Web Service Recommendation via Exploiting Location and QoS Information

ABSTRACT:

Web services are integrated software components for the support of interoperable machine to machine interaction over a network. Web services have been widely employed for building service-oriented applications in both industry and academia in recent years. The number of publicly available Web services is steadily increasing on the Internet. However, this proliferation makes it hard for a user to select a proper Web service among a large amount of service candidates. An inappropriate service selection may cause many problems (e.g., ill-suited performance) to the resulting applications. In this paper, we propose a novel collaborative filtering-based Web service recommender system to help users select services with optimal Quality-of-Service (QoS) performance. Our recommender system employs the location information and QoS values to cluster users and services, and makes personalized service recommendation for users based on the clustering results. Compared with existing service recommendation methods, our approach achieves considerable improvement on the recommendation accuracy. Comprehensive experiments are conducted involving more than 1.5 million QoS records of real-world Web services to demonstrate the effectiveness of our approach.
EXISTING SYSTEM:

When developing service-oriented applications, developers first design the business process according to requirements, and then try to find and reuse existing services to build the process. Currently, many developers search services through public sites like Google Developers (developers.google.com), Yahoo! Pipes (pipes.yahoo.com), programmable Web (programmableweb.com), etc. However, none of them provide location-based QoS information for users. Such information is quite important for software deployment especially when trade compliance is concerned. Some Web services are only available in EU, thus software employing these services cannot be shipped to other countries. Without knowledge of these things, deployment of service-oriented software can be at great risk.

DISADVANTAGES OF EXISTING SYSTEM:

1. Some developers choose to implement their own services instead of using publicly available ones, which incurs additional overhead in both time and resource.

2. Effective approaches to service selection and recommendation are in an urgent need.
PROPOSED SYSTEM:

This paper investigates personalized QoS value prediction for service users by employing the available past user experiences of Web services from different users. Our approach requires no additional Web service invocations. Based on the predicted QoS values of Web services, personalized QoS-aware Web service recommendations can be produced to help users select the optimal service among the functionally equivalent ones. From a large number of real-world service QoS data collected from different locations, we find that the user-observed Web service QoS performance has strong correlation to the locations of users. Google Transparency Report1 has similar observation on Google services. To enhance the prediction accuracy, we propose a location-aware Web service recommender system (named LoRec), which employs both Web service QoS values and user locations for making personalized QoS prediction.

ADVANTAGES OF PROPOSED SYSTEM:

1. Improves the recommendation accuracy and time complexity compared with existing service recommendation algorithms.

2. Comprehensive analysis on the impact of the algorithm parameters is also provided.
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SYSTEM ARCHITECTURE:

HARDWARE REQUIREMENTS:

- System : Pentium IV 2.4 GHz.
- Hard Disk : 40 GB.
- Floppy Drive : 1.44 Mb.
- Monitor : 15 VGA Colour.
- Mouse : Logitech.
- Ram : 512 Mb.
SOFTWARE REQUIREMENTS:

- Operating system: Windows XP/7.
- Coding Language: JAVA/J2EE
- IDE: Netbeans 7.4
- Database: MYSQL