

# Design and Development DataBase System of E-Learning Platform for Iraqi Higher Education

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**Abstract:** Any educational institution aimed at developing towards e-learning and creating a more interactive environment and use in all fields of government institutions. The higher education of Iraq and some of the countries in the Middle East suffer from weak use of information technology in general and weak use of e-learning in particular. Therefore, Iraqi higher education is in dire need of an electronic educational system that solves most of the problems experienced by most educational institutions, so In this article, a database design, which was developed to create an educational institution as a Learning Management System, is described. In this sense, developed Learning Management System consists of basis of Virtual Education Institutions. In this study, a fully relational database design has been realized in compliance and got ready to be used as Virtual Education Institutions. This system can be used for any required education institute and it can be run within the same interface. In LMS that will be generated, a faculty or institute can be defined and academic and all administrative processes of the defined institute can be managed with the designed system. Proposed database design has been used in a LMS of Iraqi higher education In this system, many processes like indexing, uploading, downloading, production and editing of web based learning materials can also be performed easily and safely.

**Keywords:** E-learning platform, Web-Based Distance Learning Systems, Relational Database Design.

## 1. Introduction

E-learning is one of the most important and vital ways of learning these days, which plays an important role in creating an interactive environment for every person who is experienced and trained wherever it is and whenever. The educational platform provides the environment for exchanging information more easily and quickly by using presentations, For Beginners (trainees). The Iraqi Ministry of Higher Education has always been stimulating the development and establishment of e-learning platforms to be incorporated and used in Iraqi education systems. The Internet and powerful worldwide interchanges have predominantly changed how people approach data. The present age of students is experiencing childhood in the advanced condition with PCs, tablets, broadband speed, remote availability, mobiles telephones, iPods, and different apparatuses and progressively, more it moves toward becoming parts of their lives, and it doesn't stop here however their life subjects turn out to be additionally digitized and are influenced accessible through this every day to up and coming computerized gadgets, and data is accessible anyplace and whenever on any point possible. The present learning approaches utilized by schools in the extraordinary inverse with how they learn and connect outside of the classroom [1].

E-learning confides in current data and correspondence advancements for distribution of learning substance. Learning procedure or its feeling is sorted out as per either synchronous or asynchronous. Elearning, which has been developed as a learning solution, represents the distance education with the flexibility of educational software and process covering synthesis of different technologies[2]

Because of these upgrades, instruction exercises have started to be performed by utilizing the web and system innovation. Numerous technological instruments like electronic books, electronic sends and conference environments have additionally taken dynamic parts in these sorts of training exercises. Because of expanding rate in utilizing these apparatuses and related training strategies, a specialized curriculum framework has showed up. The entire training framework is called as "Electronic Distance Education System" (WBDES). A standout amongst the most essential focal points of WBDES is having the capacity to give asynchronous training inside a virtual instruction condition. In a WBDES, understudies can without much of a stretch access to the instructive substance, which was exchanged by teachers to the framework and exploit these sources by utilizing diverse instructive devices. On account of its points of interest on costs, WBDES is likewise wanted to be utilized instead of different models or frameworks, been an essential inclination purpose behind the general population who suffer shortage of time and can not take dynamic part in the area where training exercises are performed. By and large, Web-based Distance Education Systems are called as Learning Management Systems (LMS)[3], In this study, a database show, which was outlined and created to be utilized for Learning Management Systems, is portrayed. The database show was created in a relational structure and intended to be reasonable for LMS, Additionally, the created demonstrate has a compact, effectively available and simple to-oversee structure and can be utilized as a part of long haul considers. With this database show, a virtual instruction foundation can be set up and distributed by means of required interface structures. In the related Learning Management System, a personnel or foundation can be characterized and all scholarly and regulatory procedures of these organizations can be made do with the assistance of created database show.

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## 2. Analysis and Design Database for a Learning Management System

Learning objects are basically units of content to be contemplated by individuals through an electronic platform. We suppose that, with regards to such a stage, students are the "clients" who consume the substance, and that authors are the individuals who deliver the learning objects, Concerning content, preparing and learning offerings should come in reusable packages that can be created autonomously of a conveyance medium and got to progressively[4].

Firstly, In order to build a database for the educational platform must be a structure of this rule is true and contains many objects and need to relations between the tables and you need to choose the correct data type of the fields listed. Objects consist of two types of tables and stored procedures, Each of these types will be used to build the database for the electronic learning platform. Design of tables has been implemented The educational platform is mainly focused on the courses, so We need a table to create courses for the platform, so these courses contain videos and text files Therefore, we need to create a special table for text files and a special table for videos. This course may be presented on specific times or days, for example every week. Or every month, we need to design a special table for lectures and connect them with the course table using one to many relationship.

As a security aspect of the educational platform, we organize people (we organize the management of the contents of the educational platform) so we need to create a table for the registrants to the platform, which is the user table. The user who registers on the site (the platform) is classified here into three categories (professor, students, Unregistered people on the platform), Here we need to create a table of user permissions which will connect this table with the users table using one to many relationship. For the user we create a profile of his own so we have created a table named Profile to know each user in any course organizer or participant we created a table named (course join).

As part of the organization and arrange for the addition of courses in the platform, and since this platform is affiliated to the University and this university contains multiple colleges so we have created a special table for the colleges, and in order to do more organized and more accurate these departments were divided into sections by creating a special table for sections and then division of these sections To materials by creating a special table of materials.

As this platform is educational so there will be a lot of courses added to this platform and therefore whenever there are many courses and without regulation will cause many problems so here we have created a special table to (search for a specific) course in order to organize and arrange the educational platform, Also we need to design and create secondary tables such as help table, table of articles etc. the stored procedure is a function inside sql-server The benefit of using stored procedure is On the maintenance side, the test side and its speed are higher than normal command and also high security database . The listing below specifics why stored procedures have obtained such a going strong

following between application developers (and even Database Administrators for that matter): Maintainability, Testing, Isolation of Business Rules, Speed / Optimization and Security[5], As illustrated at figure1.

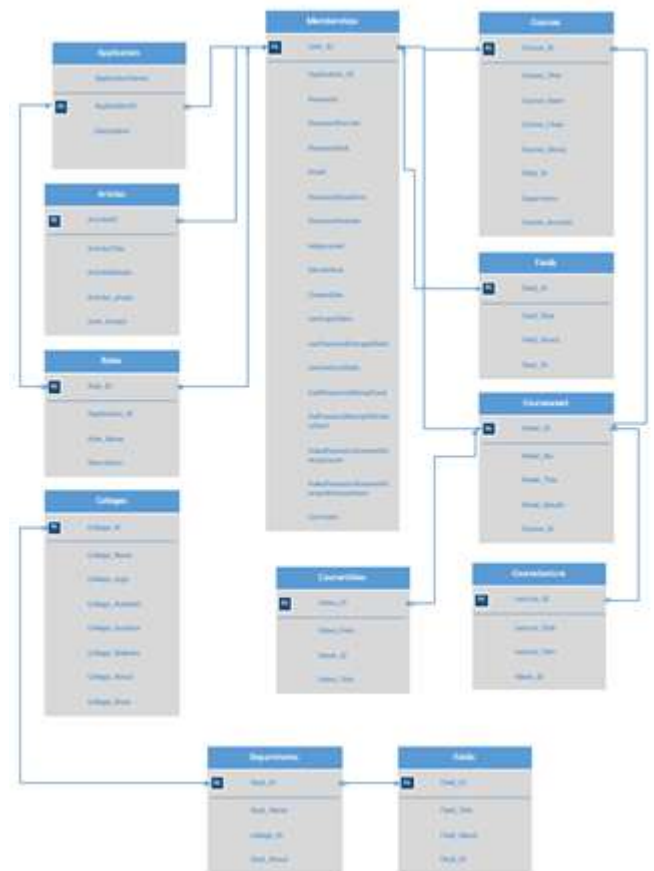
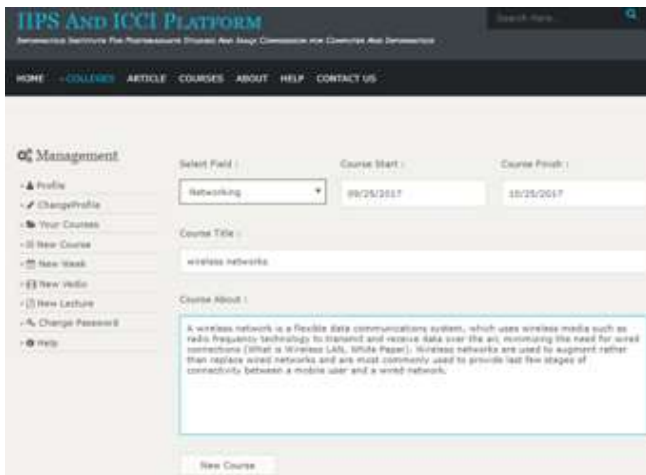


Figure 1: shows the tables and relation scenarios.

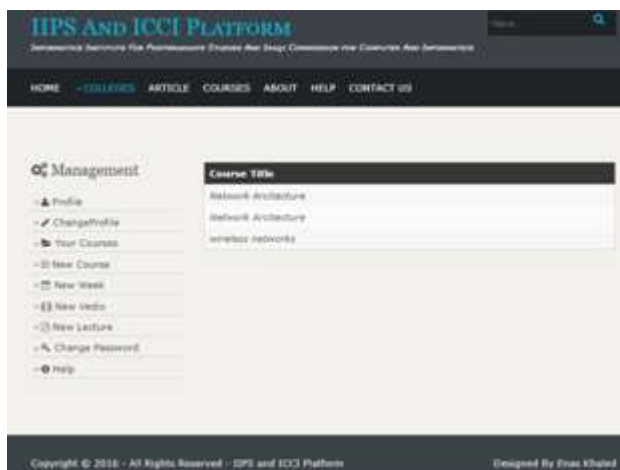
## 3. Implementation E-learning platform

Designed database is currently used in a LMS, Created LMS has all the features that a typical LMS must employ. The framework permits making a virtual grounds effectively and gives diverse action situations to administrators, students and teachers. It has a secluded structure thus framework modules can be included, expelled or refreshed by utilizing the gave instruments. Administrators have some authorities like creating entity, department or course and tracking both lecturers' and students' activities on the system. They also have authority to examine lecturers' and students' activity performances. Finally, administrators can also communicate with other users at any time as individually or collectively. Lecturers can prepare weekly lesson contents and add new weeks by using the content preparation module provided in the system. Additionally, they can communicate with students via synchronous and asynchronous communication modules, which can be used as text based, verbal and visual. Figure 2 shows a screenshot from the lecturer homepage and shows add courses.



**Figure 2:** shows add courses

This image shows the mechanism of adding courses to the educational platform by clicking on the new courses option and then showing us the current interface which consists of (select field) In this option we choose the name of the material, While (course start) This field is written when this course is started to determine the date, And field (course finish) In this field we write when this course ends in any date. Then we specify the title of the course by(course title) and We write a brief introduction to this course (about course) After completion we click on the new course command.



**Figure 3:** shows display courses

After adding a new course, check the addition of the course and show the courses by going to (your course) This page shows all courses provided by the professor.

#### 4. Conclusions

This paper presents a comprehensive review of e-learning and the development the database of the electronic learning platform system, In this investigation, a relational database demonstrate, which can be utilized inside electronic separation training frameworks, is portrayed. The created show gives completely social outline, information trustworthiness and security for huge scale Learning Management Systems. Connection situations was masterminded to be appropriate for a Learning Management System and prepared for an administration framework

interface. The framework has likewise been set up in consistence, Prepared database model is used in a LMS, which was developed to be used as distance education infrastructure of Iraqi higher education.

#### References

- [1] A. Alhadithi, R. M. Idrus, and A. S. Elameer, "Re-engineering Iraqi higher education with the e-education solutions," *Recent Researches in Education*, pp. 37-42.
- [2] Omer Deperlioglu, Yilmaz Sarpkaya, Ertugrul Ergun Afyon Kocatepe University, Distance Education Vocational School, ANS Campus, Afyonkarahisar, 03200, Turkey
- [3] Carswell, A. D. & Venkatesh, V. (2002). Learner outcomes in an asynchronous distance education environment. *International Journal of Human-Computer Studies*, 56, 475-494.
- [4] G. Vossen and P. Jaeschke, "Learning objects as a uniform foundation for e-learning platforms," in *Database Engineering and Applications Symposium, 2003. Proceedings. Seventh International*, 2003, pp. 278-287.
- [5] <https://docs.microsoft.com/en-us/sql/relational-databases/stored-procedures/stored-procedures-database-engine>.