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The design and implementation of CMS based cloud space management system for the schools

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ABSTRACT

Technology has brought a massive change to human lifestyle in today's world. The Traditional methods are being moved towards the modern era of technology by adopting novel approaches. In 2019 due to the pandemic of COVID-19, people were isolated, because of that, the trend of remote working was enhanced, and officials are being moved towards the digitalized world; according to that scenario, we decided to design and implement a cloud-based space management system for the schools, TSD (The Student Drive). The TSD facilitates school's students and tutors with the web-based software to share information, send notifications, and customize resource sharing methods; the shared data includes multi-type files, folders, text, lectures, images, graphs, etc. In this study, the proposed system was successfully designed, implemented, and tested under the consideration of experts; in result, the expert reviews are added. The System services were evaluated by comparison with available alternate sources; and in the end, it was founded that the TSD is much beneficial to use in the modern era where everything is digitalized, and there is no such promising system for the school for sharing resources.

Keywords: E-Learning, System Adoption, Digital Learning, Web Engineering, Software Design & Implementation, Cloud Storage.

1. INTRODUCTION

Currently, collecting/storing Information is very important to increase/gain knowledge. It is a systematic investigation of existing or new knowledge used to establish or confirm facts behind the objects. These days schools' lectures and Research activities are knowledge-oriented, where knowledge is encapsulated in data. The data is the hub of research, as most research activities rove around data, which is created, processed, shared, and stored during and after the field and lectures [1].

File sharing is distributing or providing access todigital media

such as computer programs, multimedia (audio, images, and videos), documents or electronic books. File sharing may be achieved in numerous ways. Standard method or storage. Standard storage methods, transmission, and dispersion, include manual sharing utilizing removable media, centralized servers on computer networks, World Wide Web-based hyperlinked documents, and distributed peer- to-peer networking [2].

It is the public or private sharing of computer data or space in a network with various levelsof access privilege [6]. At the same time, files can easilybe shared outside a network (for example, simply by handing or mailing someone your file on a diskette), file sharing almost always means sharing files in a network, even if in a small local area network [3]. File sharing allows several people to use the same file or file by some combination of reading or viewing it, writing to or modifying it, copying it, or printing it. Typically, a file- sharing system has one or more administrators. Users may all have the same or may have different levels of access privilege. File-sharing can also mean having an allocated amount of personal file storage in a standard file system [4].

In modern days files are stored and managed overthe servers using web-based applications. Publishing, editing, modifying, organizing, deleting, and maintaining files or content from a central interface is known as the content management system. The function of Content Management Systems is to store and organize files and provide version-controlled access to their data [5].

The Student Drive is a CMS based platform for sharing files and folders over the web page with the member users of the system. The system enables users to create and manage their folders and upload files in it; usersare also authorized to share their uploaded files with the other users who are authorized members of the system.

2. MATERIALS AND METHODS

The main objective of this study is to enable students to share their study information on a public blog, upload files/folders

related to their courses in provided private space of the application and share uploaded material with the other students. This section contains the information from the first point to the last point; it contains a description of all methods and applications used in this system.

Initially, The Student Drive provides a public blog where all members can share their thoughts and discuss any topic publicly; after that system facilitates every authorized/registered user with a storage drive, where they can easily upload the research information related to laboratory and field experiments, classwork, or any subject related materials. The system provides user- friendly user interfaces to upload and share the data in different formats, including text, pdf, images, animations, and videos. User also can share their uploaded data with any user of the system by providing only an e-mail address of the user.

System facilitates users to manage their files and folders, they are also authorized to delete created folders or uploaded files from the system, at the same time, the option is provided to recover all deleted files and folders.

2.1 The Functionalities of the Implemented Systems

Web-Based Student Drive deals with uploading and sharing files related to subjects and research. The purpose of designing and implementing this CMS based system is to facilitate school students to instantly upload and share their research or subject related files/information by using a web browser.

It Supports Collaboration among school users based on research and subjects. A public blog is provided on the main page of the system where students can post their queries and easily discuss any topic publicly; at the same time, the user is authorized to delete the post from the blog shared by themselves.

The system provides a drive (space) to every user in which they can create new folders and upload different types of files in it. Students can rename any file/folder, delete file /folder and share file/folder with any authorized member.

The main purpose of developing this system is to enable only school members to upload and share different types of files; an admin panel is available in this system in which the superuser (admin) has authority to manage users, either delete existing users or accept new registration forms of users that can be login into the system after getting acceptance by admin as illustrated in fig 1.

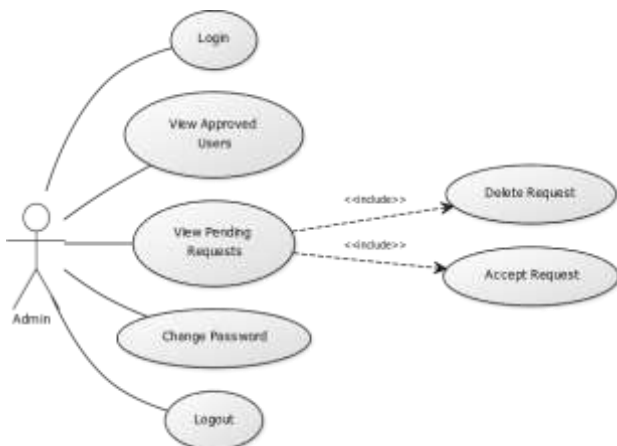


Fig. 1 Use case Diagram of Admin Panel



Fig. 2 Use case Diagram for Student Panel

Students can view the records he shared with others, and at the same time, they can see the record shared with him by other users. The system also facilitates users to recover all data they deleted from the Drive (Space provided by the system) as illustrated in fig 2.

2.2 Design Investigation



Fig. 3 Main GUI of Implemented System

Fig 3 illustrates that Un-Register Users can register by providing the information in the sign-up form. And registered users can be logged in by providing e-mail and password in the login panel.



Fig. 4 Main Page for Authenticated Users

Fig 4 illustrates the main page after logging into the system where the public blog is provided to share any information in textual form, and students can delete posted information from the blog.

In the section illustrated as fig 5, students are facilitated with a space where they can create folders, delete existing folders, or rename them.



Fig. 5 Student Storage Drive



Fig. 6 Student Storage Drive

Fig 6 is sub-item of the folders illustrated in figure 5. In this section, students are authorized to upload any kind of file in the selected folder, as well as they can also rename the uploaded file and share it with other members of the system.



Fig. 7 View Shared Information

Fig 7 illustrates the GUI of the software system, in this section, students can view their shared files as well as they can view those files which are shared with them by other users.

3. RESULTS

Table 2 Alternate Source. For the quality assurance of the implemented system and its methods, we did an evaluation in the presence of some experts. For evaluating the services, experts were given terms containing words combination and ranking categories. We gave the questionnaires to experts for comparing our prototype and any other source. The results were evaluated for measuring the performance of the designed prototype by the Expert Evaluation. The Questionnaire for Evaluating the Performance parameters was developed for this purpose. For this, performance attributes like user satisfaction and interaction with the system, completeness of the retrieved information, system understandability and overall performance were evaluated on the ordinal scale.

Terms	satisfied	Close to satisfied	Neutral	Not Quite satisfied	unsatisfied
The Answers retrieved from the systems are?	0	0	0	<input type="checkbox"/>	0
Is it easy to understand about the interaction with the system?	0	<input type="checkbox"/>	0	0	0
Did you get all the information you wanted using the system?	0	0	<input type="checkbox"/>	0	0
Do you think the system understood what you asked?	<input type="checkbox"/>	0	0	0	0
How was the overall performance of the system?	0	0	<input type="checkbox"/>	0	0
Overall evaluation	1	1	2	1	0

Table 1,2 Evaluation results of Expert A show the questionnaire's comparison evaluation results that indicate the proposed prototype is overall close to satisfactory and alternate source overall Neutral.

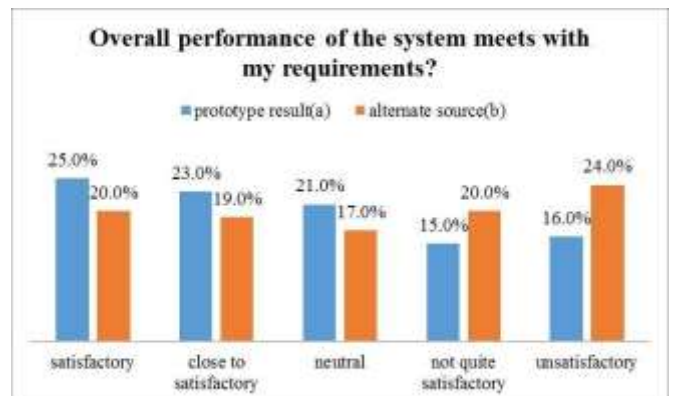


Fig 8. Overall Survey Result

Fig 8 illustrates Survey results of the overall performance show the questionnaire's evolution results that indicate the proposed web service prototype is 20% satisfactory & alternate 10% not quite satisfactory.

3.2 Discussion

Web-Based Student Drive is a Content Management System for school students to upload and share study-related materials files and folders over the web page.

Due to the physical absence of students, lecturers can't be repeated instantly from their homes which they missed. Students can't share any file instantly to others if they are at a distance; they must travel. It may cause unnecessary delay, time consumption and fuel consumption if any vehicle is used, students can't discuss the subject-related topic from their home. They can't share software, graphs, and notes instantly from any corner of the world.

Some applications fulfilled the above problems by performing operations designed and implemented in the algorithm of systems, but the number of schools can use our system design.

The system Student Drive is based on two significant panels. One is an Admin Panel, another is Student Panel, and in the admin panel admin is authorized to delete existing members of the system and accept or deny the pending request of the students for registration.

Before logging into the system, students must make a registration; after submitting the registration form, the admin plays the role for accepting or denying the submitted request, if the admin denies the request, then the student is not authorized to be logged in into the system. While after accepting request student is authority to perform all functionalities provided by the system after logging in.

After logging into the system, a public blog will appear in front of end user where he/she can post their questions and queries that other member users can see so that they can respond to it. Student is also authorized to delete a post posted by him on the public blog while other students are only authorized to see shared post.

Registered users are facilitated with a space where they can create directories and upload different kinds of files in it, student is authorized to rename created folder or delete created folder, at the same time he/she can also rename uploaded file, delete uploaded file and share uploaded file with the other authorized/member users by providing his/her e-mail.

Students also can manage his trash folder, in this option all deleted file will be appeared, if student want to recover any one file or recover all deleted files, he can recover by just clicking a button name recover all.

Student can view files that he/she shared with other students and view the files shared with him/her by other users.

4. CONCLUSIONS

In today's digitalized world, performing tasks like instant sharing of school resources, uploading, and sharing files/folders and subject-related information is much more beneficial for tutors and students. Initially, no such kind of system is used that works departmental-wise in schools. Traditional methods consume time to share files or information with others, and that manual system has many more drawbacks. The aim of research was to overcome the defined problems. We have made such a system that easily manages the whole system of uploading files and sharing them on a CMS-based cloud platform where every user is authorized to manage their accounts drives according to their needs.

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6. REFERENCES

- [1] Ajzen, I. (2011). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. Al-Gahtani, S. S. (2016). Empirical investigation of e-learning acceptance and assimilation: A structural equation model. *Applied Computing and Informatics*, 12(1), 27-50.
- [2] Arpacı, I. (2016). Understanding and predicting students' intention to use mobile cloud storage services. *Computers in Human Behavior*, 58, 150-157. Available at: <https://doi.org/10.1016/j.chb.2015.12.067>.
- [3] Ashtari, S., & Eydgahi, A. (2015). Student perceptions of cloud computing effectiveness in higher education. Paper presented at the In 2015 IEEE 18th International Conference on Computational Science and Engineering. IEEE.
- [4] Bellaaj, M., Zekri, I., & Albugami, M. (2015). The continued use of e-learning system: An empirical investigation using UTAUT model at the University of Tabuk. *Journal of Theoretical & Applied Information Technology*, 72(3), 464-474.
- [5] Brown, S. A., Dennis, A. R., & Venkatesh, V. (2010). Predicting collaboration technology use: Integrating technology adoption and collaboration research. *Journal of Management Information Systems*, 27(2), 9-54. Available at: <https://doi.org/10.2753/mis0742-1222270201>.
- [7] Burda, D., & Teuteberg, F. (2014). The role of trust and risk perceptions in cloud archiving—Results from an empirical study. *The Journal of High Technology Management Research*, 25(2), 172-187. Available at: <https://doi.org/10.1016/j.hitech.2014.07.008>.

BIBLIOGRAPHY



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