(TR-102)
MASTERING THE SEMANTIC WEB

Training Day 11 Report:

26 June 2024

The eleventh day of the training focused on introducing SPARQL, the installation of Apache Jena Fuseki, and importing datasets into it.

Introduction to SPARQL:

- SPARQL (SPARQL Protocol and RDF Query Language) is a query language and protocol used for querying RDF (Resource Description Framework) data, i.e., structured information that represents metadata about web resources.
- The session began with an overview of SPARQL, covering its syntax, and key concepts:
    1. Prefix: Prefixes simplify URIs by using abbreviations, making queries easier to read and write.
       Example: PREFIX foaf: <https://xmlns.com/foaf/0.1/>
    2. Select: The 'SELECT' clause specifies the variables to be included in the query results.
       Example: SELECT ?name ?email
    3. From: The 'FROM' clause specifies the dataset to query from.
       Example: FROM <https://example.org/dataset>
    4. Where: The 'WHERE' clause contains the patterns that define the criteria for selecting data.
       Example: WHERE {
           ?person foaf:name ?name .
           ?person foaf:mbox ?email .
       }

Example Query:

PREFIX foaf: <https://xmlns.com/foaf/0.1/>

SELECT ?name ?email

FROM <https://example.org/dataset>

WHERE {

    ?person foaf:name ?name .

    ?person foaf:mbox ?email .

}

This query retrieves the 'name' and 'email' of persons from the specified dataset using the FOAF vocabulary.

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- Practical exercises were conducted to reinforce the learning, allowing participants to execute various SPARQL queries.

Installation of Apache Jena Fuseki:

- Apache Jena Fuseki is a SPARQL server that provides an HTTP interface to RDF data.
- The installation process was demonstrated step-by-step, starting from downloading the software to setting it up on the local machines.
- Key configuration settings were explained, including how to start and stop the Fuseki server, and how to configure it for different datasets.
- Troubleshooting tips were provided to help participants resolve common installation issues.

Importing Datasets into Apache Jena Fuseki:

- The session covered methods for importing RDF datasets into Apache Jena Fuseki.
- Participants were shown how to use the Fuseki web interface to upload datasets.
- Batch processing and command-line tools for dataset import were also discussed.
- Hands-on practice was provided, allowing participants to import sample datasets and run SPARQL queries against them.

Conclusion:

The eleventh day of the training focused on participants gaining practical knowledge in SPARQL, learning how to set up and configure Apache Jena Fuseki, and understanding how to import and query datasets. The hands-on sessions ensured that participants could apply the concepts learned and troubleshoot any issues encountered during the process.

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