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DAY 6

TRAINING REPORT

1.OWL :

OWL stands for the **Web Ontology Language**. It is a formal language designed for representing rich and complex knowledge about things, groups of things, and the relationships between them. Here are the key points about OWL in the Semantic Web:

1. **Purpose**: OWL is used to create explicit and machine-readable descriptions of the concepts within a domain (often called "ontologies"), the properties of those concepts, and the relationships between them.
2. **Integration with RDF**: OWL is built on top of the Resource Description Framework (RDF), which provides a basic framework for representing information on the web. OWL adds more vocabulary for describing properties and classes, including relations between classes (e.g., disjointness), cardinality (e.g., "exactly one"), equality, richer typing of properties, characteristics of properties (e.g., symmetry), and enumerated classes.
3. **Ontology Development**: Using OWL, developers can create complex ontologies that allow for advanced reasoning and inference. These ontologies can be used in various applications, such as data integration, information retrieval, and automated reasoning.
4. **Reasoning**: One of the powerful features of OWL is its support for reasoning. Reasoners can infer new knowledge based on the explicit information provided in the ontology. For example, if it is stated that all humans are mortal and Socrates is a human, a reasoner can infer that Socrates is mortal.

2.What are non functional requirements :

Non-functional requirements specify the quality attributes of a system rather than its behaviour. Here are some key non-functional requirements explained in one line each:

1. **Performance**: Defines the system's response time, throughput, and resource utilization.
2. **Scalability**: Describes the system's ability to handle increased load by adding resources.
3. **Reliability**: Specifies the system's ability to operate without failure over a specified period.
4. **Availability**: Indicates the proportion of time the system is operational and accessible.

3.Various tools we learnt :

1.**Google page speed:** Google PageSpeed is a set of tools designed to help website owners improve the performance of their web pages.

2.Google Extension: A Google Extension is a small software program that customizes and enhances the functionality of the Google Chrome browser. Lighthouse" is an open-source tool developed by Google that helps improve the quality of web pages

3.GT matrix: GTmetrix is a comprehensive web-based tool designed to analyze and grade the performance of web pages. It tests various aspects of a webpage's speed and overall performance, providing detailed insights and actionable data. GTmetrix assigns performance grades based on multiple metrics, such as load time, total page size, and the number of requests.

4.CDN:

A Content Delivery Network (CDN) is a distributed network of servers strategically located across different geographic locations to deliver web content more efficiently to users. CDNs are designed to reduce latency and improve the overall performance and availability of websites and web applications.

CDNs also help websites handle large traffic volumes and sudden traffic spikes by distributing the load across multiple servers. They achieve this by caching content at edge servers located closer to the user, thereby reducing the load on the origin server and improving overall site performance and reliability.