

# **(TR-102) MASTERING THE SEMANTIC WEB –**

## **Training Day 7 Report :**

21 June 2024

### **Wave Extension:**

- The WAVE extension is a free browser extension provided by WebAIM that helps evaluate web content for accessibility issues directly within your browser. It is designed to facilitate human evaluation and educate about web accessibility. Here are some key features and uses of the WAVE extension:
- Accessibility Evaluation: WAVE evaluates web content for accessibility issues, providing visual feedback in the form of icons and indicators. This helps identify errors and alerts that need to be fixed to improve accessibility for users with disabilities
- Ease of Use: The extension is easy to use. Once installed, you can run a WAVE report by clicking on the WAVE icon in your browser toolbar or by using keyboard shortcuts.

The extension provides detailed information about each issue, including references for how to fix them.

- **Private and Secure Reporting:** The WAVE extension runs entirely within your browser, ensuring 100% private and secure accessibility reporting. This means that no information is sent to the WAVE server, making it suitable for evaluating intranet, password-protected, or sensitive web pages.

## **W3C Validator Tool :**

W3C validation is the process of checking a website's code to determine if it follows the formatting standards set by the World Wide Web Consortium (W3C). This includes checking HTML, XHTML, SMIL, MathML, and CSS for errors and inconsistencies. The primary goal is to ensure that web pages are accessible, readable, and functional across different browsers and devices.

### **Importance of W3C Validation:**

- **SEO Benefits:** W3C validation helps improve search engine rankings by ensuring that web pages are correctly formatted and follow best practices. This can lead to better visibility and higher traffic.
- **Accessibility and Usability:** Validated websites are more accessible and usable for users with disabilities. They are also more compatible with different browsers and devices, ensuring a consistent user experience.
- **Error Detection and Correction:** The W3C Validator identifies errors in code, which helps developers detect

and correct issues before they impact the website's performance and online presence.

- **Best Practices and Standards Compliance:** W3C validation promotes adherence to international coding standards, ensuring that web pages are built with best practices and are future-proof.

### **How to Use the W3C Validator?**

- **Validate by URL:** Copy and paste the URL of the page you want to validate into the W3C Validator tool.
- **Validate by File Upload:** Upload an HTML file to the validator for checking.
- **Validate by Direct Input:** Copy and paste the HTML code directly into the validator's editor section.

## **Axe Dev Tool :**

Axe DevTools is a powerful tool designed to help developers and testers identify and fix accessibility issues in web applications.

### **How to Use Axe DevTools?**

- **Install the Extension:** Add the Axe DevTools browser extension from the Chrome Store.
- **Scan Your Page:** Open the Axe DevTools tab in your browser, select the page you want to test, and click "Scan" to start the automated testing.
- **View Results:** Axe DevTools will highlight accessibility issues and provide detailed information about each issue, including references for how to fix them.

- **Save and Export:** Save your results and export specific issues to share with colleagues or issue tracking software.
- **Intelligent Guided Tests:** Use IGTs to guide you through more complex accessibility issues without requiring extensive accessibility knowledge.

## **Google Analytic :**

Google Analytics is a web analytics service provided by Google that helps website owners and marketers understand and analyze the behavior of their website visitors. It is a powerful tool that provides insights into how users interact with a website, including how they arrive, what they do on the site, and how they convert.

### **Purpose:**

- **Understanding User Behavior:** Google Analytics helps users understand how users interact with their website, including what pages they visit, how long they stay, and what actions they take.
- **Enhancing User Experience:** Google Analytics provides insights into user behavior, enabling users to identify areas of the site that need improvement and optimize the user experience.
- **Competitive Analysis:** It allows users to compare their website's performance to that of their competitors, helping them stay ahead in the market.
- **Data-Driven Decision Making:** Google Analytics provides actionable insights that can inform data-driven decisions, helping users make informed choices about their marketing strategies.

# **Google Web Master Tool :**

Google Webmaster Tools, now known as Google Search Console, is a free service provided by Google that helps website owners and developers monitor and improve their website's performance in search engine results.

## **Key Features**

- **Search Performance:** Tracks search queries, impressions, clicks, and average position to help optimize search engine rankings.
- **Index Coverage:** Checks which pages are indexed and which are not, helping to identify and fix indexing issues.
- **Crawl Errors:** Identifies crawl errors and provides guidance on how to fix them, ensuring that Googlebot can crawl and index pages correctly.
- **Security Issues:** Alerts users to security issues such as malware, viruses, and other security threats.
- **Structured Data:** Helps users implement structured data, such as schema.org, to enhance search results and improve user experience.
- **Site Configuration:** Allows users to configure site settings, such as preferred domain, crawl rate, and sitemap submission.
- **Search Analytics:** Provides detailed analytics on search traffic, including impressions, clicks, and conversion rates.
- **Mobile Usability:** Checks mobile usability and provides recommendations for improving mobile user experience.
- **Page Experience:** Tracks page experience metrics, such as Core Web Vitals, to ensure a smooth user experience.

## **Purpose**

- **Search Engine Optimization (SEO):** Helps optimize website performance in search engine results by identifying and fixing technical SEO issues.
- **Website Maintenance:** Ensures that website pages are crawled and indexed correctly, reducing the risk of errors and improving search visibility.
- **Security:** Alerts users to security issues and provides guidance on how to fix them, protecting the website and its users from potential threats.
- **User Experience:** Enhances user experience by providing insights into page experience and mobile usability, helping to improve the overall user experience.
- **Data Analysis:** Provides detailed analytics on search traffic and user behavior, helping to inform data-driven decisions and optimize marketing strategies.

## **Sem Rush Tool :**

SemRush is a comprehensive digital marketing and SEO (Search Engine Optimization) tool that is used for a variety of purposes.

- **Keyword Research:** SemRush allows users to research and analyze keywords, including their search volume, competition, and related keywords. This helps businesses and marketers identify the most relevant and profitable keywords to target in their content and advertising.
- **Competitor Analysis:** SemRush provides detailed insights into the online presence and strategies of competitors. Users can see what keywords their competitors are

targeting, the content they are creating, and the backlinks they have acquired.

- **Site Auditing:** SemRush can perform a comprehensive audit of a website, identifying technical SEO issues, content gaps, and opportunities for improvement. This helps website owners and marketers optimize their sites for better search engine visibility and user experience.
- **Rank Tracking:** SemRush allows users to track their website's rankings for specific keywords across different search engines and locations. This helps them monitor the effectiveness of their SEO and marketing efforts over time.
- **Content Marketing:** SemRush provides tools for content ideation, analysis, and optimization. Users can generate content ideas, analyze the performance of their existing content, and identify opportunities to improve their content strategy.
- **Social Media Monitoring:** SemRush can track and analyze a brand's social media presence, including mentions, engagement, and competitor activity.

## **Wappalyzer Extension :**

Wappalyzer is a Chrome extension (and Firefox add-on) that helps users discover the technologies used on websites they visit. It detects various web technologies such as content management systems (CMS), e-commerce platforms, web servers, JavaScript frameworks, analytics tools, and more. This information can be useful for web developers, marketers, and anyone interested in understanding the technology stack behind a website.

## How to Use Wappalyzer?

- Installation: Installing Wappalyzer is like installing any other browser extension. It involves three steps: visiting the Wappalyzer website, clicking "Add to Chrome" or "Add to Firefox," and then selecting "Add" to verify the installation.
- Usage: To use Wappalyzer, simply search for any website you want to analyze and hover over the Wappalyzer extension icon. Click on it to see a detailed list of the technologies used on that website.

## RDF Syntax using turtle :

Example:

@prefix : <http://stardog.com/tutorial/>.

@prefix dc: <http://purl.org/dc/elements/1.1/>.

@prefix foaf: <http://xmlns.com/foaf/0.1/>.

@prefix bibo: <http://purl.org/ontology/bibo/>.

@prefix xsd: <http://www.w3.org/2001/XMLSchema#>.

:Book1 a bibo:Book;

dc:title "Hamlet"^^xsd:string;

dc:publisher "Springer"^^xsd:string;

dc:creator :WilliamShakespeare;

dc:date "1603-03-22"^^xsd:date;

bibo:reviewedBy :John;



dc:language :English.

:John a foaf:Person.

:WilliamShakespeare a foaf:Person, bibo:Author;  
bibo:plays 39;  
bibo:sonnets 154.

:Book2 a bibo:Book;

dc:title "The merchant of Venice"^^xsd:string;  
dc:publisher "Marx"^^xsd:string;  
dc:creator :WilliamShakespeare;  
dc:date "1603-06-22"^^xsd:date;  
bibo:reviewedBy :Carl;  
dc:language :English.

:Carl a foaf:Person.