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Web User Trust Relationship Prediction based on Evidence Theory

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Abstract - *Social networks are popular movements on the web. Trust can be used effectively on the Semantic Web as annotations to social relationships. In this paper, we present a level approach to integrating trust, provenance, and annotations in Semantic Web systems. We describe an algorithm for inferring trust relationships using provenance information and trust annotations in Semantic Web-based social networks. Then, we present two applications that combine the computed trust values with the provenance of other annotations to personalize websites. The Trust system uses the trust to compute personalize recommended movie ratings and to order reviews. We believe that these two systems illustrate a unique way of using trust annotations and provenance to process the information on the Web.*

Key Words: **network, annotations, evidence theory, the web of trust, trust Prediction**

1. INTRODUCTION

Tracking the provenance of Semantic Web metadata can be very useful for filtering and aggregation, especially when the trustworthiness of the statements is at issue. In this paper, we will present an entirely Semantic Web-based system of using social networks, annotations, provenance, and trust to control the way users see the information.

You can find the number of information on the web. Some information on the web can be trusted some may not. In order to find out whether particular information displayed on the web can be trust or not, we proposed a system where web information is predicted as trustable based on the rating of various users. Here in this system users will read the information displayed on the web and will rate the information. The rating score is used as evidence, based on the ratings of various users system will predict whether the information provided on the web can be trusted or not. This system uses user ratings to infer the trust relationship between users. The rating score of the user is used as evidence to find out whether the information displayed on the web is trustable or not. Mining web user trust relationships is important in web data credibility analysis. Motivated by the imprecise nature of trustiness, we propose a novel web user trust prediction method based on evidence theory, which uses user ratings to infer trust relationships between users, where each rating score is treated as evidence. This system will help build trust between web users. Users can easily trust the content displayed on the website. This system will help to reduce false content to be displayed on the web.

Networks have become a popular movement on the web as a whole, and especially on the Semantic Web. The Friend of a Friend (FOAF) vocabulary is an OWL format for representing personal and social network information, and data using FOAF makes up a significant percentage of all data on the Semantic Web. Within these social networks, users can take advantage of other ontologies for annotating additional information about their social connections. This may include the type of relationship (e.g. "sibling", "significant other", or long lost friend"), or how much they trust the person that they know. Annotations about trust are particularly useful, as they can be applied in two ways. First, using the annotations about trust and the provenance of those statements, we can compute personalized recommendations for how much one user (the source) should trust another unknown user (the sink) based on the paths that connect them in the social network and the trust values along those paths. Once those values can be computed, there is a second application of the trust values. In a system where users have made statements and we have the provenance information, we can filter the statements based on how much an individual user trusts the person who made the annotation. This allows for a common knowledge-based that is personalized for each user according to who they trust.

1.1 TRUST ON THE SEMANTIC WEB

1. *Identification and Authentication:* Verifying the identity of the user, process or device to allow access to a resource or information system.

2 *Authorizatio*n: The permission to use a resource.

3. Integrity: The property which doesn't allow the data to be modified in any unauthorized manner while in storage, processing.

4. *Non-repudiation*: Non-denial by either sender or receiver of having sent or received the information, respectively.

5. *Confidentiality:* authorized restriction and information access

6. *Privacy*: This is a restricting the access of customer according to organizational policy and law

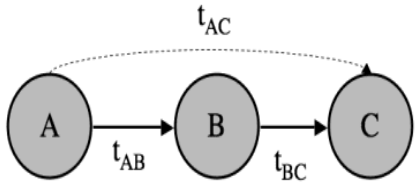
· Background and Related Work

· Issues for Inferring rust

· Incorporating Path Length

· Incorporating Trust Values

· Full Algorithm for Inferring Trust



2. EVIDENCE THEORY

Dempster Shafer Theory is given by Arthure P.Dempster in 1967 and his student Glenn Shafer in 1976.

This theory is being released because of the following reason:-

· Bayesian theory is only concerned about single pieces of evidence.

· Bayesian probability cannot describe ignorance.

DST is an evidence theory, it combines all possible outcomes of the problem. Hence it is used to solve problems where there may be a chance that a shred of different evidence will lead to some different results.

Consider all possible outcomes.

1. Belief will lead to believe in some possibility by bringing out some evidence.
2. Plausibility will make evidence compatibility with possible outcomes.

Characteristics of Dempster Shafer

Theory:

· It will ignorance part such that the probability of all events aggregate to 1.

· Ignorance is reduced in this theory by adding more and more pieces of evidence.

· Combination rule is used to combine various types of Possibilities.

Data Flow Diagram

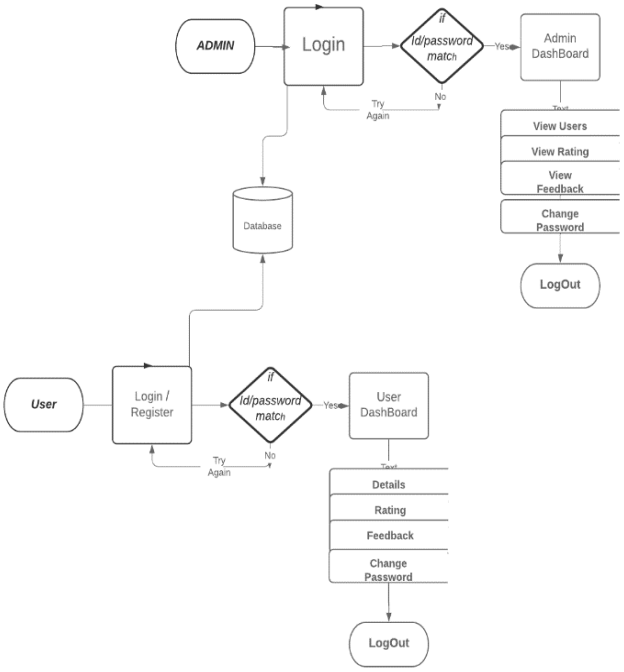


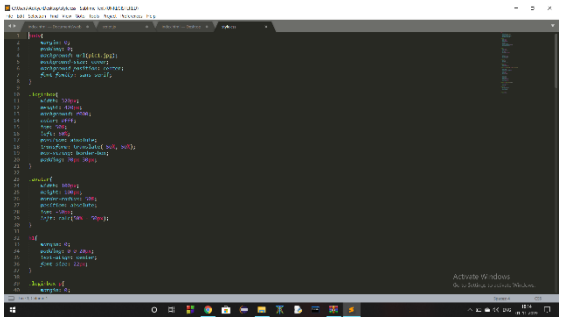
Chart -1: Flow Diagram

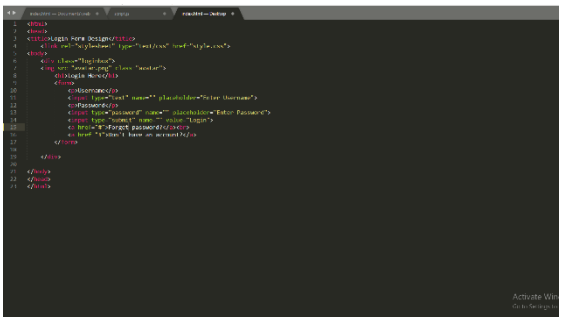
3. CONCLUSION

In this paper, we have presented a two-level approach to integrating trust, provenance, and annotations in Semantic Web systems. First, we presented an algorithm for computing personalized trust recommendations using the provenance of existing trust annotations in social networks. Then, we introduced two applications that combine the computed trust values with the provenance of other annotations to personalize websites. In Film Trust, the trust values were used to compute personalized recommended movie ratings and to order reviews. Profiles in Terror also has a beta system that integrates social networks with trust annotations and provenance information for the intelligence information that is part of the site. We believe that these two systems illustrate a unique way of using trust annotations and provenance to process the information on the Semantic Web.

RESULT

Mining web user trust relationship is important in web information credibility analysis. Motivated by the imprecise nature of trustiness, we propose a novel web user trust prediction method based on evidence theory, which uses user ratings to infer trust relationships between users, where each rating score is treated as an evidence.





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