**Prefixes**

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

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

PREFIX rdfs: <http://www.w3.org/2000/01/rdf-schema#>

PREFIX xsd: <http://www.w3.org/2001/XMLSchema#>

PREFIX cw: <http://www.semanticweb.org/restaurants#>

**SPARQL**

**Subtask SPARQL.1 Create a query with at least a triple pattern and a FILTER..**

Query: List Restaurant with pizza amount greater then 10

SELECT ?resturant ?amount

WHERE {

?resturant cw:servesMenuItem ?pizza.

?pizza cw:hasValue ?value.

?value cw:amount ?amount.

FILTER (?amount > "10"^^<http://www.w3.org/2001/XMLSchema#decimal>)

}

**Subtask SPARQL.2 Create a query that uses at least one triple pattern, a FILTER and**

**AVG function. (20%).**

Query: Get Avg pizza amount

SELECT (AVG(?amount) as ?avg)

WHERE {

?pizza a cw:Pizza.

?pizza cw:hasValue ?value.

?value cw:amount ?amount.

FILTER (?amount > 0)

}

**Subtask SPARQL.3 Create a query that groups results, uses aggregates, and filters the**

**results. (20%).**

Query: list avg pizza amount according to restaurant

SELECT ?resturant (AVG(?amount) as ?avg)

WHERE {

?resturant cw:servesMenuItem ?pizza.

?pizza cw:hasValue ?value.

?value cw:amount ?amount.

FILTER (?amount > 0)

} GROUP BY ?resturant

**Subtask SPARQL.4 Create a query (different from SPARQL.3) that group results,**

**uses aggregates, filters the results and orders the results according to two variables.**

Query: List Avg resturant pizza amount, sorted by city and average

SELECT ?resturant (AVG(?amount) as ?avg)

WHERE {

?resturant cw:servesMenuItem ?pizza.

?resturant cw:hasCity ?city.

?pizza cw:hasValue ?value.

?value cw:amount ?amount.

?pizza a ?type.

FILTER (?amount >= 0)

} GROUP BY ?resturant order by desc (?city && ?avg)

**Subtask SPARQL.5 Create a query that uses the Union graph pattern and negation.**

Query: List American Restaurant that are not Gourmet Restaurants

SELECT ?resturant

WHERE {

{?resturant a cw:Restaurant.} UNION {?resturant a cw:AmericanRestaurant.}

FILTER NOT EXISTS {

?resturant a cw:GourmetRestaurants.

}

}