QUIZ MANAGEMENT SYSTEM FOR COMPUTER SCIENCE AND COMPUTER TECHNOLOGY

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Abstract. Conventional quiz management is often slow and requires a lot of manual work. Professors need to create, distribute, and grade quizzes by hand. This can be cumbersome and time-consuming. Students also face challenges in accessing quiz materials and tracking their performance. The Quiz Management System (QMS) aims to improve this process. It automates quiz creation and grading, making everything faster and more efficient. Professors can set up and share quizzes online without needing physical copies. Grading is done automatically, which provides students with quick feedback and saves time for professors. The QMS also securely stores all quiz data and student records. This helps prevent data loss and reduce the amount of administrative work. By simplifying these tasks, the QMS allows professors to focus more on teaching. For students, it makes accessing quiz materials and monitoring their progress much easier.

Keywords: quiz management, automated grading, students, professors

INTRODUCTION

The process of assigning and evaluating tests has traditionally been manual and time-consuming. Checking and distributing scores took a lot of effort, and retrieving quiz results or feedback could be slow for both students and professors. The proposed Quiz Management System (QMS) provides a modern solution to these outdated methods, specifically for educational institutions. Unlike traditional systems that require large amounts of physical storage, the QMS uses a digital interface to make quiz management easier. Professors can create and automatically grade quizzes, while students can quickly access their results and track their progress. This digital approach reduces the workload and improves the educational experience.

PROBLEM

Traditional quiz management is often slow and requires extensive manual effort. Professors need to create, distribute, and grade quizzes themselves, which can be tedious and time-consuming. Students also struggle with accessing quiz materials and monitoring their progress. The Quiz Management System (QMS) streamlines this process. It automates quiz creation and grading, making everything quicker and more efficient. Professors can conveniently set up and share quizzes online, removing the need for physical copies. The Quiz Management System for computer science and computer technology provides instant feedback

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on quiz responses, allowing students to quickly identify and correct mistakes. This immediate reinforcement helps solidify learning and ensures that misunderstandings are addressed promptly. The digital nature of the Quiz Management System reduces the need for physical materials and administrative tasks. This efficiency saves time and resources for both students and professors, allowing more focus on educational content. Overall, the Quiz Management System offers a range of advantages that enhance the educational experience for students and provide valuable tools for professors.

APPROACH

The QMS requires knowledge of both backend and frontend development. It has a user-friendly graphical interface (GUI) created with HTML, CSS, and JavaScript. The backend is managed with PHP using the Laravel framework, and MySQL handles data storage. A system flowchart has been used to refine the design. The system includes two main components: professors and students. Professors handle questions, options, and monitor scores. Figure 1 illustrates the system flow diagram for the student component. Students log in to view their profiles, quiz history, and performance. They can read and comment on blog posts, navigate through different pages, and participate in quizzes. Students can also view their scores, download results in PDF, CSV, or Word formats, and email professors.

Student can access practice quizzes and interactive blogs covering topics from programming languages and mathematics to language arts and sciences. The platform provides instant feedback, helping students understand their mistakes and improve their skills.

Professors can efficiently handle various tasks, such as adding, deleting, and updating question categories, managing questions and options, viewing student lists and details, tracking student scores, and handling mail from students. Additionally, professors have the same capabilities as students, including accessing their profiles and managing quizzes.

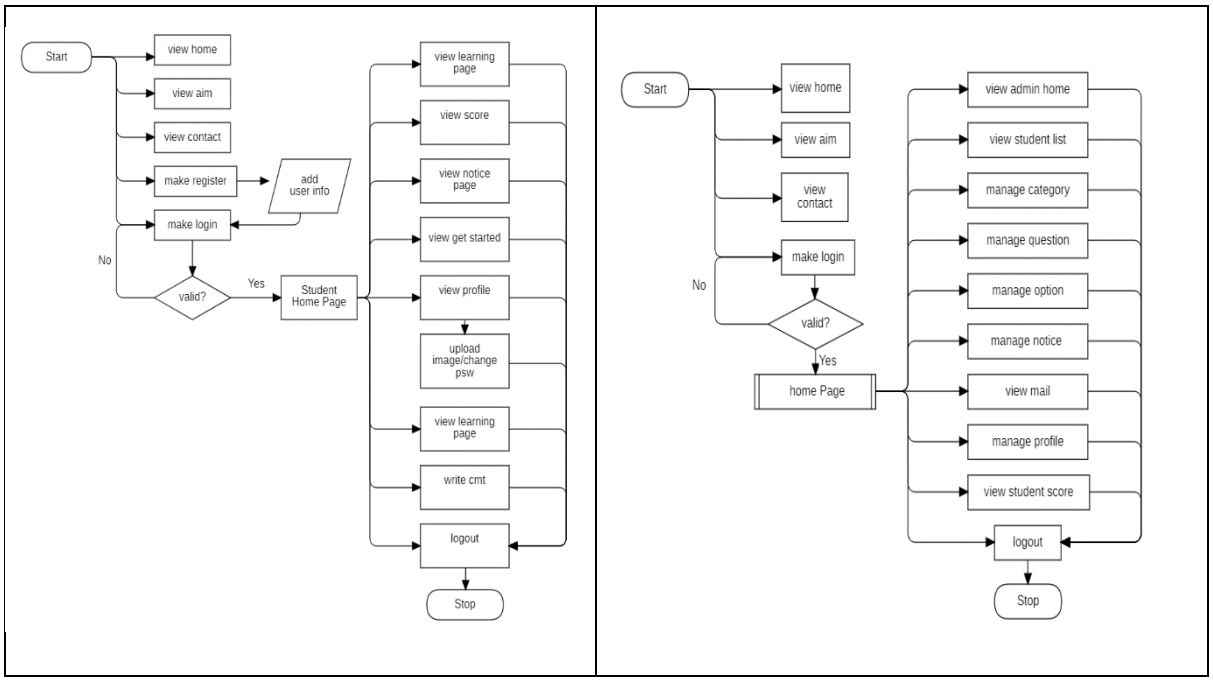

Figure 1: System Flow Diagram

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An Entity Relationship Diagram uses data modeling techniques that can help define business processes and serve as the foundation for a relational database. An ERD attribute can be denoted as a primary key, which identifies a unique attribute, or a foreign key, which can be assigned to multiple attributes. A cardinality notation can then define the attributes of the relationship between the entities. Figure 2 displays the entity relationship diagram (ERD) for the QMS, which details the database's logical structure and relationships between entities. This diagram helps clarify how data is organized and interconnected.

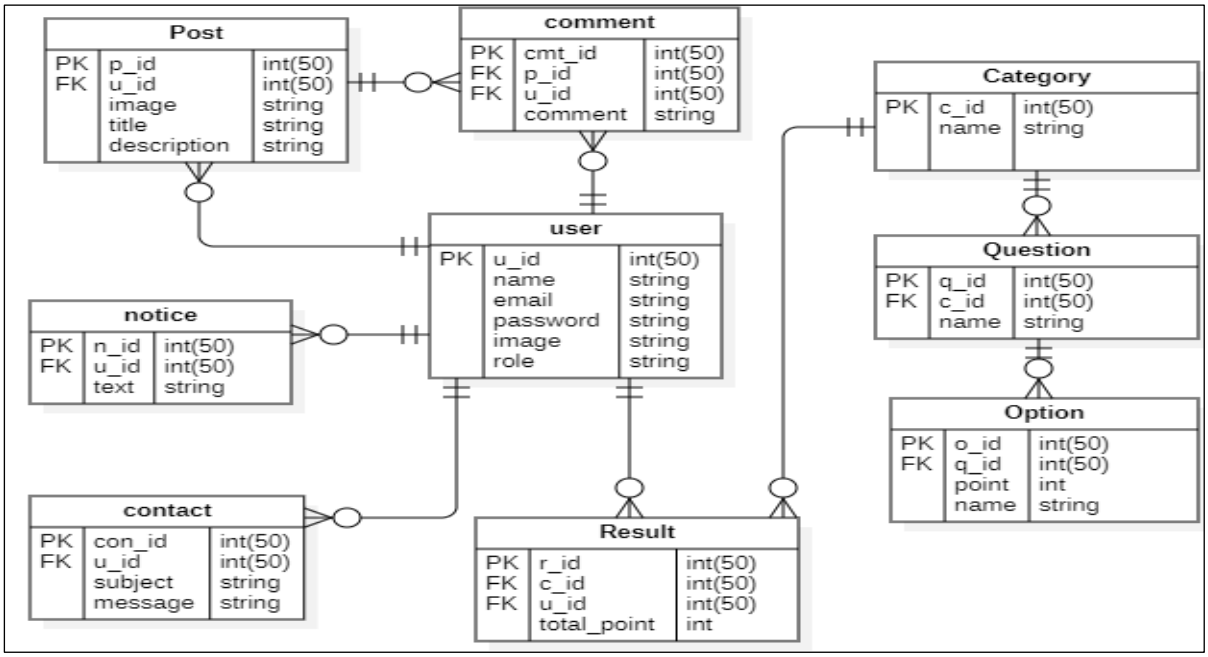

Figure 2: Database Design

RESULTS

The digital Quiz Management System (QMS) also enables real-time monitoring and reporting, allowing educators to track student performance instantly and make timely adjustments if necessary. It facilitates a secure environment where quizzes can be administered without concerns about cheating or data breaches, as the system includes features like user authentication and encryption. Additionally, the QMS offers scalability, allowing institutions to manage large volumes of students and quizzes with ease. By integrating with other educational tools such as learning management systems (LMS), the QMS fosters a seamless flow of information, ensuring that quizzes align with curriculum goals and learning outcomes. The shift from traditional methods to a digital Quiz Management System (QMS) has greatly improved quiz administration efficiency. The QMS handles all aspects of quiz creation, distribution, and evaluation within educational institutions. It automates quiz generation and grading, which reduces manual effort and minimizes errors. By offering a streamlined platform for both students and professors, the system enhances the overall management and delivery of quizzes, ensuring a more accurate and efficient process. Figure 3 provides an overview of the system's implementation, showing how the various components and functionalities are integrated and operated.

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Figure 3: Implementation of this system

CONCLUSION

The Quiz Management System aims to provide computer science university students with a practical platform to test and enhance their knowledge in various subjects, simulating real-world scenarios and exams. Additionally, the system offers an efficient way for students to practice and assess their knowledge, helping them prepare for exams and improve their academic performance. Designed to be user-friendly, it is accessible for both students and professors to create, manage, and participate in quizzes. By leveraging technology, this system supports a more streamlined and effective learning and management experience. Students can instantly see which questions they answered correctly or incorrectly, allowing them to identify areas where they need improvement. This immediate feedback loop is crucial for learning, as it helps students quickly grasp and correct misunderstandings, reinforcing their knowledge and skills.

REFERENCES

[1] Laura P. Thompson, et al. "Gamification in E-Learning: Boosting Student Motivation and Performance with Quizzes." Journal of Interactive Learning Research, vol. 31, no. 2, 2022, pp. 150-175.

[2] Scott M. Freeman, et al. "Effectiveness of Online Assessment in Educational Technology." Journal of Educational Technology Systems, vol. 45, no. 1, 2016, pp. 52-72.

[3] John G. Barge, et al. "Assessing Student Learning and Engagement in Higher Education: The Role of Quiz Systems." Educational Assessment Review, vol. 12, no. 3, 2018, pp. 89-110.

[4] Jane Smith, et al. "E-Learning Platforms: Enhancing Student Engagement through Quizzes." Journal of Online Learning Research, vol. 8, no. 2, 2020, pp. 120-137.

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