

Advanced Proctored System for Online Quiz

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Abstract

An online quiz system is a web application that is developed or implemented in the Java domain or platform. This project is useful for students to practice for various mock exams. In the current generation, various examinations like GRE, CAT, MAT, etc. are conducted online. This project will also help students to get practice for online exams. The online exam portal is implemented in two modules, namely the student login module and the administrator module. Admin module will add more subjects while in the student login module, students should register in the app and choose their interesting subject and take an online test.

MCQ-based online exam system using java is a test management software that offers a complete solution for computer-based tests (CBT). They are used to set up multiple-choice tests. Due to covid-19, many universities in our country mostly depend on online examinations. Handling a large number of students can cause many problems, especially when managing a quiz manually. Sometimes students may not participate in the manual quiz due to certain unavoidable circumstances. This scenario is unfair to the student who missed the quiz. So, a suitable solution to this problem is to design a system where all students can take the quiz from any location. 2 The Online Quiz System (OQS) is a web-based quiz system; system that tutors can use to assess students effectively, efficiently, and perfectly. The purpose of the online quiz system is to save the lecturer's time as the answers are automatically marked. The online quiz system is developed using Java.

Key words: Online Quiz System, OQS, covid-19, MCQ, and CBT

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Introduction:

Computerized systems have been increasing in education nowadays. Information Technology plays a very important role in education. Computers have made dramatic changes in the learning system. Information technology enables education institutions to save space and time, and allow the delivery of education services with easiness, anywhere, and anytime. For instance, physical libraries are replaced by online libraries available to anyone; anywhere in the world students can interact with lecturers online whether live or via video. With computer software, we can be able to have access to huge databases of information. This gives fundamental change to the education system. Information technology makes the exchanges of information fast and easily. With the growth of IT a lot of data can be found in online library. We don't need to have a physical library in order to read books. Computers are a powerful tool used in all aspects of our studies. We use multimedia technologies to convey ideas, build projects. Information technology enables students to do distance learning, method of learning at a distance instead of learning in a classroom. Communications technologies create possibilities, both individual and institutional, for an unprecedented expansion of home-based learning, much of it part-time. Information technology provides systems that allow students to perform many tasks in an automatic way and not manually. Students can take exam using computerized system; they don't need paper-based exam. They save time and money when using computer system in their studies.

Literature survey:

Many different researchers have focused on the subject of the online exam system, this work can be represented as follows:

Sumaiya Kabir [1], Md. Parvez Hossain [2], Kaushik Mallik [3], Mansura Rahman [4], Md. Jahidul Islam [5], Ayesha Khatun [6]. Extensive online exam system with automatic assessment technique. Release date: 01 DECEMBER 2019.

This article describes the development of an online exam system. This research is part of the development of an online test system with an automatic scoring technique. Algorithms for word frequency calculation, keyword matching, linguistics analysis, and grade generation are designed in this system. The system is implemented using PhpStrom and MySQL. The performance of the executive system is evaluated by many questions and answers.

Prabhat Maity [1], Swapnil Patil [2], Pratiksha Pednekar [3], Akshata Sawant [4], Prof. Monali Rupnar [5]. Online exam system. Date of issue: 03, March 2018. Year: 05 Issue: 03 | March 2018

This article describes basic computer courses at a college with students in areas, at a fixed time, and the same set of quizzes for all examinees in a limited physical area of the examinees. It represents the development of an online examination system. This research is part of the development of an online examination system with various modules.

K. Sandeep [1], M. Tejaswi [2], J. Hemanth [3], B. Vennela [4], D. Pavan [5]. Online Quiz Management System", International Journal of Emerging Technologies and Innovative Research (www.jetir.org | UGC and ISSN Approved), ISSN: 2349-5162, Vol.8, Issue 7, page

no. ppb155-b158, July-2021

This document provides an alternative solution to the existing manual system. Provides paperless work. It can be monitored and controlled remotely. It reduces the required manpower and provides accurate information. Bad practices can be curtailed. The collected information for all the years can be saved and can be accessed at any time. Therefore, the data stored in the repository helps in making management decisions. So it is better to have a web-based system. This system plays an important role in colleges and universities.

Feras Al- Hawari [1], Mai Alshawabkeh [2], Haytham Althawbih [3], Omar Abu Nawas [4],

An integrated and secure web-based exam management system, Date Received: 19 October 2018, Date Revised: 23 February 2019, Date Accepted: 06 April 2019 Issue: 03 | March 2018 This article discusses a web-based examination management system that is implemented in-house. It is designed based on the three-tier architecture of Java Enterprise Edition. It also allows you to define and set up examinations according to a flexible examination tree structure. Additionally, it integrates a rich text editor for writing exams suitable for various engineering and language fields. In addition, it automates the planning, grading, and reporting processes to relieve instructors from such cumbersome tasks. In addition, its capabilities and integration with various databases allow it to offer several security schemes that support strong multi-factor authentication and authorization, detect impersonation, and prevent cheating.

A Systematic Review of Online Exams Solutions in E-Learning: Techniques, Tools, and Global Adoption Received January 25, 2021, accepted February 10, 2021, date of publication February 18, 2021, date of current version March 2, 2021.

E-learning in higher education is exponentially increased during the past decade due to

Its inevitable benefits in critical situations like natural disasters (e.g. COVID-19 pandemic etc.) and war circumstances. The reliable, fair, and seamless execution of online exams in E-learning is highly significant. Particularly, online exams are conducted on E-learning platforms without the physical presence of students and instructors at the same place. This poses several issues like integrity and security during online exams. To address such issues, researchers frequently proposed different techniques and tools.

Joanna Golden [1], Mark Kohlbeck [2]. Addressing cheating when using test bank questions in online classes, Journal of Accounting Education (journal homepage: www.elsevier.com/locate/jaccedu), Date of Received: 14 May 2019, Date of Revised: 07 April 2020, Date of Accepted: 21 April 2020

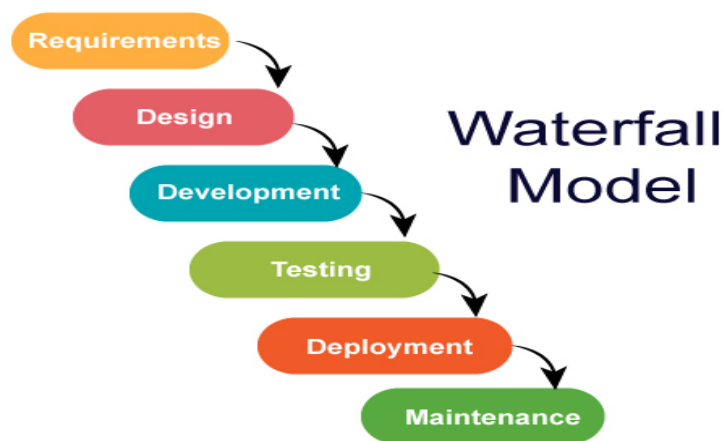
The problem of academic dishonesty in online classes, already widespread, continues to grow. Over a decade ago, the International Centre for Academic Integrity found that 70 percent of college students admitted to some sort of academic dishonesty (NBC, 2006). The problem is likely to be more severe in online environments, where in many cases, the students are not monitored. The issue is further complicated by the emergence of massive

online databases, or test banks, filled with exam questions (McLafferty & Foust, 2004). Searching for exam questions—and their answers—online is an easy task for

Unsupervised and tech-savvy students. Assuming some students taking online exams are prone to this form of academic dishonesty, the question becomes how educators can minimize the effects of their misbehavior.

Project activities:

In order to give solution to problems in an industry, software developer or a team of developers must incorporate a development strategy that encompasses the process, methods and tools layers and generic phases. This strategy is often referred to as process model or a software developing paradigm. A process model for software developing is chosen based on the nature of project and application, the methods and tools to be used, and the controls and deliverables that are required. All software development can be characterized as a problem-solving loop in which distinct stages are encountered. Regardless of the process model that is chosen for a software project, all of the stages coexist simultaneously at some level of detail. The methodology chosen to develop this system is waterfall model approach. I opted for this method because I found that it is the best for my project where the stages involved can assist my level of progress. Many developers prefer waterfall model and widely use it as a development strategy. Waterfall model approach is chosen because the approach allows the development of the system to be revised after the stages is finished. Once the stages are not satisfied, then going back to the previous stages can be considered necessary to add or modify any features. The different stages for this model:



Waterfall Model (Fig 1.0)

Requirement Gathering stage

During this phase, detailed requirements of the software system to be developed are gathered from client.

Design Stage

Plan the programming language, for Example Java, PHP, .net or database like Oracle, MySQL, etc. Or other high-level technical details of the project

Built Stage

After design stage, it is built stage, that is nothing but coding the software.

Test Stage

In this phase, you test the software to verify that it is built as per the specifications given by the client.

Deployment stage

Deploy the application in the respective environment

Maintenance stage

Once your system is ready to use, you may later require change the code as per customer request.

Tools

The tools required to develop the system are: NetBeans IDE 8.2 RC, MySQL 8.0 Command Line Client.

NetBeans IDE 8.2 RC

The NetBeans IDE is a free and open-source software development tool that allow developers to create enterprise, web, desktop, and mobile applications. The NetBeans IDE 8.2 RC is an Integrated Development Environment available for Windows, Mac, Linux, and Solaris. The NetBeans project consists of an open-source IDE and an application platform which enable me to rapidly create the software using Java programming language.

MySQL 8.0 Command Line Client:

MySQL is an open-source RDBMS that relies on SQL for processing the data in the database. MySQL provides APIs for the languages C, C++, Eiffel, Java, Perl, PHP and Python. In addition, OLE DB and ODBC providers exist for MySQL data connection in the Microsoft environment. A MySQL .NET Native Provider is also available, which allows native MySQL to .NET access without the need for OLE DB. MySQL is most commonly used for Web applications and for embedded applications and has become a popular alternative to proprietary database systems because of its speed and reliability. MySQL can run on UNIX, Windows and Mac OS. MySQL is developed, supported and marketed by MySQL AB. The database is available for free under the terms of the GNU General Public License (GPL) or for a fee to those who do not wish to be bound by the terms of the GPL.

Main Block Diagram

Interface Design:

This section contains some screenshots of the components of the system.

- Select Module

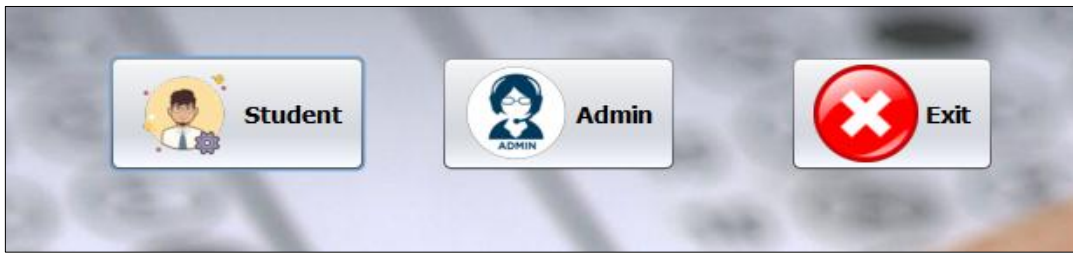


Fig (1.1)

- Admin Login (Admin or Lecturer Module):

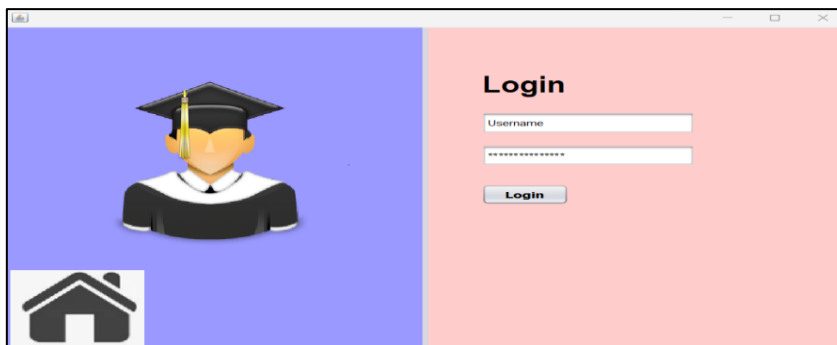


Fig (1.2)

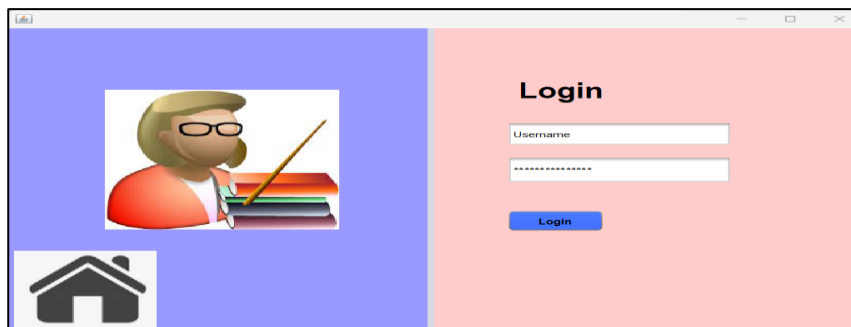


Fig (1.3)

- Main Portal of Online Quiz



- system

Fig (1.5)



Fig (1.6)

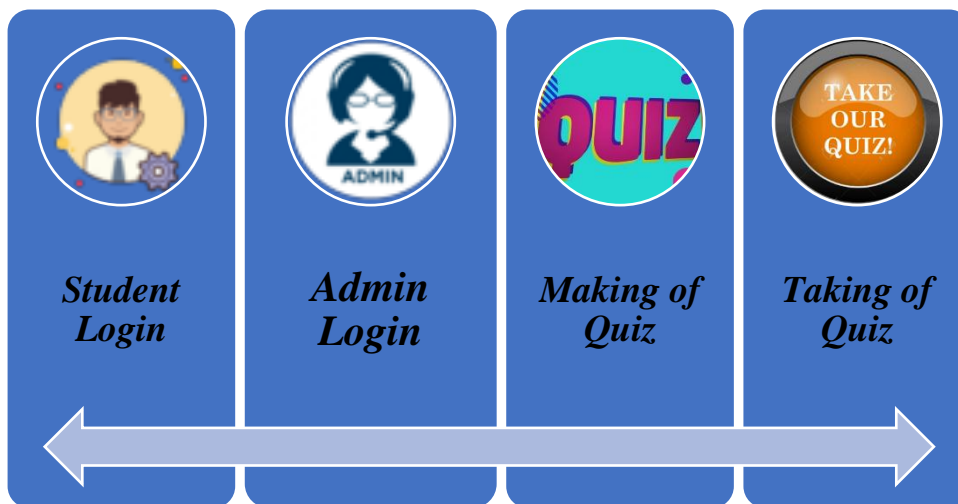


Fig (1.7)

Preface To Java

Java is Object- acquainted, multi-threading language developed by Sun Microsystems in 1991. It's designed to be small, simple, and movable across different platforms as well as OS. Java is Object- acquainted and Supports Internet operations. Java is an expansive library of prewritten classes and is movable among all platforms. Java is erected- in networking security as JRE is inapproachable to another corridor of the computer.

Java Programs

A) Applets

- Small programs designed to add interactivity to Web spots
- Downloaded with the Web runner and launched by the Internet cybersurfed.

B) Servlets

- Run by a Web garçon on the garçon
- Generally, induce Web content

JDK (1.8):

The Java Development Kit (JDK) is a distribution of Java Technology by Oracle Corporation. It implements the Java Language Specification (JLS) and the Java Virtual Machine Specification (JVMS) and provides the Standard Edition (SE) of the Java Application Programming Interface (API).

IDE- NetBeans:

NetBeans IDE is a free, open- source, integrated development terrain (IDE) that enables you to develop desktop, mobile, and web operations. The IDE supports operation development in colorful languages, including Java, HTML5, PHP, and C. The IDE provides intertwined support for the complete development cycle, from design creation through debugging, profiling and deployment. The IDE runs on Windows, Linux, Mac OS X, and other UNIX-grounded systems. The IDE provides comprehensive support for JDK 7 technologies and the most recent Java advancements. It's the first IDE that provides support for JDK 7, Java EE 7, and JavaFX 2. The IDE completely supports Java EE using the rearmost norms for Java, XML, Web services, and SQL and completely supports the GlassFish Garçon, the reference perpetration of Java EE. USE CASE illustration the unified modelling language used is use case illustration. A use case is a set of scripts that describes a commerce between a stoner and a system. A use case illustration displays the relationship among actors and use cases. The two main factors of a use case illustration are use cases and actors. The actors in our system are scholars and speakers. The use case illustration is designed in the following figure

Use case diagram:

The unified modelling language used is use case diagram. A use case is a set of scenarios that describes an interaction between a user and a system. A use case diagram displays the relationship among actors and use cases. The two main components of a use case diagram are use cases and actors. The actors in our system are students and lecturers. The use case diagram is designed in the following figure.

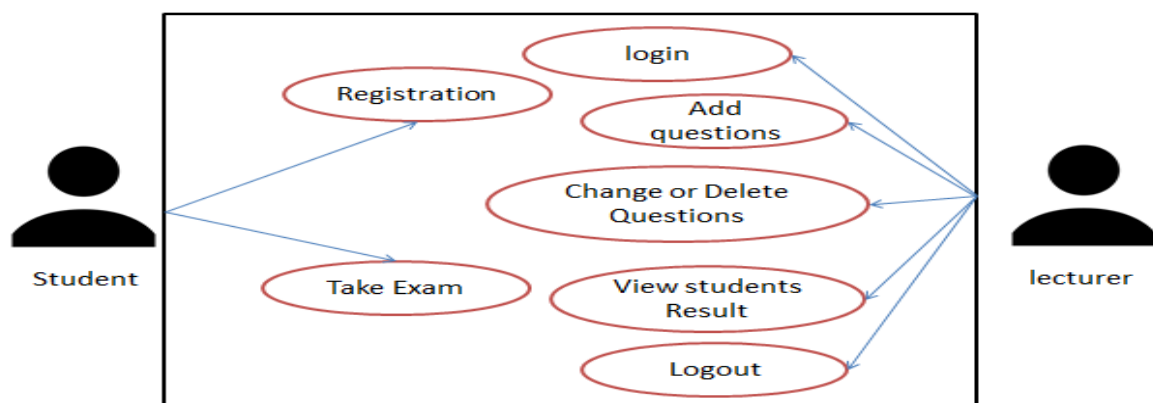


Figure 1.6: Use case diagram

Proposed Activities And Result:

This project in the next part is aimed to developing an online quiz or exam management system for introduction to management for students and lecturers. The purpose of the system is to completely automate the old manual procedure of conducting exam to an online System. We will provide a more efficient online examination system. The system will allow students to register and take the exam. It enables also lecturers to perform many tasks. The system has several functions. The users will do the login before using the system. The lecturers can upload questions and answers; he can view the list of all students who take the exam. He can view the list of students who have marks and those who fail the exam. The students will attempt the exam online. Online quiz or Exam Management system is the best compared to paper-based exam. The automated system helps students and lecturers to save time and makes the process faster. It saves space since answers papers will not be used. With a user-friendly system that has security, integrity and the database is neither inconsistent nor redundant.

Conclusion:

With the completion of the first part of this design, we conclude that it has achieved its purpose. The whole design provides a base for scholars to take their test using software and allow speakers to add questions and answers into the system. The system is developed using Java programming language and data are saved in the database.

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