Training TR-102 Day 5 Report

18th June, 2024

The fifth day of the TR-102 training provided an in-depth exploration of the evolution of the web (Web 1.0, Web 2.0, Web 3.0), various web technologies, and tools. The session covered a wide range of topics including RDF serialization, web protocols, and practical tools for enhancing web development and browsing experience.

Evolution of the Web

- **Web 1.0:** The first generation of the web, characterized by static pages and limited user interaction.
- **Web 2.0:** The second generation, marked by dynamic content, user-generated content, and the rise of social media.
- **Web 3.0:** The emerging third generation, focusing on the Semantic Web, decentralized technologies, and AI integration.

Web Addresses and Identifiers

- **URL (Uniform Resource Locator):** A reference to a web resource specifying its location.
- **URI (Uniform Resource Identifier):** A broader concept that includes URLs and URNs.
- **URN (Uniform Resource Name):** A unique and persistent identifier that does not specify a location.

- **IRI (Internationalized Resource Identifier):** An extension of URI allowing for a wider range of characters.

Identifiers and Standards

ITF, ISBN, ISSN: Various identifiers for digital and physical media.

- **ITF (Interleaved 2 of 5):** A barcode symbology used for encoding numeric data.
- **ISBN (International Standard Book Number):** A unique identifier for books.
- **ISSN (International Standard Serial Number):** A unique identifier for periodicals.

RDF Serialization Formats

- **Turtle:** A compact, readable format for RDF data.
- **RDFa:** RDF annotations within HTML documents.
- **JSON-LD:** JSON for linking data, a lightweight format for expressing RDF data.
- **N-Quads:** An extension of N-Triples to include context for RDF graphs.
- Practiced writing RDF data in Turtle format using various prefixes.
- Explored RDFa and JSON-LD for embedding and linking data in web pages.

Web Protocols and Security

- **HTTP (HyperText Transfer Protocol):** The foundation of data communication on the web.
- **HTTPS (HTTP Secure):** Secure version of HTTP, using SSL/TLS to encrypt data.

- **SSL/TLS:** Protocols for encrypting data sent over the internet.
    - **SSL (Secure Sockets Layer):** A protocol for encrypting information over the internet.
    - **TLS (Transport Layer Security):** A protocol that provides secure communication over a computer network, succeeding SSL.

Internet vs. World Wide Web

- **Internet:** A global network of interconnected computers.
- **World Wide Web (WWW):** A system of interlinked hypertext documents and resources accessed via the internet.

Access and Censorship

- **Website Blocking:** How certain websites are restricted in specific countries and methods to bypass these restrictions using proxies.
    - Example: TikTok banned in India can be accessed using a proxy.

Web Tools and Extensions

- **Google Power Search:** Advanced search techniques using Google.
- **Chrome Extensions:**
    - **Adblock Plus:** Blocks ads on websites.
    - **LastPass:** A password manager that securely stores login information.

- **ColorZilla:** A tool for color sampling and other color-related tasks.
- **WhatFont:** Identifies fonts used on web pages.

- Installed and configured Chrome extensions like Adblock Plus, LastPass, ColorZilla, and WhatFont.
- Used Google Power Search techniques to find specific information efficiently.

Key Takeaways

- **Web Evolution:** Gained a comprehensive understanding of the progression from Web 1.0 to Web 3.0.
- **Web Addresses and Identifiers:** Learned the differences and uses of URL, URI, URN, and IRI.
- **RDF Serialization:** Mastered various RDF serialization formats and their applications.
- **Web Protocols:** Understood the significance of HTTP, HTTPS, and encryption protocols like SSL/TLS.
- **Internet vs. WWW:** Clarified the distinction between the internet and the World Wide Web.
- **Access and Censorship:** Learned methods to bypass website restrictions using proxies.
- **Web Tools:** Enhanced browsing and development efficiency with useful Chrome extensions and advanced Google search techniques.

Conclusion

Day 5 of the TR-102 training equipped participants with a deeper understanding of web technologies and tools, covering everything from the evolution of the web to advanced web protocols and security measures. The practical knowledge and tools gained will enable participants to build more secure, efficient, and user-friendly web applications while staying

ahead in the rapidly evolving digital landscape. This session emphasized the importance of continuous learning and adaptation in web development, preparing participants for future challenges and innovations.