SYNOPSIS

Report on

Online Quiz Application

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ABSTRACT

The Online Quiz Application is a web-based platform designed to provide an engaging and interactive way for users to create, participate in, and manage quizzes. In today's digital age, the demand for online educational tools and entertainment is rapidly increasing. This project aims to fulfil this demand by offering a user-friendly and feature-rich online quiz platform.

The Online Quiz Application offers a wide range of functionalities for both quiz creators and participants. Users can register and log in to their accounts, create quizzes on various topics, customize quiz settings, and invite others to participate. The platform supports multiple question types, including multiple-choice, true/false, and open-ended questions, allowing creators to design diverse and engaging quizzes.

For quiz participants, the application offers a seamless and enjoyable experience. Users can browse and search for quizzes based on their interests, join public quizzes, or take private quizzes shared with them. Real-time scoring and feedback are provided, enhancing the competitiveness and educational value of the quizzes. Users can track their progress and view detailed performance statistics to identify areas for improvement.

The Online Quiz Application is built with scalability and security in mind. It is developed using modern web technologies, ensuring a responsive and intuitive user interface across various devices. Robust security measures are implemented to protect user data and prevent unauthorized access.

Furthermore, the project emphasizes collaboration and social interaction. Users can follow their friends and view their quiz activity, creating a sense of community around learning and entertainment. Integration with social media platforms enables users to share their quiz results and challenge their friends, fostering healthy competition.

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Introduction

In the dynamic landscape of the 21st century, where information flows ceaselessly and learning knows no boundaries, the integration of technology in education has become paramount. Education has undergone a profound transformation, moving beyond traditional classroom settings and textbooks. In this era of digital enlightenment, we proudly present our ambitious project – the Online Quiz Application – a revolutionary step towards redefining the educational experience.

The Online Quiz Application represents a culmination of innovative ideas, cutting-edge technology, and a deep-seated commitment to enhancing the learning journey for individuals across the globe. This comprehensive platform has been meticulously crafted to address the evolving needs of students, educators, and lifelong learners, ushering in a new era of interactive and engaging education.

Key Features:

1. **User-Friendly Interface:** Our online quiz application will have an intuitive and user-friendly interface, ensuring that both administrators and participants can easily navigate the platform.
2. **Customizable Quiz Creation:** Educators and trainers will have the flexibility to create quizzes with various question types, including multiple choice, true/false, and open-ended questions. They can also set time limits, difficulty levels, and question randomization.
3. **Real-Time Quiz Conduct:** Participants can join quizzes in real-time, providing an engaging and interactive learning experience. The application will support both synchronous and asynchronous quiz modes.
4. **Instant Feedback:** Participants will receive immediate feedback upon completing a quiz, allowing them to understand their performance and areas for improvement.
5. **Comprehensive Reporting:** Administrators can access detailed reports and analytics on quiz results, enabling them to make data-driven decisions and tailor their teaching or training methods accordingly.
6. **Security and Privacy:** Ensuring data security and privacy is paramount. The application will implement robust security measures to protect user information and prevent cheating during quizzes.
7. **Scalability:** The platform will be designed to handle a scalable number of users and quizzes, making it suitable for institutions of all sizes.
8. **Multi-Platform Compatibility:** The online quiz application will be accessible across various devices, including desktops, laptops, tablets, and smartphones, ensuring flexibility in us

Literature Review

1. Application

According to [2] Application software is a subclass of computer software that utilizes the ability of the computer directly to perform a task the user wants. Usually compared to system software that integrates a variety of computer capabilities, but does not directly apply that ability to do a task that benefits the user. The main examples of application software are word processors, worksheets, and media players. Some applications that are joined together into a package are sometimes referred to as a package or application suite (application suite). An example is Microsoft Office and Open Office.org, which combines a word processing application, a worksheet, and several other applications. The applications in a package usually have a user interface that has similarities making it easier for users to learn and use each application. Often, these applications can interact with each other so that it benefits the user.

2. Quiz

Quizzes can add insight and enhance students' abilities about the subject matter that is being learned. Quizzes can also stimulate students to learn. [3] said that the use of technology in the learning process will cause excitement because students interact with images, videos, and animations. This condition of pleasure is an important factor in learning effectiveness. Besides that various kind of activities such as analysis, drawing, visualisation and exploration can be carried out using applications such as multimedia, quiz creator and so on.

3.Website

Understanding the website is an internet facility that connects documents in a local or long-distance scope. Documents on the website are called web pages and links on the website allow users to move from one page to another (hypertext), both between pages stored on the same server and servers around the world [4]. 1.1

4. PHP and MySQL

PHP (Hypertext Pre-processor) is a main server-side script language that is inserted into HTML that is run on the server and can also be used to create desktop applications. According to Betha Sidik, in his book entitled Web Programming with PHP [5], states that: ”PHP is generally known as programming languages scripts that create HTML documents on the fly that are executed on web servers, HTML documents generated from an application not an HTML document created using a text editor or HTML editor, also known as a server-side programming language”. MySQL is database software. MySQL is a relational data type which means MySQL stores its data in the form of interconnected tables. The advantage of storing data in a database is its convenience in storing and displaying data because it is in the form of a table [6].

5.Rapid application development (RAD)

Rapid application development (RAD) or rapid prototyping is a model of software development processes classified as incremental (multilevel) engineering. RAD emphasises short, short and fast development cycles. Short time is an important limitation of this model. Rapid application development uses an

iterative method in developing systems where the working model of the system is constructed at the beginning of the development phase to establish user requirements and subsequently removed [6].

6.Prior Research

in a study that aims to create an online exam system model design for students in a school to get the following results: online test system software that is made able to provide a database of questions, both UAN questions and special questions provided by UN subject teachers based on SKL (graduate competency standard). These questions can be accessed by students using the internet network during school hours or outside school hours. Questions are equipped with answer keys and how to solve problems. [8] in his research entitled Making Online Examination System Application at SMK Garuda Nusantara Bekasi get the results that this application can help solve problems for school management in improving the effectiveness of teaching and learning and online value management with internet technology. Also, it can reduce operational costs and make it easy for students and teachers to assess without having to record grades with a book. [9] in her research entitled Website-Based Online Exam System has succeeded in getting the results that the implementation of the website-based online exam system created generates positive responses from users, in this case, STMIK STIKOM Indonesia students. This is indicated by the outline of the questionnaire results agreeing to the existence of the application and the good quality of the application.

Project / Research Objective

The main objective of "Quiz Application" is to facilitate a user-friendly environment for all users and reduces the manual effort. In past days quiz is conducted manually but in further resolution of the technology we are able to generate the score and pose the queries automatically. The functional requirements include creating users that are going to participate in the quiz, automatic score and report generation and administrative tasks like add, delete, update for admin privilege users. In this application, all the permissions lies with the administrator i.e., specifying the details of the quiz with checking result will show to interviewee or not, addition of question and answers, marks for each question, Set timer for each quiz and generate report with score for each quiz. This web application provides facility to Play online quiz and practice Grammar, Aptitude, and G.K. It provides a good platform, where a student not only judges their knowledge/skill but also, they can improve knowledge/skill at the same time.

Research Methodology

1. Software Development Model

- **Requirements Planning**

At this stage, users (students) and analysts (researchers) conduct a kind of meeting to identify the purpose of the application or system and identify the information needs to achieve the goal.

- **User Design**

At this stage is to carry out the design process and make improvements if there are still design mismatches between the user and the analyst. For this stage, the activeness of the user involved is crucial to achieving the goal, because the user can directly comment if there is a mismatch in the design. The most important thing is that user involvement is needed so that the system developed can provide satisfaction to the user and in addition, the old system does not need to be run in parallel with the new system.

- **Constructions**

The constructions step aims to build the system based on the modelling design results that have been obtained. Based on the results of the modelling design, construction is carried out in the form of coding or codification of the program. Codification is the process of writing source code or source code that will build the system in terms of system interfaces and logic or the process of the system itself. The source codes used in this codification stage include HTML source code as a system interface design, and PHP source code as a programming language that forms the logic or process of the system.

- **Cutover**

The last step taken is the cutover stage. This stage resembles the final task in the SDLC implementation phase, including data conversion, testing online quiz applications to users and training users in using the online quiz application.

2. Five Stages of Research

Overall, research activities will be divided into five stages of research. The following is a brief description of each stage of research.

Stage I

At this stage a deeper identification of needs will be carried out. The expected outcome of this stage is a list of identification, both functional and non-functional needs. At this stage the researcher delves deeper into the application of the task portal that has been made in previous research about what can be added so that this system can become a complete e-learning. In this system, menus and processes for uploading and downloading assignments are given by lecturers. Furthermore, to develop this system into e-learning, researchers added a menu for exam questions that contained online quizzes to complete the task portals that had been made. This stage enters the requirements planning stage in RAD.

Stage II

Based on the identification of needs that have been made, at this stage an analysis of software will be built. The results of the analysis are modelling software that is ready to be designed. In this study, the result of the analysis is the creation of a menu of exam questions which are combined into one in the task portal application. The contents of the menu of this exam are select class, dashboard, manage questions, test results, test settings, user list, main homepage. All menus are made to support the online quiz in order to help lecturers and students for paperless. This stage is entered into the user design stage in RAD.

Stage III

The software model that was created in phase II will be translated into software design that is ready to be coded with the programming languages HTML, CSS, PHP MySQL, Javascript. After all the menu interfaces and application logic flow are finished, the programmer will start working to enter the coding phase of the program. This software is based on a website so that it can be accessed online and in Realtime. This stage is entered into the constructions stage in RAD.

Stage IV

At this stage, the software coding will be done. The programmer starts working at this stage by using the guidance from stages 1-3 which have been explained above. The result of this activity is website based software. This stage is entered into the constructions stage in RAD.

Stage V

At this stage, application testing will be done directly to the user of the website that has been created. This test is when students work on the online quiz in real-time. After finishing the work, a check is made whether the results that come out are appropriate. That can display the number of students who graduated and did not so as to facilitate lecturers in the assessment. This stage is entered into the cutover stage in RAD.

Project / Research Outcome

Here are some common outcomes that you might expect from a project:

1.Functional Quiz Application: The primary outcome would be a fully functional online quiz application. Users should be able to access the application, register or log in, create quizzes, take quizzes, and receive scores and feedback.

2.User Registration and Authentication: Users should be able to register for the application using their email or social media accounts and log in securely. User data should be stored securely.

3. Quiz Creation and Management: The ability for authorized users (e.g., quiz creators or administrators) to create, edit, and manage quizzes. This includes adding questions, options, and setting time limits.

4. Quiz Taking: Users should be able to select and take quizzes. The application should present questions and options, keep track of time if applicable, and provide feedback on correct and incorrect answers.

5. Scoring and Results: The application should calculate and display scores upon completing a quiz. Users should be able to review their results, see correct answers, and possibly receive explanations for the correct answers.

6. Leader boards and Rankings: Optionally, you can include a feature that shows the highest scorers or rankings for quizzes, encouraging competition among users.

7. Feedback and Analytics: Collect user feedback and gather analytics on user behaviour within the application. This data can be used to improve the application over time.

8. Mobile Responsiveness: Ensure that the application is responsive and accessible on various devices, including smartphones, tablets, and desktops.

9. Security Measures: Implement security measures to protect user data, prevent cheating, and ensure the integrity of quizzes.

The specific outcome and success of the project will depend on factors such as the project's goals, budget, timeline, and the level of user engagement and satisfaction achieved.

Proposed time duration

Week Number	Tasks
Week 1-2: **Project Initiation and Planning**	1. Define project objectives and goals. 2. Assemble the project team. 3. Establish communication and collaboration tools. 4. Identify user requirements and technical specifications.
Week 3-4: **System Design and Front-end Development**	1. Develop the system architecture. 2. Design the database structure. 3. Create wireframes for the user interface. 4. Build the user interface using ReactJS.
Week 5-6: **API Integration and Core Development**	1. Integrate external APIs for question retrieval. 2. Ensure seamless data flow between the front-end and back-end. 3. Develop the AI-driven virtual interviewer. 4. Create initial question/response logic.
Week 7-8: **Testing, Refinement, and Deployment**	1. Conduct thorough system testing. 2. Gather initial user feedback. 3. Identify and address issues and bugs. 4. Continue testing and refinement based on user feedback. 5. Finalize the project codebase and configurations. 6. Prepare a presentation and demonstration for the project's final submission.

REFERENCES

1.Patil, Pratek and Karl Moss, 2017, Java Database Programming with JDBC, Coriclis Group Books.

2. Sierra, Kathy and Bert Bates, 2003, Head First Java, O'Reilly.

3. Sarcar, Vaskaran, 2018, Java Design Patterns, Apress.

4. http://www.javaworld.com/javaworld/jw-01-1998/jw-01-credentialreveiw.html

5. http://jdbc-tutorial.com

6. https://www.tutorialspoint.com/java

7. http://www.javapoint.com/java-tutorial

8. https://docs.oracle.com/javase/tutorial