

ANALYZING STUDENT NAVIGATION PATH USING WEB MINING

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Abstract : This project of Analyzing Student Navigation path using web mining has been developed on JAVA and MySQL. The main objective for developing this project is to provide a user friendly environment and give everyone a chance to learn according to their learning pattern. E-Learning provides innovative courses, take any class, any time you want, anywhere you want, with no additional software to download—all you need is an internet connection. Study at your own pace and access your course when it is convenient for you. This project can be helpful to all students to improve their knowledge.

IndexTerms - E-Learning, web data mining, web mining, web log data, session data

I. INTRODUCTION

E-Learning exploits interactive technologies and communication systems to improve the learning experience. It has the potential to transform the way we teach and learn across the board. It can raise standards, and widen participation in lifelong learning. It cannot replace teachers and lecturers, but alongside existing methods it can enhance the quality and reach of their teaching, and reduce the time spent on administration. It can enable every learner to achieve his or her potential, and help to build an educational workforce empowered to change. It makes possible a truly ambitious education system for a future learning society. We are using session management and Course selection to find exact interest of student.

Pre-requisites :

i. Web Mining

Web mining is the process of using data mining techniques and algorithms to extract information directly from the Web by extracting it from Web documents and services, Web content, hyperlinks and server logs. The goal of Web mining is to look for patterns in Web data by collecting and analyzing information in order to gain insight into trends, the industry and users in general.

ii. Web log data

Web log data file is log file automatically created and maintained by a web server. The raw web log file format is essentially one line of text for each hit to the web site. This contains information about who was visiting the site, where they came from, and exactly what they were doing on the website.

iii. Session data

It contains the set of session variables held on a server that allow the continuation of a conversation with the client without the need to continually re-input data.

II. MOTIVATION

Few motivational factors of proposed system are to have good resources for students to learn. And student activity will be monitored by application and accordingly it will give suggestions to student of respective study material.

III. OBJECTIVE

The main aim of the project is to extract E-learner's or student's interested access page using web log data, time spent on a particular page based on user's session time, IP address, page memory size, browser details, operating system.

IV. LITERATURE SURVEY

1) Different Approaches of Mining Web Navigation Pattern: Survey (ICRTET'2013)

For algorithms with a single database scan, they build special data structures to store the sequences in the database. However, it may be difficult to hold all sequences of the database in the data structure.

2) Efficient data mining for web navigation pattern(2017)

One of the major problems faced by consumers while shopping at a supermarket is the inability to locate items and also to carry goods to the billing counter. In this paper, we describe a novel cost effective method to overcome these issues by creating a smart trolley using a web camera along with video processing to complete the tasks. In comparison with previous methods which utilize RFID transceivers, our solution costs 10 times lesser than its predecessors and is environment friendly as well.

3) Discovering User pattern analysis from web log data using web log expert

A future of devices connected through an Internet of Things (IoT) network will require billions of sensors that will affect costs and increase the energy requirements if not equipped with backscattering technologies such as RFID. This work shows how a quantum tunnelling RFID tag enables the use of RFIDs in new applications by minimizing battery waste and by drastically improving the range of backscattering systems.

V. PROPOSED SYSTEM ARCHITECTURE

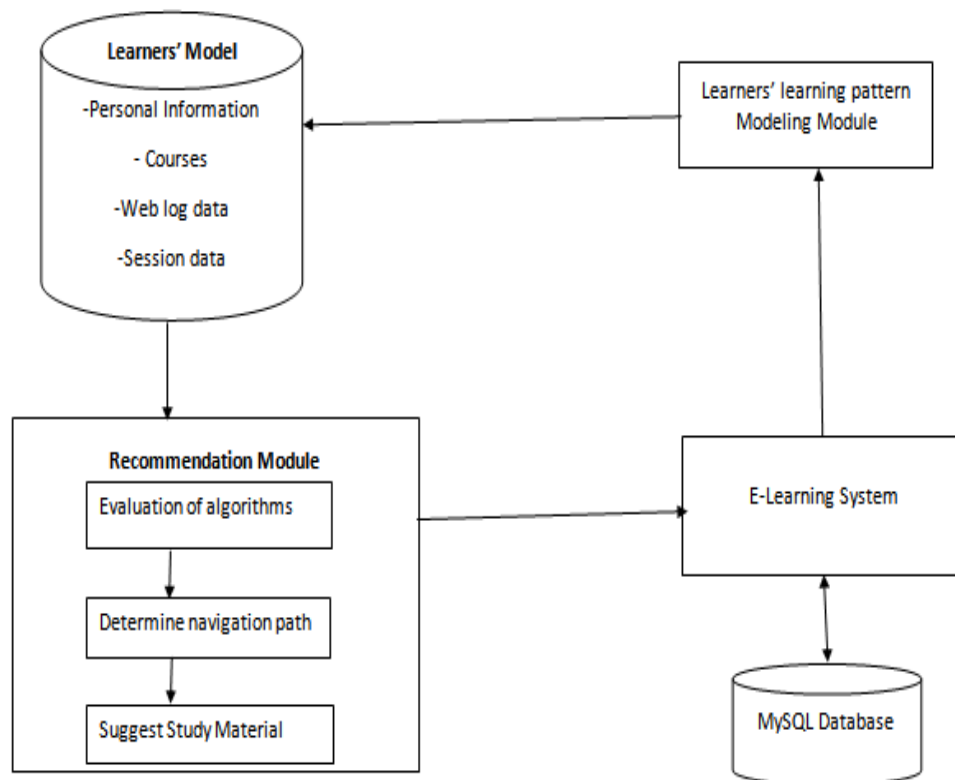


Fig.1 Proposed System Architecture

System Architecture Description

The system architecture consists of different logical models such as Learner's model, Recommendation Model, Learners' Learning Pattern Modeling Model and actual modules of E-learning system and Database or cloud. The e-learning module contains login for users through which the user will select the course set by admin.

i. Learner's Model

This model contains data provided by users during their registration to the system and their login credentials. The web log data which keeps track of the web links visited by users and session data containing time spent by users on different web pages. This data act as an input to the algorithms.

ii. Recommendation Module

This module takes the input from the Learner's model in the form of web log and session data and evaluates the algorithms to find the navigation path of the users. And after analyzing navigation path of the users, this module extracts the accurate study material and suggest to respective users on their login of e-learning website.

Algorithm

- 1) Start
- 2) Admin adds the file with file description.
- 3) System will store the file in database with file type and description.
- 4) User will login and search the content.
- 5) Searched content of the user will be compared with each word of description of every file.


```

for(allFiles in database)
  if(serchedkeyword == filedescription)
  {
    set file in hash set
  }
      
```
- 6) Find the session time of file viewd by user.


```

function getStartFile(fileId)
{
  note start time;
}

function getEndFile(fileId)
{
  note the end time;
}
      
```
- 7) Calculate the session duration.
- 8) Recommend the files according to session period.
- 9) Stop

VI. ADVANTAGES

- 1) E-learning promotes active and independent learning.
- 2) As you have access to the net 24x7, you can train yourself anytime and from anywhere also.
- 3) The video instructions that are provided for audio and video learning can be rewind and seen and heard again and again if you do not happen to understand the topic first time around.
- 4) E-Learning does make the whole learning process more entertaining.
- 5) Once developed, the course can be run as many times, at as many locations and for as many learners.

VII. LIMITATIONS

- 1) It is true that, although e-learning might be convenient and flexible, it is also a solo act. It will not be easy for all of your learners to feel comfortable when participating in online discussions and engaging more actively with their online instructors or their virtual classmates.
- 2) If your eLearning content is not built to make the most of the medium it will easily become disengaging.

- 3) Practical skills are somewhat harder to pick up from online resources.

VIII. APPLICATIONS

Internet Applications for-

- 1) Arts
Online classes for arts classes such as language, improving vocabulary and writing skills
- 2) Business
Business courses on Internet, group projects, virtual company tours
- 3) Engineering
Engineering classes on online, virtual laboratory, virtual design, team learning and group projects
- 4) Science
Virtual laboratory, design of experiments, collaborative projects
- 5) Medical
Simulation of surgical operations, diagnosis, chat room
- 6) Agriculture
Treatment of crops from time to time, training and education

IX. CONCLUSION

By applying new algorithms for preference of a page content size and session identifier algorithm which signifies user navigation interest according to webpage memory size and viewing time. This methodology is appropriate for applications in E-learning to enhance website to personalized facility.

X. FUTURE WORK

E-learning is becoming increasingly prominent in tertiary education. All available evidence points toward growing enrolments and provision from a low starting point. However, after the hype of the new economy, growing disenchantment with e-learning has replaced over enthusiasm. By applying new algorithms for preference of a page content size and session identifier algorithm which signifies user navigation interest according to webpage memory size and viewing time. This methodology is appropriate for applications in E-learning to enhance website to personalized facility.

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