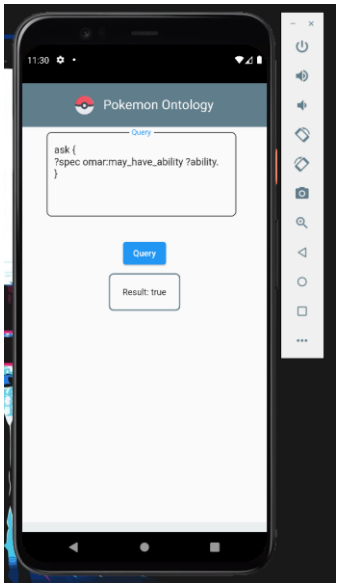
Mobile app:


11:28
Pokemon Ontology
Query
select ?spec ?shape Where{
?spec omar:has_shape ?shape.
}
Query
spec
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Egyptian
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Egyptian
http://www.semanticweb.org/omar/ontologies/2023/4/pokemonontology#Egyptian


11:30
Pokemon Ontology
Query
ask {
?spec omar:may_have_ability ?ability.
}
Query
Result: true