SPARQL Queries for Dressing Fashion Trends Ontology

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2 Retrieve all colors associated with a specific fashion trend

```
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX sc: <http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#>

SELECT ?color
WHERE {
    ?color sc:associatedWithFashionTrend sc:FashionTrend1 .
}
```

3 Retrieve all clothing items manufactured by a specific brand

```
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX sc: <http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#>

SELECT ?clothing
WHERE {
```

```
    ?clothing sc:isManufacteredBy sc:FashionBrand1 .
}
```

4 Retrieve all clothing items suitable for a specific event

```
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX sc: <http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#>

SELECT ?clothing
WHERE {
    ?clothing sc:isSuitableToBeDressedAtEvent sc:Event1 .
}
```

5 Retrieve all clothing items suitable for a specific season

```
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX sc: <http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#>

SELECT ?clothings
WHERE {
    ?clothings sc:isSuitableToBeDressedInSeason sc:Season2 .
}
```

6 Retrieve all clothing items suitable for a specific body shape

```
PREFIX owl: <http://www.w3.org/2002/07/owl#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>
PREFIX sc: <http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#>

SELECT ?clothing
WHERE {
    ?clothing sc:isSuitableToBeDressedByBodyShape sc:BodyShape1 .
}
```

7 Retrieve all clothing items, their associated brands, and their suitable dress codes

```
PREFIX sc: <http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>

SELECT ?clothingItem ?brand ?dressCode
WHERE {
    ?clothingItem rdf:type sc:Dress .
    ?clothingItem sc:isManufacteredBy ?brand .
    ?clothingItem sc:isSuitableForDressingCode ?dressCode .
}
```

8 Retrieve Event Names and Venues

```
PREFIX sc: <http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX dbo: <http://dbpedia.org/ontology/>

SELECT ?event ?name ?venue
WHERE {
    ?event rdf:type dbo:Event .
    ?event sc:eventName ?name .
    ?event sc:eventVenu ?venue .
}
```

9 Retrieve Details of the Recommendation System

```
PREFIX sc: <http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX dbo: <http://dbpedia.org/ontology/>

SELECT ?recommendationSystem ?algorithm ?performance
WHERE {
    ?recommendationSystem rdf:type sc:RecommendationSystem .
    ?recommendationSystem sc:algorithmUsed ?algorithm .
    ?recommendationSystem sc:performanceMetrics ?performance .
```

```
}
```

10 Retrieve Personal Preferences and Styles of Users

```
PREFIX sc: <http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>
PREFIX dbo: <http://dbpedia.org/ontology/>



SELECT ?person ?preference ?style
WHERE {
    ?person rdf:type <https://schema.org/Person#Person>.
    ?person sc:useRecommendationsgeneratedBy ?preference .
    ?preference sc:personalStyle ?style .
}
```

11 Retrieve Outfit Planning Details

```
PREFIX sc: <http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#>
PREFIX rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#>

SELECT ?outfitPlanning ?event ?budgetRange
WHERE {
    ?outfitPlanning rdf:type sc:OutfitPlanning .
    ?outfitPlanning sc:eventDescription ?event .
    ?outfitPlanning sc:budgetRange ?budgetRange .
}
```

12 We have solved the following errors from the pitfall scanner:

1. Missing Inverse Relationships

This pitfall appears when any relationship (except for those that are defined as symmetric properties using `owl:SymmetricProperty`) does not have an inverse

relationship (`owl:inverseOf`) defined within the ontology. The solutions are as follows:

- `http://dbpedia.org/property/dressSize`
  - Inverse: `isDressSizeOf`
- `http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#hasSize`
  - Inverse: `isSizeOf`
- `http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#hasTexture`
  - Inverse: `isTextureOf`
- `http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#relatedToFashionTrend`
  - Inverse: `isRelatedToByFashionTrend`
- `http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#associatedWithFashionTrend`
  - Inverse: `isAssociatedWithByFashionTrend`
- `http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#belongsTo`
  - Inverse: `hasBelonging`
- `http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#hasColour`
  - Inverse: `isColourOf`
- `http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#relatedToFashionBrand`
  - Inverse: `isRelatedToByFashionBrand`
- `http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#isManufacturedBy`
  - Inverse: `manufactures` (This is a common inverse property for `isManufacturedBy`)
- `http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#hasRelatedEvent`
  - Inverse: `isRelatedEventOf`
- `http://www.semanticweb.org/ontologies/2015/02/semcloth.owl#relatedToEvent`
  - Inverse: `isRelatedToByEvent`

2. Isolated Ontology Elements

Ontology elements (classes, object properties, and datatype properties) are created isolated, with no relation to the rest of the ontology. This pitfall appears in the following elements:

- `http://dbpedia.org/resource/Shape`

Solve this issue by creating object properties for both `bodyShape` and `shape`, such as:

- `dress hasShape dbpedia:Shape`
- `dress SuitableForBodyShape dbpedia:bodyShape`

3. File Extensions in URIs

This pitfall occurs if file extensions such as `.owl`, `.rdf`, `.ttl`, `.n3`, and `.rdfxml` are included in an ontology URI.Solve this issue by removing the RDF type from the URI.

4. Missing Annotations

Ensure that all ontology elements have appropriate annotations to provide necessary metadata and descriptions.

5. Using Different Naming Conventions in Ontology

We have not solved it, as we have imported the domain ontology for reuse that has class names like dbpedia:Clothing so we have not updated them.