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ORGANIZING AND OPTIMIZING DATA EXCHANGE IN UNIVERSITY

Abstract. Currently online education at universities developing exponentially. There are many possible solutions for teachers and students to share materials, assignments, etc. Universities are increasingly using e-learning portals that match their requirements. But the exchange of information in some situations, there are big problems between teachers and students. Also various information from different sources lose their value in huge data. According to this information, our goals (1) Organize study materials for quick access (2) Optimize your e-Learning portal and make it user-friendly (3) Reduce page load speed to make the portal faster. This article describes how many widely used possible solutions exist today and compares them to ours to get an objective perspective.

Keywords: organize, data exchange, education, schedule, optimize.

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Аңдатпа. Қазіргі уақытта университеттерде онлайн білім беру экспоненциалды түрде дамуда. Оқытушылар мен студенттер үшін материалдармен, тапсырмалармен және т.б. алмасу бойынша көптеген ықтимал шешімдер бар. Бірақ кейбір жағдайларда ақпарат алмасу кезінде оқытушылар мен студенттер арасында үлкен проблемалар туындайды. Сондай-ақ, әртүрлі көздерден алынған әртүрлі ақпарат деректердің үлкен көлемінде құндылығын жоғалтады. Осы ақпаратқа сәйкес, біздің мақсаттар (1) жылдам қол жеткізу үшін оқу материалдарын ұйымдастыру (2) электрондық оқыту порталын оңтайландыру және оны пайдаланушыларға ыңғайлы ету (3) порталды тезірек жасау үшін беттерді жүктеу жылдамдығын төмендету. Бұл мақалада объективті перспективаны алу үшін қазіргі уақытта қанша кең қолданылатын шешімдер бар екендігі сипатталған және біздікімен салыстырылған.

Түйін сөздер: ұйымдастыру, мәліметтер алмасу, оқыту, жоспарлау, оңтайландыру.

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Аннотация. В настоящее время онлайн-образование в университетах развивается в геометрической прогрессии. Существует множество возможных решений для преподавателей и студентов по обмену материалами, заданиями и т.д. Университеты все чаще используют порталы электронного обучения, соответствующие их требованиям. Но

при обмене информацией в некоторых ситуациях возникают большие проблемы между преподавателями и студентами. Также различная информация из разных источников теряет свою ценность в огромных объемах данных. В соответствии с этой информацией, наши цели (1) Организовать учебные материалы для быстрого доступа (2) Оптимизировать ваш портал электронного обучения и сделать его удобным для пользователей (3) Снизить скорость загрузки страниц, чтобы сделать портал быстрее. В этой статье описывается, сколько широко используемых возможных решений существует сегодня, и сравнивается с нашими, чтобы получить объективную перспективу.

Ключевые слова: организация, обмен данными, обучение, планирование, оптимизация.

I. Introduction

Nowadays, most universities use e-learning portals or online software to exchange information between users in order to continue active distance learning. University e-learning portals make information available to students. Also, students can remotely complete their tasks, assignments and exams on this portal. From a university point of view, the portal is an important bridge between teachers and students in this pandemic period, as well as for long-term remote learning. Sometimes students do not find the information they need in the huge amount of data on the Internet. Most universities have not changed the way they provide information for 10 years. Students get lost when they need to find lectures, materials and books. From a university point of view, the portal is an important bridge between teachers and students in this pandemic period, as well as for long-term remote learning offline.

II. Educational portals

“A University should be a place of light, of liberty, and of learning.”—Benjamin Disraeli

Before we start, let’s find out what a university is. A university is a higher education and research institution that awards degrees in several academic disciplines. Universities usually offer undergraduate and graduate programs. The word university means “community of teachers and scholars”.

The development of software, portals, electronic materials has made many changes in the educational field in universities.The built-in functionality of these The university software allows you to assess the knowledge of each student and the learning process. It is also possible to track progress and give objective feedback. Currently, the Internet provides free access to the portals not only in the university building, but also outside. Online materials complementing the course content, a system of tips and tricks for homework, the ability to test knowledge is just a few using portals after lessons.

One of the processes that improve the process of acquiring knowledge in universities are educational portals. A studentcentered room designed for self-

study and student reward should be in charge of their own learning. In virtual mode, materials are available in the form of a computer textbook, lectures and other materials to help solve problems. This allows students with an email account to communicate with teachers and each other with their doubts and related questions.

Students can communicate with staff without a personal visit, saving time on campus. Students can discuss exams, laboratory reports, posters, lectures, technical assistance for downloading materials. Using the virtual resource room is assessed through surveys, focus groups and online feedback forms. Students have access to study materials 24 hours a day.

A. Virtual Learning Environment

A virtual learning environment (VLE), also called a learning platform, simulates a virtual classroom or meeting while mixing multiple communication technologies at the same time.

Web conferencing software allows students and teachers to communicate with each other via a webcam and microphone, and communicate in real time during group work. Participants can raise their hands, answer surveys, or take tests. Students can create whiteboards and display screenshots after they have been granted Trainer rights, who sets permission levels for text notes, microphone rights, and mouse control. The virtual classroom gives students the opportunity to receive direct instruction from a professional teacher in an interactive environment. Students can have direct and immediate access to their teacher for immediate feedback and guidance. The virtual classroom provides a structured class schedule that can be useful for university students who may find overwhelming freedom in asynchronous learning [1]. In addition, the virtual classroom provides a social learning environment that mimics a standard classroom. Most virtual classroom applications provide recording functionality. Each class is recorded and stored in a database, allowing instant play in any class throughout the school year. University students will find it very helpful to find missing materials or review concepts for an upcoming exam. Parents and auditors have the conceptual ability to lead any class to make sure they are satisfied with the student's education. Educational technology is the use of both physical hardware, software and academic theoretical support to facilitate learning and increase productivity through the creation, use and management of appropriate workflows and resources.

B. Google classroom

Google Classroom is a free web service developed by Google for schools that aims to simplify creating, distributing, and grading assignments. The primary purpose of Google Classroom is to streamline the process of sharing files between teachers and students. [2] The Google class combines Google Drive to create and distribute appointments, Google Docs, Sheets and slides for writing, Gmail for chat and Google Calendar for planning. Students can be invited to the class using a personal code or automatically imported from the

school domain. Each class creates a separate folder on the corresponding user drive, where the student can submit the work for evaluation to the teacher. Google Classroom fully integrates Gmail, documents, spreadsheets and calendar into a single platform for interaction between students and teachers. Teachers can create lessons, distribute content, and grade on Google products. Assignments and deadlines are added to the Google calendar, each assignment can be assigned to a specific category. Teachers can track the progress of each student by reviewing the document revision history, and after grading, teachers can return work with comments and grades. Each lesson class creates a separate folder on the corresponding user's Drive, where the student can submit the work to the teacher for evaluation.

It is a good tool for teachers to optimize time in their classrooms. They won't waste time introducing students to the Google Classroom as teachers can add students by giving them a code to join the class. This leaves more time for learning as there is no need to manually add students one by one.

In addition, they will be able to submit assignments through the platform, which has two benefits: 1) there is no time wasted dictating or explaining tasks in the classroom, and 2) Teachers can reuse announcements, tasks, or questions asked in other classes. ... You can also share messages between multiple classes, or archive classes for future reference.

On the other hand, it offers the ability to schedule work for a specific day and date in order to maintain order and hours of student communication.

It also allows you to manage virtual or face-to-face learning of the educational community. You can create a course and then create both instructor-taught and expert-taught subjects so that everything is optimized on one screen.

It improves communication with parents to see the progress of their children, and at the same time, student feedback is also welcomed through notifications, homework corrections, video conferencing.

C. Moodle

Moodle is a free and open-source learning management system (LMS) written in PHP and distributed under the GNU General Public License. [3] Moodle is dynamic, objectoriented, modular learning. It covers nearly 18 percent of USA. Also one of the online learning systems for the development of distance learning in universities. One of the advantages of Moodle is that it has a simple, customizable interface that can be individually adapted to the design of each university. It is open source and editable. Moodle has a lot of functionality for studying online at a university.

Resources are consumed only depending on the simultaneous active connections, while a large number of inactive users at a particular time can be registered in the system, which does not affect resource consumption in any way.

Through reflective research, the use of open source software to support the social constructionist epistemology of teaching and learning in online communities. The result of this research had a strong influence on the design of

Moodle, providing pedagogical aspects not found in many other virtual learning platforms.

Since its inception, the Moodle platform has evolved into different versions. A new stable release is provided to the community approximately every six months. In 1999, Martin Dugiamas began his career by creating several models that formed the basis of his work ”Improving the effectiveness of online learning” The first Moodle publication was published by Peter Taylor at Curtin University in November 2001.

Moodle 1.0 was released in August 2002, where users could exchange views, creating a new forum that allows Moodle to be translated into different languages and to suggest new topics. This platform has experienced significant growth since its inception and was first discussed at Oxford in 2004. These events generated more interest from companies that started applying as Moodle partners (Moodle partners).

Moodle is currently making significant progress with a new initiative called Moodle.net, which began testing in early 2019.

Simultaneous users	RAM	CPU cores
20	1 GB	1
40	2 GB	2
80	4 GB	3
120	6 GB	3
200	10 GB	4

D. Edmodo

Edmodo is an educational software offering a platform for communication, collaboration and learning for K-12 schools and teachers in universities. The Edmodo network allows teachers to share content, share tests, assignments, and manage communication with students, colleagues, and parents. Edmodo is very teacher-oriented in its design and philosophy: students and parents can join Edmodo only at the invitation of the teacher. Teachers and students spend a lot of time on the platform, both in the classroom and beyond. Edmodo is free, but also offers premium services. Edmodo is an educational social network that connects students with people and resources that would allow them to improve their learning. At Edmodo, teachers, students and parents can connect securely, it is an open network for learning. Edmodo is a microblogging tool used in education to organize content, make assignments and maintain active and constant communication and interaction between teachers and students, including parents. Edmodo helps transform education through principles that education opens minds and technology connects. Edmodo aims to create an easy, safe, interactive, versatile and free platform for teachers that would reinforce what is said in class. Include gamification in a simple way. The teacher assigns badges to his students, awards for effort. These can be the best comment, the most creative work, the best elaborate, etc. Badges can be created by the teacher

or by Edmodo, so they can be highly personalized. Communication between teacher-student is the main key of this tool. The teacher creates as many virtual classrooms as she wants and the student has virtual classrooms.

E. My Solution

According to this spaces and problems in university education program. I have started my own project named Uspace. In this product I choose 3 main problems and try to solve it, to make exchange information easier and constructed as a timetable. Tasks will be listed according to deadline, so it will show to you which things you must do first and which tasks has more time. For nowadays it has many tables of database of User. It has unique Id, first name, last name, status (teacher or student) email and lessons (created or enrolled). User TableLesson Table. It contain unique Id, lessons short name, full name of course, created date, creator id (teacher's Id), tasks list, students list which choose. Lesson Table Task Table. Unique Id, title of task, description, created date, deadline of task, lesson Id. Task Table Backend of this app was written on Node js. Database based on MongoDB. I have used also many helper libraries.The hardest thing in backend was construct connection between database tables. Also searched many resources to make connection without error and well designed. Now we have creating user teacher and student, create lesson, edit lesson, enroll lesson, delete lesson. About frontend of this projects was builded on React. React was great solutions for making fast results. We have sign up, login pages and students lesson page for enrolling and teachers page for creating and editing lessons. Firstly I started from register users and had a problem with status of user is it teacher or student. I have solved this problem with radio button in bottom so user can choose only one option. For more information there is a many inputs for name and surname also asking for email address. About password first version was password with confirmation password. Then I change it to one input with function show password or hide it.

For policy I create checkbox , user must agree with our terms to continue registration. Validation that I created checking for empty inputs. After registration will be a message that you have registered. Success message and it will redirect you to login page.

At the end, my solution is not solving all problems. But I have choose 3 main questions that my product must answer. Everyday I must solve list of tasks which will make small steps for me. Also this period of pandemic, show us problems of online education. Above the article you have seen photos and some imagination about projects. There was also steps of login and creating lesson. My goal is making this product best.

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