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E-Learning System for Corporate Employees' using Web Technology

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ABSTRACT: E-learning fulfills the thirst of knowledge and offers online content that can be delivered for the learner at anywhere, anytime and any age through a wide range of e-learning solution while compared with traditional learning system. It also provides the rapid access to specific knowledge and information. With the rapid growth of voluminous information sources and the time constraint the learning methodology has changed. Learners obtain knowledge through e-Learning systems rather than manually teaching and learning. In this paper illustrates a way to which the software technologies spur the development of a web elearning platform. The method aims to build consistent web applications, having a better and safer interaction with the user, while at the same time consuming less hardware resources meant for the server and ensuring interoperability.

The web platform means an easily usable instrument, which allows the passage of knowledge to the course takers, thing that is possible by making use of the new generation software technologies. The transmission of messages and files is possible from the teacher to the employee, and the opposite. In this research paper proposes the e-learning management system with web services oriented frame work and this system supports the cross browser and fully integrated with database.

KEYWORDS: Codeigniter 3, Database, E-Learning, interactive training, virtualize learning

I. INTRODUCTION

In the last few years, the technique and methods of transmitting information have greatly improved. Thanks to this technological leap and to the requirements requested by the employees we have proposed to carry out such a work. The aim of the article is to use the latest web technologies to develop a software solution for improving and facilitating the employee skills as well as access to the teaching materials (books, courses, study materials, guides, etc.), uploaded to the online platform by the teaching staff. After several analyzes of the most sophisticated web programming language for implementing the application for the E-Learning module, the PHP programming language was chosen (acronym from "Hypertext Preprocessor") and the framework created based on the programming language PHP, Codeigniter. For storing the data, it was chosen to use the MySQL database. The platform allows company to create and post text and image ads to send useful information and ads to employee with access to the platform. Motivation, engagement and learning at one's own space are considered key aspects that contribute to better learning experiences. Traditional learning invokes multiple limitations, which counter employees-centered, enthused learning activities, e.g., the inherent passive role of the learner, and the redundant and mundane learning patterns –o name just two. All these constraints and several other issues characterize challenges for ensuring active pedagogical strategies in addressing language learning.

In learning a language, the employees must not only acquire new vocabulary but also must be able to conceptually link it with concrete or abstract concepts in their first language. This aspect is equally true even for technical language learning. Language learning is acknowledged as a challenging area for several reasons. First, the ability to communicate internationally is considered as one of the core competencies by the twenty first century employers.

II. RELATED WORK

The architecture of the reported language learning systems is mostly comprised of databases of words, personal knowledge level and feedback system. The vocabulary database was initially populated by importing data from a dictionary with a provision of integration with other system. JavaScript, jQuery, and PHP were used to develop three modules, namely, user-control, dictionary and word test. Similar architecture was proposed for a game-based vocabulary learning system. The component modules in this system are referred as learner level module and

content presentation module. The selection of games and contents can be functionally dependent on learner level module – thus learners having more control on their learning. The architecture and functionalities of another game-based personalized vocabulary learning system, based on associative relationship was proposed. The expert module was designed on word association and a semantic network. The employee module was designed on evolving learner's lexicon knowledge in the form of a graph. The employee model represents the system's view about the learners' pre-existing lexical knowledge. The learner takes three games – turn-taking, guessing and gap-filling followed by a test the result of which modifies the learner's knowledge association. Thus, the employee module expands as the learners keep conducting the learning tasks and learning new words. In turn, the data in the employee model are accessed and used for composing suitable learning. A proposed business English learning system was based on five tasks and a Fuzzy logic for self-tracking of the progress, i.e. in terms of correctness and speed of answers by the learners. The proposed fuzzy evaluation makes the learning system adaptive, which is important especially in the case when employees of different previous knowledge attend the same course. A computerized text screening system that facilitates the learner to read text, re-encounter familiar words and encounter new words – thus enriching and expanding the vocabulary – was used in another adaptive e-learning system for business English for EFL employees. The system supports personalized learning and customized reading.

III. MOTIVATION

In the situation of COVID-19, there is the need of education in all areas and fields. When everything is closed is the world but work cannot be stop. By using virtual learning, we can provide improvement and upgradation of employees' skills. And it can be done while sitting anywhere in world and attending virtual session for interactive training.

IV. PROPOSED WORK

Block schemes

1) Application

The block schema (Fig.1) of the application shows the module's workflow and how the user interacts with it. The user contacts the application from the first page access, where it needs to authenticate with a username or email address and password. As soon as he clicks on the authentication button, the platform checks if there is an account with that email address if the password is correct. If one of the two conditions is not met, the user is redirected back to the login page and an error message is displayed. Errors may be of the type: nonserving user, wrong user, wrong password. If this step is successful, the platform checks through the middleware the role of the user, which may be: superadmin, teacher, employee. Depending on the role of the user, the platform will redirect it to the specific control panel for each user type. When a user requests a new page at the back of the site, the user type will be rechecked, and if it is detected that the user is trying to access a page for another type of user, the platform will direct you to the specific dashboard. If the user requested page matches its role, this page will be displayed. This happens every time the user opens a new page.

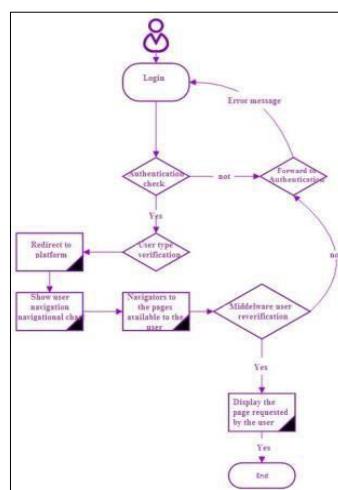


Fig.1

2) Types of users

Three types of users can be authenticated: superadmin, teacher, and employee. The platform displays one menu for each user type and one dashboard for each type of user. After the user passes the authentication system, the role is detected and is redirected to the dashboard specific to the role he / she has.

- Superadmin

For the e-learning module, the superadmin account has access to two board panels where more information can be tracked. The billboards displayed to the superadmin account are:

- a) Dashboard for viewing the teaching materials loaded into the platform;
- b) Dashboard for viewing messages posted by the teaching staff.

Each dashboard includes other pages, such as viewing a teaching material or viewing a published message in full. For this module, the superadmin cannot take action. Its role is tricky to visualize everything uploaded to the platform and to be up to date with the latest posts posted (Fig.2).

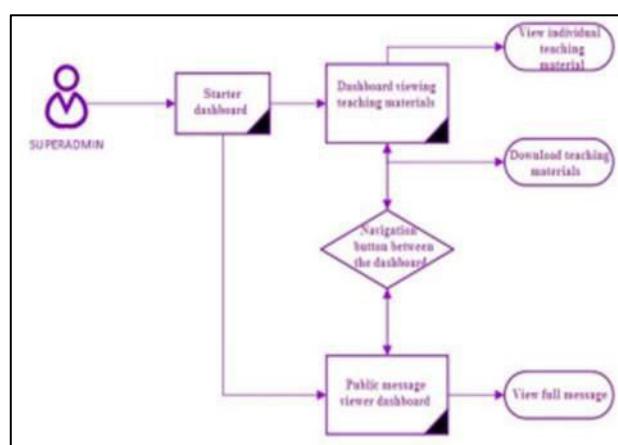


Fig.2

- Teacher

The second type of user who has access to the elearning module is the teacher. The functionality of the module is focused on the ability to upload teaching materials and the ability to add messages to Employees. The teacher's workflow is as follows: After authentication, the teacher as a teacher is redirected to the main page, where he can navigate to the elearning section. The first page to be displayed is a general page where more information is displayed, including a short history of the latest loaded materials. From this page, the teacher can quickly navigate to four more pages:

1. Add teaching materials;
2. Teaching materials management;
3. Create New Message;
4. Manage published messages.

From the teaching materials add-on page, you can quickly and quickly navigate to the teaching materials management page with a link button. Just as easy as the page from which a message was created to the published message management page. A novelty in this section is that there are several pages to the module for loading the teaching materials. Apr pages for full view of published messages and editing of published messages. From the full view page, you can quickly switch to the message editing page or its management page. Also from this page the teacher can delete a published message(Fig.3).

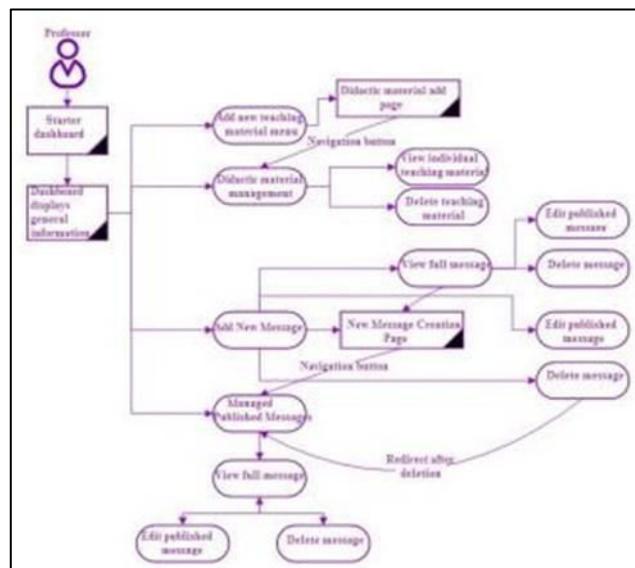


Fig.3

- Employee

The Employee is the third type of user who has access to the e-learning module.

The Employee can only view the materials and messages uploaded to the platform without having access to modify or create messages or upload files to the platform. The Employee has access to download the materials from the platform and view them directly in the browser. All teaching materials and messages are delivered to the Employee after his / her specialization, so a Employee has access only to the materials and messages published in his / her specialization and disciplines. Once authenticated, the Employee is redirected to the main panel, from where they navigate to the e-learning module. On this page, the Employee can select one of the two available modules.

1. Module for viewing teaching materials;
 2. Module for viewing published messages.

From the module for viewing the teaching materials, the Employee can see all the disciplines available in that year and for each discipline, all the didactic materials loaded. Teaching materials can be viewed in the browser or downloaded. From the module for viewing posted messages, the Employee has access to all the messages created by the teaching staff for the Employee's specialization. To avoid interfering messages, a filter has been added like this, to be sorted out besides specialization and discipline(Fig.4).

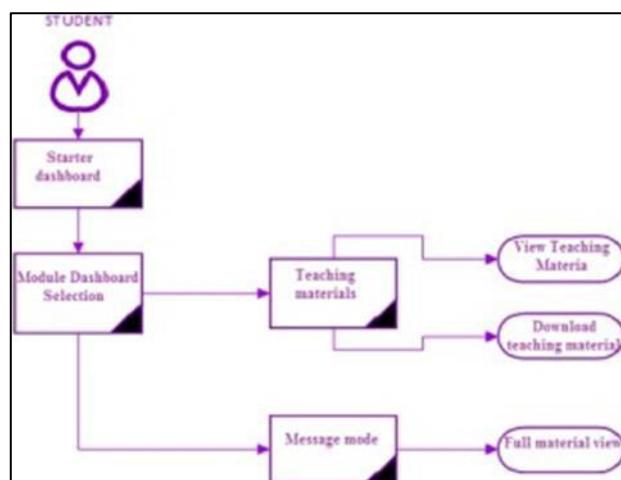


Fig.4

Source Code Structure

It is followed by standard MVC structure within powerful PHP Codeigniter framework to develop this project.

1) Structure of application Directory

- Controllers
- Models
- Views

3) Structure of Asset directory Backend:

This directory contains all the CSS, JS and essential plugins of Admin panel. Frontend: Frontend directory contains all the CSS, JS, essential plugins of Frontend site.

4) Structure of Uploads directory Frontend:

Home banner image of frontend site is located here. Thumbnails: This directory contains all the thumbnails like Course thumbnails and Lesson thumbnails. User image: All of the users and admin's profile image is located here.

V. RESULTS

Models of communication strategies in education are proposed on the basis of the competence analysis system for the training of an IT specialist. Intelligent agents, analysing the curriculum, offer various forms of training in accordance with the chosen communication models, individually for each Employee. Further development of the approach involves conducting studies on the process of training an IT specialist and building Employee models in the electronic learning environment. Efficient way of delivering courses as the resources are available from anywhere and at any time; Employee can interact with their peers from all around the world; The studying material can be accessed unlimited number of times. As from referenced paper and study shows that e-learning improved employee perceptions, communication, quality of education, critical thinking, self-learning.

VI. CONCLUSION

In conclusion, the application is scalable, with a wide range of possibilities for improvements, but also with many features already implemented. The application allows in a way accessible to the three types of users to interact with it. One advantageous part of the platform is that it can be extended to several departments, even to several faculties. The e-learning module provides an advantageous software solution for handling teaching materials and important messages, in one sense, from teachers to Employees. Its purpose is for Employees to quickly and inexpensively access the teaching materials and to keep up-to-date with the latest news. Due to the fact that the whole module was built on the Codeigniter framework, it can easily support the bringing of new functionalities. The developed application can be upgraded to every submodule it includes. The fastest and most beneficial optimization that can be brought to the entire module is verification, optimization, and where to rewrite the source code. Such a platform is useful in any educational field, bringing about a way of transmitting, managing and receiving information. The novelty of this platform is the unitary handling of departmental management issues. With the help of this section of the platform, both the teacher and the Employee can talk and receive information from the bottom. E-learning is not just a change of technology. It is part of a redefinition of how we as a species transmit knowledge, skills, and values to younger generations of workers and students. This book makes a few predictions of how elearning and the functions it serves will continue to develop. Learners will have access to millions or billions of knowledge modules. Some will be Web pages with simple text and graphics. Others may include multimedia simulations. In many fields, e-learning has become the default way to conduct training or to provide education. Online Education has brought a positive impact in the lives of employees and work life. It has given an opportunity to take up additional courses along with their job as per their convenience. The quality of education has improved by online courses and even it has become easy for employees to refer the content as per their leisure. In the era of digitalization the scope of online education increase even more and will be beneficial for professionals to keep their self-upgraded.

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