Training TR-102 Report
Day 16

3rd July, 2024

On the sixteenth day of the training, participants were introduced to TOTP (Time-based One-Time Password) apps. They downloaded a TOTP app and set up two-factor authentication on their GitHub accounts. Additionally, the day included further study and detailed exploration of SPARQL queries.

TOTP (Time-based One-Time Password) Apps and Two-Factor Authentication (2FA)

- The session included an introduction to Time-based One-Time Password (TOTP) apps.
- The training included a detailed explanation of TOTP and its importance in enhancing security through two-factor authentication.
- Participants downloaded a TOTP app and used it to set up two-factor authentication on their GitHub accounts.
- Each participant successfully implemented 2FA on their GitHub account, ensuring an additional layer of security.

SPARQL Queries

The session included an in-depth study and practice of SPARQL queries using the following resources:

1. **Cambridge Semantics: SPARQL Queries**
    - **Basic Queries:**
        - SELECT queries to retrieve data.
        - Constructing queries to filter and sort results.
    - **Advanced Features:**
        - Use of CONSTRUCT to create new RDF graphs.
        - ASK queries to return boolean results.
        - DESCRIBE queries to return RDF data about resources.
    - **Functions and Expressions:**
        - String manipulation, mathematical operations, and date functions.
        - Aggregation functions like COUNT, SUM, AVG, MIN, MAX.
    - **Modifying Data:**
        - INSERT DATA, DELETE DATA, MODIFY statements to alter RDF datasets.
2. **Medium: Constructing SPARQL Queries**
    - **Best Practices:**
        - Structuring queries for readability and efficiency.
        - Use of comments and proper indentation.
    - **Complex Queries:**
        - Nested queries and subqueries.
        - OPTIONAL and UNION clauses to handle optional data and multiple patterns.
    - **Example Queries:**
        - Practical examples demonstrating real-world use cases.
        - Step-by-step breakdown of constructing complex queries.

Implementation

- Participants practiced writing and executing various SPARQL queries based on the examples and guidelines provided by the resources.
- Queries included retrieving specific data, constructing new RDF triples, and manipulating datasets.
- Emphasis was placed on understanding query optimization and the efficient use of SPARQL features.

Conclusion

Day 16 of the training was successful in providing participants with practical knowledge and hands-on experience with TOTP apps for 2FA and advanced SPARQL queries. The comprehensive study of SPARQL from the provided resources enabled participants to enhance their query-writing skills and better understand the intricacies of RDF data manipulation.