(TR-102) MASTERING THE SEMANTIC WEB –

Training Day 5 Report :

18 June 2024

Generations Of Web:

Web 1.0 (The Early Web)

Main Features:

- Static Pages: Websites were mostly made up of static pages that didn't change once loaded.
- Read-Only: Users could only read the information on these websites; there was no way to interact with it.
- Basic Design: The design was simple, with basic layouts and text-heavy content.
- Limited Interaction: Websites were like digital brochures or catalogs.
- Example: Early news websites where you could read articles but not comment or share them.

By: Jaspinder Kaur Walia URN:2203843 CRN:2215199

Web 2.0 (The Interactive Web)

Main Features:

- Dynamic Content: Websites became interactive, allowing for real-time updates and user interaction.
- User Contribution: Users could create content, share it, and interact with each other (social media, blogs, forums).
- Rich Media: More use of videos, images, and multimedia elements.
- Improved User Experience: Enhanced interactivity with technologies like JavaScript and AJAX.
- Example: Social media platforms like Facebook and Twitter, where users can post updates, share photos, and interact with others.

Web 3.0 (The Intelligent Web)

Main Features:

- Semantic Web: Web 3.0 aims to make data more understandable to computers, enabling better search and data analysis.
- Personalization: Websites and services can tailor content and experiences to individual users through AI and machine learning.
- Decentralization: Use of technologies like blockchain to distribute data across many locations, reducing reliance on central servers.
- Interconnected Data: Information is connected across different sites and services, providing more seamless and integrated experiences.

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- Example: Virtual assistants like Siri or Google Assistant, which can understand your preferences and provide personalized recommendations.

Introduction to URL,URI and URN:

URL (Uniform Resource Locator)

- A URL is a specific type of URI that tells you how to access a resource on the internet. It includes the location (address) of the resource and the protocol to use.
- Example: https://www.example.com/page

URI (Uniform Resource Identifier)

- A URI is a broader term that can refer to either a URL or a URN. It's a way to identify a resource, but it doesn't necessarily tell how to access it.
- Example: https://www.example.com/page (this is a URI because it identifies a resource)

URN (Uniform Resource Name)

- A URN is a specific type of URI that names a resource but doesn't tell where it is or how to get it. It's like a unique identifier for a resource.
- Example: urn:isbn:978-3-16-148410-0

RDF Serialization:

RDF (Resource Description Framework) serialization refers to the various ways RDF data can be represented and stored in a file. RDF is a framework for describing resources on the web, and serialization formats are methods of encoding this data so it can be exchanged and understood by different systems.

Main RDF serialization formats:

1. RDF/XML

An XML-based format for representing RDF data. It uses XML tags to structure the data.

2. Turtle (Terse RDF Triple Language)

A more human-readable format for writing RDF data. It's concise and easier to read than RDF/XML.

3. N-Triples

A simple, line-based format for encoding RDF triples. Each line contains one RDF triple.

4. JSON-LD (JSON for Linking Data)

A JSON-based format for representing RDF data. It's designed to be easy for web developers to use.

5. RDFa (RDF in Attributes)

A way to embed RDF data directly in HTML or XML documents using attributes.

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