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Microcontroller Based Automated Water Level Sensing and Controlling: Design and Implementation Issue

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Abstract
The tremendous growth in the volume of data and with the terrific growth of number of web pages, traditional search engines now a days are not appropriate and not suitable anymore. Search engine is the most important tool to discover any information in World Wide Web. Semantic Search Engine is born of traditional search engine to overcome the above problem. The Semantic Web is an extension of the current web in which information is given well-defined meaning. Semantic web technologies are playing a crucial role in enhancing traditional web search, as it is working to create machine readable data. but it will not replace traditional search engine.In this paper we made a brief survey on various promising features of some of the best semantic search engines developed so far and we have discussed the various approaches to semantic search. We have summarized the techniques, advantages of some important semantic web search engines that are developed so far.The most prominent part is that how the semantic search engines differ from the traditional searches and their results are shown by giving a sample query as input.

Keywords: *RDF,OIL, DAML+OIL, OWL, QDEX.*

Introduction

The rapid growth of Internet has given user an easy way of accessing information and services. Web is a hugesemi structured database that provides with vast amount of information. With ever-increasing information overload, we are facing new challenges for not only locating relevant information precisely but also accessing variety of information from different resources automatically. Efficient searching is required to get high quality results which are based on pertinent matching between well-defined resources and user queries. When users use search engines to search for specific information, the quality of the search results will be improved significantly if they make use of advanced Techniques. Most of the traditional search engines getthe answers syntactically correct but larger in amount. The Semantic allows the information to be precisely described in terms of well defined vocabularies. Semantic Web is gaining momentum. A semantic search engine gives selected results which the user is searching for. The main objective of Semantic Web is to make Webcontent understandable not only by humans, but also machine understandable. We need to ensure that semantics are not lost during the whole life cycle of information retrival.Various semantic search engines developed so far differ from each other through the results obtained & technologies involved which can be discussed in detailed in later sections.

Traditional search engine & its limitations

Present World Wide Web is the global database that lacks the existence of a semantic structure and hence it becomes difficult for the machine to understand the information provided by the user in the form of search strings. As for results, the search engines return the ambiguous or partially ambiguous result data set. Semantic web is being developed to overcome the following main limitations of the current Web.

Limitations

1. The web content lacks a proper structure regardingthe representation of information.
2. Ambiguity of information resulting poorinterconnection of information.
3. Unable to deal with enormous number of users andcontent ensuring trust at all levels.

4. Incapability of machines to understand the provided information due to lack of a universalformat.
5. Automatic information transfer is lacking.

Semantic web search engine

The semantic search highly improves search accuracy of the query related data and the search engine delivers the exact content, the user intent to know. There's no denying the power and popularity of the Google search engine. But there are other ways to search the web, using semantic search engines. By using semantic search engine we will ensure that it results in more relevant and smart results. The search engines are able to compare or extract the data and gives very relevant results for the queries. The semantic web aims to provide an extra- machine understandable layer, which will considerably simplify programming and maintenance effort for knowledge-based web service[1].Many semantic web languages have been developed like RDF,OIL, DAML+OIL and OWL.

Summary of various semantic websearch engines

By going through the literature analysis of some of the important semantic web search engines, it is concluded that each search engine has some relative strengths. A summary is given in the below which summarizes the techniques, advantages of some of the important semantic web search engines that are developed so far.

XSEarch involves a simple query language, suitable for anaïve user. It returns semantically related document fragments that satisfy the user's query. Query answers ranked using extended information-retrieval techniques and are generated in an order similar to the ranking. Advanced indexing techniques were developed to facilitate efficient implementation of XSEarch[8].The performance of the different techniques as well.

XCDSearch is a context-driven search engine. It uses keyword-based queries as well as loosely structured queries, using a stack-based sort-merge algorithm. It employs Object-Oriented techniques for answering queries. The keyword query is answered by returning a sub graph that satisfies the search keywords[5] It builds the relations between data elements based solely on their labels and proximity to one another, while overlooking the contexts of the elements, which may lead to erroneous results. It employs stack-based sort-merge algorithm employing context driven search techniquesfor determining the relationships between the different unified entities.

Hakia is a general purpose semantic search engine that search structured text like Wikipedia. Hakia calls itself a "meaning-based (semantic) search engine". They provide search results based on meaning match, rather than by the popularity of search terms. The presented news, Blogs, Credible, and galleries are processed byhakia's proprietary core semantic technology calledQDEXing.

Swoogle is a crawler-based indexing and retrieval system for the Semantic Web documents. It analyzes the documents it discovered to compute useful metadata properties and relationships between them. The documents are also indexed by using an information retrieval system which can use either character N-Gramor Uri's as terms to find documents matching a user's query or to compute the similarity among a set of documents. One of the interesting properties computedfor each Semantic Web document is its rank -a measureof the document's importance on the Semantic Web

Kosmix is the first general purpose topic explorationengine to harness the Deep Web using a federated search Approach.Kosmix lies at the intersection of twoimportant trends topic exploration and the Deep Web.Topic exploration is a new approach to informationdiscovery on the web that satisfies certain use cases notserved well by conventional web search. The Deep Web,an inhospitable region for web crawlers, is emerging as asignificant information resource. Focus on the Kosmixapproach to query transformations and caching, which isessential to ensure reasonable performance.

Falcons Concept Search, a novel keyword-based ontology search engine is developed to facilitate concept sharing and ontology reusing[6]. It integrates concept level search and ontology-level search by recommending ontology and allowing filtering concepts with ontology Through this users can quickly find ontology that satisfy their needs and present several supportive techniques including a new method of constructing virtual documents of concepts for keyword search, a popularity- based scheme to rank concepts and ontology.

Watson is a gateway for the Semantic Web, which has been guided by the requirements of Semantic Web applications and by lessons learnt from previous systems. It uses Ontology crawling exploration technique[7]. It provides explicit and implicit relations between ontology, providing rich, semantic access to data, focusing on semantic quality. It exploits the strengths of semantic technologies to provide fundamental functionalities for a more suitable access to online knowledge.

Conclusion

This paper gives a brief overview of some of the best semantic search engines that uses various approaches in different ways to yield unique search experience for users. It is concluded that searching the internet today isa challenge and it is estimated that nearly half of the complex questions go unanswered[4].Semantic search has the power to enhance the traditional web search.Wheather a search engine can meet all these criteria continues to remain a question. Future enhancements include developing an efficient semantic web search engine technology that should meet the challenges efficiently and compatibility with globalstandards of web technology.

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