

Comparative Analysis of E-Learning Platforms

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Abstract: This project “Comparative Analysis of E-Learning Platform” where the reports are created as there is a rapid evolution of technologies which has greatly affected the field of education. A recent trend in technology is the increasing number of e-learning platforms offering various free online courses and certifications enabling higher education and distance learning. A comparative analysis on the same is useful to find the most sought out courses and certifications providing a deep insight on the available technology.

Keywords: E-Learning, Educational, Business Intelligence, Intelligent Data Analysis.

1. Introduction

As the days pass by one of the most frequently used phrases besides ‘e-learning’ is a “distant learning” as it becomes more and more current topic because of our rapid change in society, and its constant development and changes brought on by the new information technologies. The term “e-learning” is defined as “any learning that involves using internet or intranet.” [5]. The main purpose of e-learning platforms is to provide students with information, as well as with practical opportunities, in order to help students to acquire certain skills and to increase their active knowledge about a given topic. E-learning is broadly inclusive of all the forms of education that makes use of technology and multimedia [7].

The Business Intelligence techniques applied to the database of Web-based Educational Systems could help instructors and other educational experts to generate statistics, analytical models, and discover new patterns from those huge volumes of data. In this paper, a framework for applying business intelligence in e-learning environments has been proposed, which increased both flexibility and performance of e-learning environments. In recent years, we have witnessed an increasingly awareness of the potential benefits of adaptivity in e-Learning [4]. That is why it is very important to develop adaptive educational systems, in order to make the learning process as effective, efficient, and motivating as possible [3]. Hence, on one hand, the proposed environment enables educational technologists to identify, analyze and monitor relevant aspects of instruction, such as different style, paths, and strategies of learning. On the other hand, such parameters may be used to adapt the learning process to each individual learner and improve the performance of learning process.

This paper represents the results of the comparison of some widely used open-source e-learning platforms from the point of their ability of adaptation to users' needs and requirements.

2. Working

The main idea of this paper is to generate a statistical report comparing each platform and display reports based on the user needs. It can also provide the information needed for each platform owner and also for instructor. Independence of learning is important for the creativity of students in producing the work to develop optimally [6]. As a user they can see the trending courses and all the information regarding the courses such as is the courses certified and the payment details the duration of the course can be seen. Also they can visualize about the learner’s

choice. i.e. in which category which course is most preferred. Also the user will be able to see the best platform for each course which is based on the ratings of other users. As a platform owner they can see the ratings for their UI and course which will be very useful for their analysis. The instructor will be able to view the details about the user and the enrollment details for their course and the rating provided to them.

A. STEP 1

As the first step of the process we should identify the requirements and its associated values. The second step is designing a single, integrated, easy-to-use, high performing information model that gathers the identified business requirements and building a dimensional schema [1].

The requirements will be useful to generate the Fact table and other tables. Here the fact table is Fact Registration and the dim tables are:

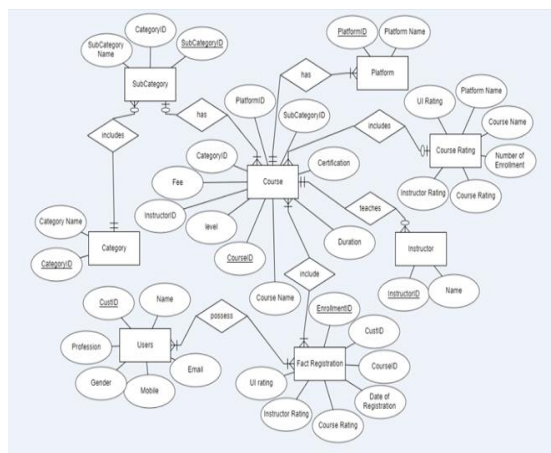


Fig. 1. ER diagram

- **Fact Registration:** This table contains the Enrollment

Id, Course Id, Course Rating, Date of Registration, Custid, instructor Rating.

- *User_dim*: It contains all the details about the User such as Name, Email, Custid, Profession, Gender, Mobile.
- *Course_dim*: This contains the details about the course and the id for category and subcategory tables. It contains Category Id, Subcategory Id, platform Id, Course Name, CourseId, level, Fee, Certification, instructorid, Duration.
- *Category_dim*: This contains the details about the category such as category name and category id.
- *Subcategory_dim*: This contains the details about the subcategory such as Subcategory ID, Subcategory name, Category id.
- *Platform_dim*: This contains details about the platform id and platform name.
- *Instructor_dim*: This contains the details about the instructor like instructor id and name.
- *Course Rating_dim*: This contains the rating details and enrollment details like UI rating, Platform name, Course name, Number of enrollment, Course rating, instructor rating.

B. STEP 2

After designing the dimensional schema, the next one is data stage and ETL processes. The ETL process was quite simple because all the data is stored in relational database. But some preprocessing steps have to be performed for transforming data into suitable shape (e.g. star schema). ETL process is a manual process because it to be processed, cleansed and transformed as per the need. The ETL process is performed to eliminate the duplicates and remove null values and store the data according to our need. After the ETL process the data can be loaded into new database and it can be used to create reports in the desired manner. ETL process normally is a manual process in which the administrator has to apply a number of general data preprocessing tasks such as, data cleaning, user identification, session identification, path completion, transaction identification, data transformation and enrichment, data integration, data reduction [2].

C. STEP 3

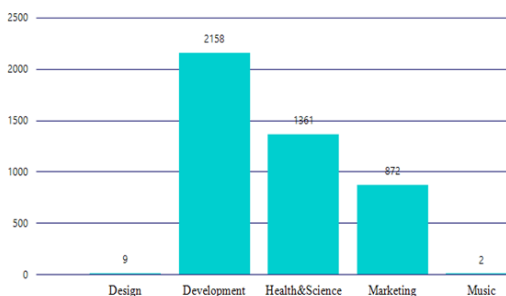


Fig. 2. Category enrollment

After the ETL process which is performed in SSIS tool the report generation is performed in SSRS tool. This is used for creating reports in a desired manner since it contains all the required items like bar graph, chart, data graph etc. This category enrollment graph is for number of enrollment in each category.

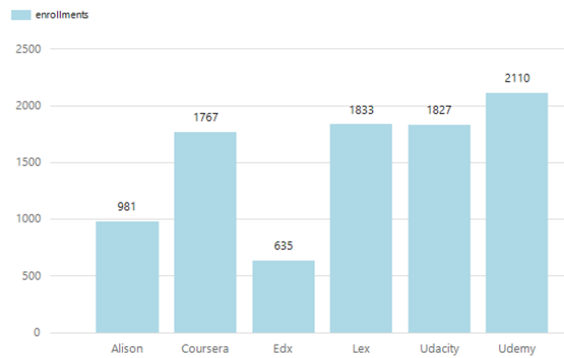


Fig. 3. Platform enrollment

This platform enrollment graph is for number of enrollment in each platform.

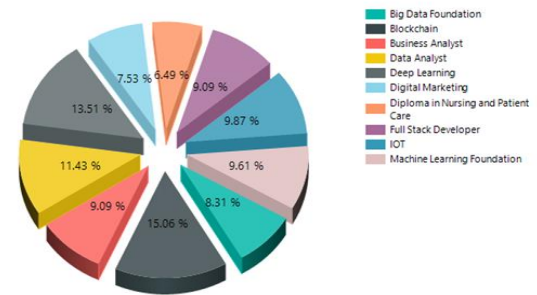


Fig. 4. Course enrollment in particular year

This is used to display the number of enrollment in course for particular year.

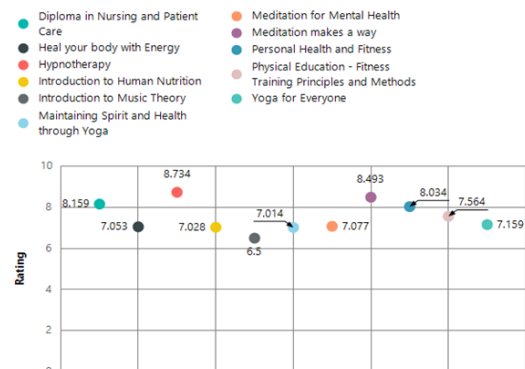


Fig. 5. UI rating

This is displaying the UI rating of two courses.

3. Conclusion

This paper we give the statistical report for all the disciplines

in each platform as this society is a growing with the need for constant learning. As our living circumstances are changing, the same can be said about learning and teaching. The e-learning platforms represent the new teaching and learning models. At older days there were only few E-Learning platforms but today we have many platforms with variety of courses which is needed for daily updation. So to know the trending courses, best platform and other necessary details this will help us.

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