

Obsolete Data Set Replacement with Semantic Data Set Using Tourism Ontology

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Abstract

Internet is the network of info. It is the popular source of data in present days, every one use it to get the information. Data is the core component which is distributed among the network as such multiple users can access it at the same time. For strangers to discover the address via internet is very easy today. But the data present on it is changing day to day; to update info on all resources on the network is complex. Ontology is the network of semantic facts connected in a manner to represent the relationship among facts. Tourism has been growing exponentially in present day. The main goal of this paper is to replace the obsolete data present over internet with the semantic data using ontology.

Keyword: Ontology, Semantic, Facts, Network etc.

Introduction

Construction of domain specific ontology is one of the growing techniques in present era for semantic info representation and its effective utilization. The domain of tourism is no omission. Vast volume of facts is present in the mode of document, picture etc. However, the info is underutilized because of lack of application of data processing technique. In developing countries, such as India, the decision making is still primarily based on human experts and governmental policies. Factual corroboration with the help of existing data is still missing from the overall policy making [1]. Ontologies are complex systems of axioms in which unanticipated consequences of changes are both frequent, and difficult for ontology authors to apprehend [2].

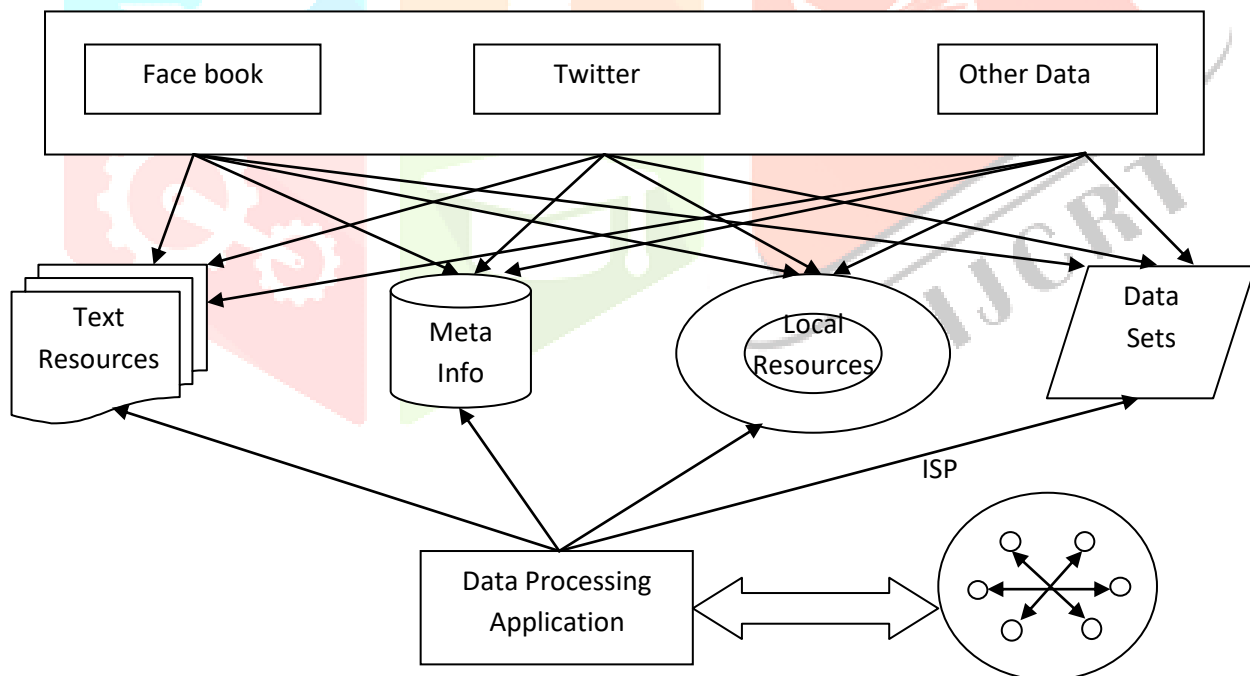


Fig. 1 Information present on Web

There are various web applications which collect data from external and internal resources which spread over the internet. The data collected in the form of text, pictures etc. which is further processed by the various data processing applications and distributed through internet service provider over internet. In present era the requirements are changing very fast and the data becomes obsolete very fast. So, to update the data on all resources on same time is difficult to achieve.

Related work:

Over the past few years, many ontology development and query languages have been developed and this is still a continuing effort. While building an ontology-based system, it first requires deciding which ontology language is to be used in a given context. Numerous ontology languages were developed in the last few years.

As in [1] author performed the automatic relation extraction from agriculture text for ontology construction. As in [2] author performed improving the verification of ontology authoring action. As in [3] author explains the use of ontology for effective knowledge modeling and information retrieval. Research on ontology authoring has experienced a resurgence in recent years [4, 5, 6], due at least in part to the increased availability of change-logs for ontology development. Web-Protégé, for example, produces detailed change-logs, which can form the basis of a rich and informative analysis of ontology authoring activities [6].

Proposed Model

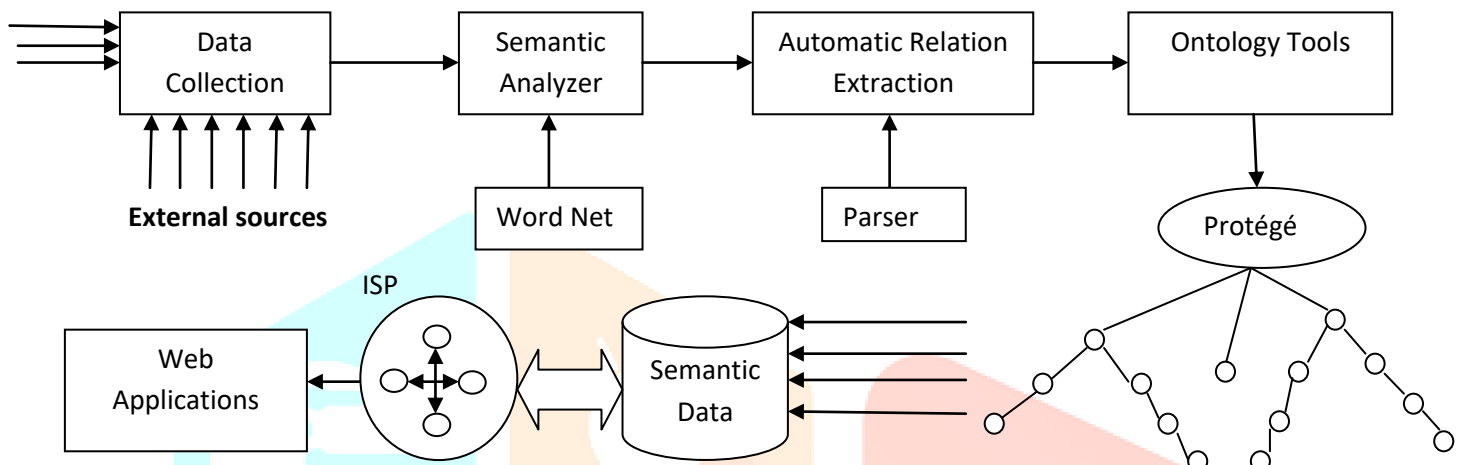


Fig. 2 Semantic Data Model

As present in the fig. 2 the Proposed Model having various phases which are as follows.

Data collection:-

Data is the core component of every web application. It is the collection of Meta facts so connected to make a useful info. In this phase of proposed model the data is collected from various sources, it can be external as well as internal; it can be in the form of facts, raw data and Meta data and passes to the semantic analyzer phase.

Semantic Analyzer:-

Semantic mean meaningful. Semantic analyzer is a program that works out the semantic structure of sentences. In this module data is semantically checked with the help of word net the data which have semantic meaning is filtered out from this phase. In this module there is a mapping between the data collection and word net. Word net is basically a library of lexical English words which has some meaning in the real world. Data is mapped with the word net and separated out the unused data.

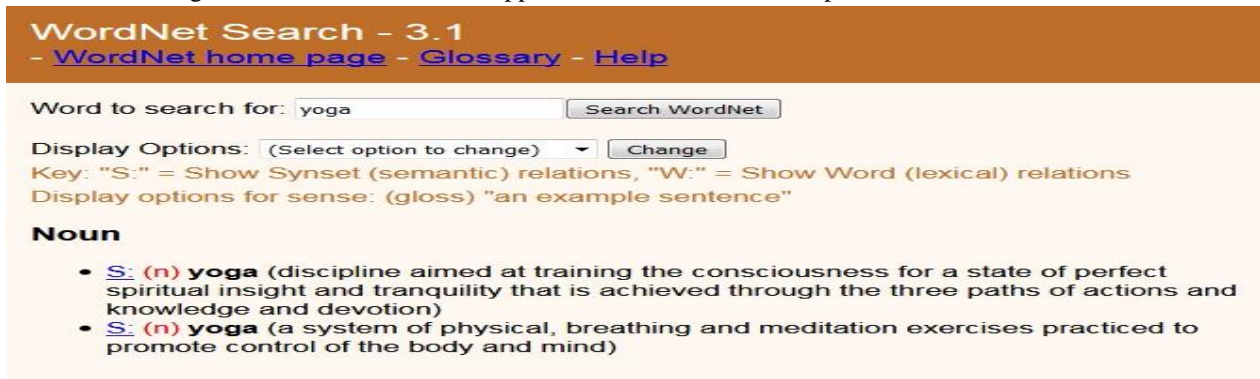


Fig. 3 Example of word net

Automatic Relation Extraction:-

Automatic relation Extraction is a program to extract relation using natural language processing. In this phase the semantic data is distributed in relation and properties with the help of parser. In English language relation is defined by words like is-a, has etc. There are various parsers available like Stanford etc.

Stanford Parser

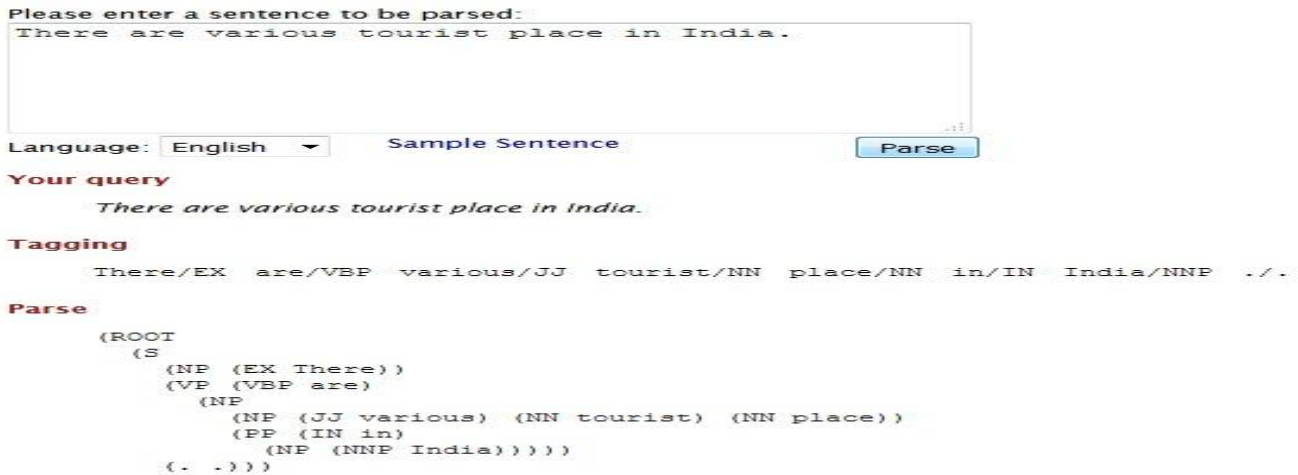


Fig. 4 Example of Parsing

Protégé:-

Protégé is the famous tool used for ontology construction. It is available in various versions. It is open source ontology building framework. It provides a GUI to define ontology. It support various frame format like RDF, Xml, Obo, Turtle etc. There are large number of plugin tool available in market for Protege that extend the platform's functionality. It has various versions such as Protege 1.0, 2.0, 3.0, 4.2, 4.3 and 5.0. Its latest version is Protege 5.2.

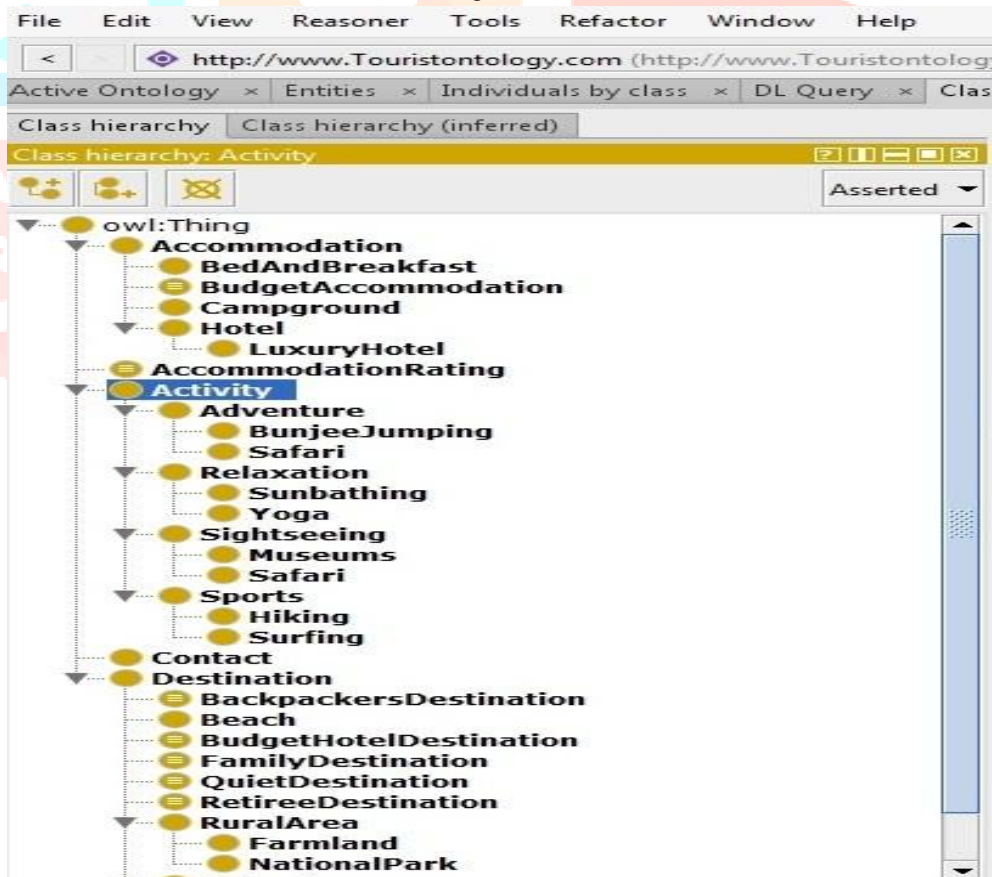


Fig. 5 Classes of Semantic Data

Conclusion

The conclusion of the paper is that we can replace the obsolete data over network using ontology. It is easy to update and consistency can be maintained at peak level. It also authenticates data sets. Making ontology of semantic data is a good technique to solve the problem of data inconsistency and updating data on a large scale.

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