

(TR-102) MASTERING THE SEMANTIC WEB –

Training Day 10 Report :

26 June 2024

Introduction to SPARQL :

SPARQL (SPARQL Protocol and RDF Query Language) is a powerful query language and protocol used to query and manipulate data stored in Resource Description Framework (RDF) format. It is the standard language for interacting with RDF data, which is commonly used in semantic web and linked data applications.

Basic Components of SPARQL :

- **PREFIX:** The PREFIX clause in SPARQL is used to define namespace prefixes, which are shorthand for longer URI namespaces. This makes queries more readable and easier to write.
- **SELECT:** Used to specify the variables to be returned in the query result.

- WHERE: Contains the triple patterns that form the query. These patterns are matched against the RDF data.
- FROM :The FROM clause specifies the RDF graph(s) to query. If not specified, the query operates on the default graph.

Apache Jena Fuseki :

Apache Jena Fuseki is a SPARQL server that provides a robust and flexible platform for serving RDF data over HTTP. It allows users to query and update RDF data using SPARQL, the RDF query language, and provides a RESTful interface for interacting with RDF datasets.

How to Use Apache Jena Fuseki

Installation and Setup

1. Download and Install:

- Download the Fuseki distribution from the [official Apache Jena website](#).
- Extract the downloaded archive to a directory of your choice.

2. Download Java :

[Click Here to view tutorial to download Java](#)

3. Start the Server:

- Navigate to the Fuseki directory in a terminal.

- Run the server using the command (fuseki-server --update --mem /ds) for windows.

4. Access the Web Interface:

- Open a web browser and navigate to <http://localhost:3030/>.
- Use the web interface to create datasets, run queries, and manage the server.

Steps for Creating a Dataset:

- Use the web interface to create a new dataset.
- Upload RDF data to the dataset or configure the dataset to load data from a file or URL.