Research Paper　　　　　　　　　　　**Library Science**

Web Version and Semantic Web

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ABSTRACT　　The several main styles or paradigms or models of programming- imperative, functional, logic and object oriented ones- were developed during more than 45 years history of programming. Each of them is based on specific algorithmic abstractions of data, operations, control and presents a specific mode of thinking about program and its execution. Though modern programming languages usually include programming techniques from different styles, they may be classified according to the main style and techniques supported Nowadays, for implementation of large programming project and techniques from different paradigms are required, mainly because of complexity and heterogeneity of problems under solution.

KEYWORDS: Web, Web Version, Web 2.0, Web 3.0, IT Functions, Tools of Web, Semantic Web,

IT FUNCTIONS:

There are numerous functions that a Computer can perform in management functions, if programmed as such financial decision-making, personnel decision-making, material decision-making, marketing decision-making, production decision-making, maintenance decision-making, educational related decision-making, research methodology decision-making and routine administration starting from attendance through biometric machines to daily profit.

WEB VERSIONS:

In its early days the web was we didn't know exactly what to show on a computer screen that time. Here web versions are as under;

Web 1.0:

In Web 1.0 small number of writers created web pages for a large number of readers. The people could get information by going directly to the source. The WWW or Web 1.0 is a system of interlinked to hypertext documents accessed via the Internet.

Web 1.5

·　Web Services
·　Machine to machine content

In this version we used web services to parse the data and it is used thought PHP or dot net scripts

Web 2.0

·　Next generation of the Web

Currently, we are seeing the infancy of the Web 2.0 or the "read-write" web if we stick to Berners-Lee's method of describing it. It is newly introduced ability to contribute content and interact with other web users has dramatically changed the landscape of the web in a short time. Technologies like that web blogs, social bookmarking, wikis, podcasts, RSS feeds, social software, web APIs. The online web services like that eBay and Gmail provide enhancements over read-only websites.

Web 2.0 makes use of latest technologies and concepts in order to make the user use of latest technologies. The advanced technologies make the user experience more interactive and useful and than interconnecting. It has brought another way to interconnect the world by means of collecting information and allowing it to be shared affectively and immediately.

What is Web 2-0?

◆　Social networking and collaboration – Blogs, RSS , Wikis
◆　Mashups (portals)
◆　Replacing email as our needed application of choice
◆　Platform, not a "tool" – Transactive Content
◆　Feels like a "desktop" application

Web 2.0 Components:

◆　AJAX - Asynchronous JavaScript and XML
◆　SLATES
➢　Search
➢　Link

➢　Authorship
➢　Tagging
➢　Extensions
➢　Signaling

AJAX - Asynchronous JavaScript and XML:

◆　Technical implementation for the browser
◆　Responsive & interactive application
◆　Exchanging small amount of data by server
◆　Behind the scenes - async
◆　Partial page rendering
◆　Used to do with hidden frames

Web Era, Information Retrieval and Query Expansion are focusing on the area of Ontologies & Semantic Metadata.

Examples of Web 2.0 based websites

1. Flickr: A photo sharing website which allows users to upload their photographs and share it with anyone and everyone.
2. Orkut: Social networking site which allows the users to send messages and communicate with other members.
3. YouTube: It allows the users to upload their videos and share it with everyone.
4. Blogs: Maintained by individuals or groups and they can be used to convey anything.
5. Google AD sense: Allows users to earn money through posting Google ads on their websites.
6. Wikipedia: Online encyclopedia where in the users contributes by writing the articles and definitions. It is completely edited, managed and maintained by the users.
7. Scribd: Users can upload any documents on the website where other users can either download or view those documents online.

Tools of Web 2.0 with Examples:
Course management tools:
Enable educators to:

❑　organize & share content, research and multimedia
❑　engage in ongoing discussions
❑　assess and document learning
❑　build formal & informal community of practice
❑　share and analyze student work
❑　examples:

Voice and Content tools:
Enable educators to:

❑　personalize introduction and discussion
❑　provide learning or project summaries
❑　explain a technical piece
❑　create online discussions
❑　address auditory learners and accessibilities
❑　examples:

Collaboration Tools:
Enable educators to:
❑ collaborate and co-create documents, plans, materials and media
❑ brainstorm and share ideas, resources and data
❑ discuss and communicate with the team members
❑ examples:

Communication Tools:
Enable educators to
❑ conduct "live" discussions and meetings
❑ blends synchronous & asynchronous learning for users
❑ address varying learning styles
❑ collaborate and share document and resource
❑ examples:

More Tool types:
• Blogging & micro-blogging tools to share ideas or focus on a specific topic or projects like that

• Social bookmarking tools to share or save resource like that;

Web 3.0:
The Web 3.0 is a term that is used to describe various evolutions of Web usage and interaction among the several paths. These includes transforming the Web into database and a move towards making content accessible by multiple non-browser application, the leveraging of artificial intelligence technology, the Semantic web and the Geospatial Web or the 3D web. The Web 3.0 would be something akin to as "read-write-execute" web. The Web 3.0 is defined as the creation of high quality content and services produced by gifted individuals using web 2.0 technologies as an enabling platform for the advanced technology.

Web 3.0 is a web where the concept of website or webpage disappears,

where data isn't owned but instead shared, where services show different views for the same web or data. Those services can be applications (like browsers, virtual worlds or anything else), devices and have to be focused on context and personalization and both will be reached by using vertical search. The Semantic Web is not a separate Web but an extension of the current one, in which the information is given into well-defined meaning and better enabling computers and people to work in cooperation. The Semantic Web requires the use of a declarative ontological language like OWL to produce domain specific ontologies that machines can use to reason about information and make a new conclusion not simply match keywords.

XML
The extensible Markup Language (XML) is a universal meta-language for defining markup. It provides a uniform framework for exchanging data between applications. It builds upon the original and most basic layer of the Web, Hypertext Markup Language (HTML). However, XML does not provide a mechanism to deal with the semantics (the meaning) of data. The XML lets everyone create their own tags, hidden labels such as <zip code> or <alma mater> that annotate Web pages or sections of text on a page, Scripts, or programs and it can make use of these tags in sophisticated ways.

RDF
The Resource Description Framework (RDF) was developed by the World Wide Web Consortium (W3C) for Web based metadata in order to build and extend XML. The aim and goat of RDF is to make work easier for autonomous agents, users and automated services by supplying a rudimentary semantic capability.

· The RDF is a format for data that uses a simple relational model that allows structured and semi structured data to be mixed and exported and shared across different applications. While XML provides interoperability within one application (e.g., producing and exchanging bank statements) using given schema. The RDF provides interoperability across applications like importing bank statements into a tax calculating program.

· It uses Universal Resource Identifiers (URI) as a mechanism for uniquely identifying the subject, predicate, and object of a statement. The subject, predicate, and object are each first-class citizens of the data model.

What is Web Service?
✦ Provides the ability to call a program on another server as if the program is on the same server
✦ Don't need to know what language it's written in
✦ Don't need to know what platform it's running on
✦ Similar functionality to a remote procedure call in the Oracle world – except across programming languages
✦ Use EXISTING (not necessarily new) code

SEMANTIC WEB:
✦ It is an extension of current Web in which the information is given well-defined meaning and better enabling computer and people to work in cooperation.
✦   It is allow Web to reach it is full potential" with far-reaching consequence of technology
✦ It is also known as the next generation of Web

## Tim Berners-Lee has vision of a Semantic Web which;
l   It has machine understandable semantic of information
l   million of small specialized reasoning service that provide support in automated task achievement and it is based on the accessible information

The Semantic Web in essence:
✦ The word "semantic" stands for "the meaning of":
✦ The Semantic Web is a Web which is able to describe things in a way that computers can process

METADATA AND SEMANTIC WEB:

Types of Metadata and Annotations
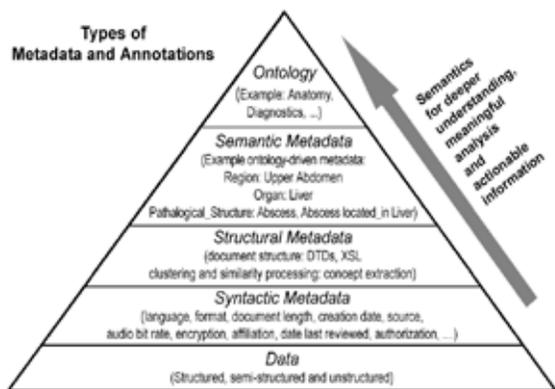
Semantic Web: one solution?
- Use RDF: to describe web resource
- Use Dublin Core in RDF for documents
- Extend metadata to other object/entities (beyond Dublin Core)
- Use HTML/XHTML only for display of information
- Use ontologies to find relationship among concepts and consequently documents/objects
- For that Build Inference engines using Predicate Logic also

ONTOLOGY:
The semantic Web is essential based on ontologies
- It is formal and consensual specifications of conceptualizations.
- It is providing a shared and common understanding of a domain that can be communicated across people and application systems

What is semantic web for?
- Integrating - trying to solve the problem of data and service integration
- Searching - Providing better communication between human and computers by adding machine-processable semantics to data.

Semantic Integration:
Here some semantic integration mentioned;
- Top Down approach: It is building up different domain ontologies for better data integration and communication within the domain:
- PapiNet.org: Vocabulary for Paper Industry
- BPMI.org: Vocabulary for exchanging Business Process Models
- XML-HR: Vocabularies for human resources (HR)
- DMTF: It is distributed Management Task Force: Vocabularies for managing enterprises

Semantic Searching:
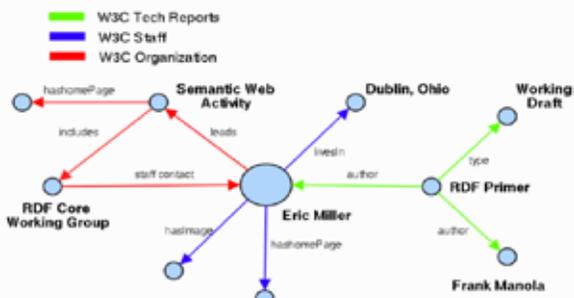
The Semantic web is useful in LIS:
In this article there 3 main useful are available in LIS field. Which are as under;
- Information Retrieval
- Indexing Web Documents
- Information Retrieval Models

The Information Retrieval model is characterized by four parameters:

- Representations for documents and queries.
- Matching strategies for assessing the relevance of documents to a user query.
- Methods for ranking query output.

- Mechanisms for acquiring user relevance feedback.

IR models can be classed into four types like that set theoretic and algebraic and probabilistic and hybrid models.

Semantic Metadata:
The Metadata is structured information which is describes, explains, locates or otherwise it makes easier to retrieve and use or manage an information resource. Metadata is called data about data or information about information also. Metadata can describe resource at any level of aggregations. It is describing a resource with metadata allows it to be understood by both humans and machines in ways that promote interoperability.

It can describe a collection, a single resource or a component part of a larger resource (for example, a photograph in an article). Just as catalogers make decisions about whether a catalog record should be created for a whole set of volumes or for each particular volume in the set, so the metadata creator makes similar decisions. For example, a metadata record could describe a report, a particular edition of the report or a specific copy of that edition of the report. Metadata can be embedded in a digital object or it can be stored separate. Metadata is often embedded in HTML documents and in the headers of image files. The storing of metadata with the object it describes ensures the metadata will not be lost and obviates problems of linking between data and metadata. It is helps ensure that the metadata and object will be updated together.

WHAT DOES METADATA DO?
The important reason for creating descriptive metadata is to facilitate discovery of relevant information. In addition to resource discovery the metadata can help organize electronic resources and facilitate interoperability and legacy resource integration and than provide digital identification and support archiving and preservation. Here define in short the digital identification and archiving and preservation;

Digital Identification
Most metadata schemes include elements such as standard numbers to uniquely identify the work or object to which the metadata refers. The location of a digital object also is given using a file name, URL (Uniform Resource Locator) or some more persistent identifier such as a PURL (Persistent URL) or DOI (Digital Object Identifier). The Persistent identifiers are preferred because object locations often change, making the standard URL (and therefore the metadata record) invalid. The actual elements that point to the object and the metadata can be combined to act as a set of identifying data. It is differentiating one object from another for validation purposes.

Archiving and Preservation:
The metadata efforts center on the discovery of recently creates resources. However, there is a growing concern that digital resources will not survive in usable form into the future. The digital information is fragile and it can be corrupted or altered intentionally or nationally. It may become unusable as storage media and hardware and software technologies change. The format migration and perhaps emulation of current hardware and software behavior in future hardware and software platforms are strategies for overcoming these challenges.

Metadata, it is key to ensuring that resources will survive and continue to be accessible in the future. The Archiving and preservation require special elements to track the lineage of a digital object where it came from and how it has changed over time and to detail its physical characteristics and to document its behavior in order to emulate it on future technologies.

The Semantic metadata refers to the metadata that are formally modeled based on their context, thus giving them meaning. The way that current service oriented infrastructure handles and manages services metadata is not adequate and effective for metadata to help services discovery and knowledge sharing.

CONCLUSION
The internet has evolved rapidly over the last few decades. Effective extraction of query relevant information present within documents on the web is a nontrivial task. The Web remains essentially a tool to allow humans to access information by ICT. The movement from Web 1.0 to Web 3.0 shows the drastic changes, the internet has undergone to

make life simpler and easier for man. The next generation of Web, it will extend the Web's capability through the increased availability machine processable information. These machines are processable descriptions of Web information resources are called metadata and are associated with ontologies or conceptualizations of the domain of application. The Metadata and associated ontologies then allow more intelligent soft-

ware systems to be written automating the analysis and exploitation of Web based information.

This way that current service oriented infrastructure handles and manages services metadata is not adequate and effective for metadata to help service discovery and knowledge sharing.

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