



**Q1: Pick up two of the categories introduced in lecture 3 and provide a small essay on it**

- Max 2 pages Word, Times 11pt – check plagiarism.
- Figures do not count for the space.

The Web was invented by English computer scientist Tim Berners-Lee at CERN, and originally conceived as a document management system. The first proposal was written in 1989, and a working system implemented by the end of 1990 including the World Wide Web browser (W3) and an HTTP server.

The technology was released outside CERN to other research institutions starting in January 1991, and then to the general public on 23 August 1991. The Web was a success at CERN, and began to spread to other scientific and academic institutions.

**There are 8 categories of web applications:**

Doc-Centric, Interactive, Transactional, Workflow-Based, Collaborative, Portal Oriented, Social Web (Web 2.0), Sematic Web (Web 3.0)..

**1. Social Web (Web 2.0)**

The earliest websites were part of what is known as the “read-only web,” or Web 1.0, Social Web (Web 2.0) is a second generation of Web-based services, which emphasizes online collaboration, connectivity and the ability to share content among users. Web 2.0 involves the evolution of digital applications to wards applications aimed to the end user, which include services such as social networks, wiki blogs and folksonomies.

**How Web 2.0 Works?**

Another way to think of this reshaping of the World Wide Web is called the “read/write” web. Since this reframing of the internet, web users have been able to communicate in real-time with servers, edit web pages, post comments, and communicate with other users. Here are just a few categories to help you understand this major shift in the way the web is used.

**2. Semantic Web (Web 3.0)**

Semantic Web is the next generation of web 2.0, The Semantic Web is a mesh of data that are associated in such a way that they can easily be processed by machines instead of human operators. It can be conceived as an extended version of the existing World Wide Web, and it represents an effective means of data representation in the form of a globally linked database. By supporting the inclusion of semantic content in Web pages, the Semantic Web targets the conversion of the presently available Web of unstructured documents to a Web of information/data.

## Web 3.0 Languages?

Another obstacle for the Semantic Web is that computers don't have the kind of vocabulary that people do. You've used language your whole life, so it's probably easy for you to see connections between different words and concepts and to infer meanings based on contexts. Unfortunately, someone can't just give a computer a dictionary, an almanac and a set of encyclopedias and let the computer learn all this on its own. In order to understand what words mean and what the relationships between words are, the computer has to have documents that describe all the words and logic to make the necessary connections.

In the Semantic Web, this comes from schemata and ontologies. These are two related tools for helping a computer understand human vocabulary. An ontology is simply a vocabulary that describes objects and how they relate to one another. A schema is a method for organizing information. As with RDF tags, access to schemata and ontologies are included in documents as metadata, and a document's creator must declare which ontologies are referenced at the beginning of the document.

Schema and ontology tools used on the Semantic Web include:

RDF Vocabulary Description Language schema (RDFS) - RDFS adds classes, subclasses and properties to resources, creating a basic language framework. For example, the resource Dagobah is a subclass of the class planet. A property of Dagobah could be swampy.

Simple Knowledge Organization System (SKOS) - SKOS classifies resources in terms of broader or narrower, allows designation of preferred and alternate labels and can let people quickly port thesauri and glossaries to the Web. For example, in a Star Wars glossary, a narrower term for Sith Lord could be Darth Sidious and a broader term could be villain. Similarly, alternate labels for Han Solo might be nerf herder and laser brain.

Web Ontology Language (OWL) - OWL, the most complex layer, formalizes ontologies, describes relationships between classes and uses logic to make deductions. It can also construct new classes based on existing information. OWL is available in three levels of complexity -- Lite, Description Language (DL) and Full.

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### Reference:

1. History of the World Wide Web, Wikipedia, [\[Link\]](#)
2. Web 2.0 history, evolution and characteristics, diseno web akus, [\[Link\]](#)
3. How Semantic Web Works, How Stuff Work, By: Tracy V. Wilson [\[link\]](#)