

Web Mining: Application for Web Based Distance Education Platform

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Abstract — Web based education growing very rapidly. With the development there are some advantages in education field. This paper discusses how web mining technology can be helpful to the distance education system their techniques and usefulness in a user friendly manner.

Keywords -Web mining, web structure mining, web content mining, web usage mining.

I. INTRODUCTION

Now a day web is a collection of data of almost every type of information and extracting that information from the web is not an easy job at all. Hence here we would discuss how web mining technique can be helpful to make easy web based distance education system.

II. WEB MINING

Extracting useful information or pattern from the web data is called web mining. Web mining is not an easy and not same as a data mining. We Know that web content different types of information at different location anywhere in the world makes it difficult for mining of data from web. Web mining has three type of technique for mining of information.

1. Web content mining.
2. Web usage mining.
3. Web structure mining.

1. Web content mining:

In the web mining technology, web content is useful tool to find information from the network, data and documentation. Web information resource now becomes main source of information. We know very well that information available on web is heterogeneous and it's made up of text, image, audio, video and metadata. Hence web content mining is multimedia form of web mining.

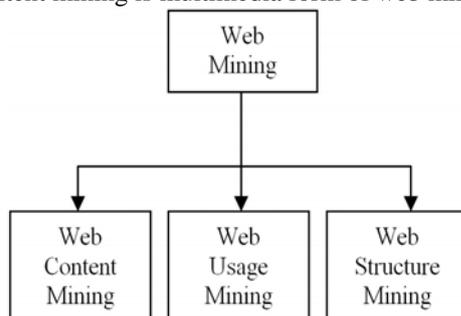


Fig: Types of Web Mining

2. Web Usage Mining:

Web usage mining is useful when we have to extract information about user usage pattern. We can find out information of user behavioral approach to a particular web site. Web usage mining extracts information from server logs, network server, proxy server logs, browser logs, user dialogue of transaction information. Web mining also useful to find out and analyze learning information of all students in e-learning environment.

3. Web Structure mining:

Web structure mining is useful to analyze hyperlinks and link structure on the web for extracting information and patterns. Web mining is also used in search engine to rank the web pages from different web sites. Web personalization and recommendation system is also based on web structure mining.

III. PROCEDURE FOR WEB MINING

A. Step of web mining is start from the pretreatment.

Pretreatment is most important aspect of web mining. Quality of web mining is dependent on pretreatment. For pretreatment we have to do data cleaning, identification of ID, session identification, path supplement and event recognition.

1. Data cleaning:

Data cleaning is useful because it cleans the content which are irrelevant with data analysis and data mining in log file.

2. User identification:

We know that log file only records the IP address of the proxy server. Hence it uses the cookie technology, or heuristic rule to help to find user identification.

3. User session identification.

During the web usage user may visit many sites. Session identification stores all server logs of user. Session identification uses timeout to identify, if request time of page goes out to a certain limit then user start new session.

4. Path supplement.

Path supplement confirm some logs records which are missing. Path supplement add this missing information to session file.

5. Event ID.

It is used to define event for mining activities, it is related to knowledge of what user needs. Event ID has two ways. First reference length another maximal the forward reference.

B. Mining process.

1. Associated mining technology.

This technology is the knowledge discovery that a user access to the knowledge of sequence association rule. Association rule mining is web mining technique to extract information of visited pages by user and their session. Apriori algorithm is common association rule. Due to huge data on web association rule is time consuming process. Researcher focuses on technical reduction of search space. Association can be used to search for user access session and pages.

2. Cluster analysis.

In cluster analysis we can group the user with similar properties and data item together. Target user clustering and web clustering is the way to web usage mining. Classify the user by standard of browsing mode is called target user clustering. User classification is used to provide personalized information service for different user. To establish a group of pages with related content can be done by web clustering.

3. Classification.

Similarity and difference between data of web can be tap by classification rule. When the new data added to database is classified in suitable category of similarity and dissimilarity. Web mining classification extracts the information of user which access the server. User identification can be extract by the information register by the user on that web sites. By using classification we can get brief information about types of user. The methods which is used in classification are Bayesian method, Decision tree etc.

WEB MINING BASED DISTANCE EDUCATION SYSTEM

The distance education system consist three parts. Teaching resource library, learning platform and user. Education resource library is a storage server to store different types of resource which is related to education. User are the

learner of that web based system. Learning platform is web server that gives web based teaching platform to user. Web based system which is based on web mining will improve the teaching because it will provide learning content according to user personal information.

Web based distance education is used to analyze of web logs and site files, personal information of learners learning results, learning behavior, and use data mining technique to construct valuable model which is use for improving distance education to meet the needs of different user.

Distance education websites contain user information ,learning results, behavior of learning by the use of web mining.

SUMMARY

With the use of web mining technology in distance education it is easy to analyze learner's learning process and create the personalize education. It gives more comfort to the designer and manager to re design their courses according to user interest. Web mining makes distance learning and remote teaching more dynamic. And distance education become healthier way of education

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