

# TRAINING TR-102 REPORT DAY 13

27 June, 2024

## Overview:

The eleventh day of the training focused on SPARQL queries and their implementation using Apache Jena Fuseki. SPARQL Queries .The training session included an in-depth exploration of various SPARQL query forms and clauses. Below is a summary of the SPARQL queries covered:

- **SELECT:** Used to retrieve specific variables from the data.

eg. PREFIX foaf: <http://xmlns.com/foaf/0.1/>SELECT ?name

WHERE {

?person foaf:name ?name.

}

- **WHERE:** Specifies the pattern to match in the dataset. eg.

PREFIX foaf: <http://xmlns.com/foaf/0.1/>SELECT ?name

WHERE { ?person foaf:name ?name. }

□ **LIMIT:** Limits the number of results returned. eg.

```
PREFIX foaf: <http://xmlns.com/foaf/0.1/> SELECT ?name
```

```
WHERE {
```

```
?person foaf:name ?name.
```

```
}
```

□ **OFFSET:** Skips a specified number of results. eg.

```
PREFIX foaf: <http://xmlns.com/foaf/0.1/> SELECT ?name
```

```
WHERE {
```

```
?person foaf:name ?name. }
```

```
OFFSET 5
```

□ **ORDER BY:** Orders the results based on specified variables. eg.

```
PREFIX foaf: <http://xmlns.com/foaf/0.1/> SELECT ?name
```

```
WHERE { ?person foaf:name ?name. }
```

```
ORDER BY ?name
```

□ **FILTER:** Restricts the results to meet specified conditions.

eg. PREFIX ex: <http://example.org/schema/> SELECT ?person ?credit

```
WHERE { ?person ex:credit ?credit.FILTER(?credit > 500) }
```

□ **FILTER NOT EXISTS:** Ensures certain patterns do not exist in the result set. eg.

```
PREFIX foaf: <http://xmlns.com/foaf/0.1/> SELECT ?person
```

```
WHERE {
```

```
?person foaf:name ?name. FILTER NOT EXISTS { ?person foaf:age ?age.
```

```
} }
```

□ PREFIX foaf: <http://xmlns.com/foaf/0.1/> DESCRIBE ?person

```
WHERE {
```

```
?person foaf:name "Alice"; }
```

□ **SELECT \* WHERE:** A variant of SELECT to return all variables that match the pattern.

eg.

```
PREFIX ex: <http://example.org/schema/>
```

```
PREFIX foaf: <http://xmlns.com/foaf/0.1/> SELECT * WHERE {
```

```
?subject ?predicate ?object. }
```

**DESCRIBE:** Returns an RDF graph containing resources related to the query.

□ **OPTIONAL:** Returns results including optional patterns if they exist. eg.

```
PREFIX foaf: <http://xmlns.com/foaf/0.1/> SELECT ?person ?name ?age
```

```
WHERE { ?person foaf:name ?name. OPTIONAL { ?person foaf:age ?age. }
```

```
}
```

□ Participants asked to perform the tasks using the SPARQL queries learnt on the dataset imported on the previous day.

### **Conclusion:**

The thirteenth day of the training focused on mastering SPARQL queries using Apache Jena Fuseki. Participants gained practical knowledge in querying RDF data with them. Hands-on sessions enabled them to import datasets, execute queries, and troubleshoot effectively. This session prepares participants for advanced topics in semantic web technologies.