

# Web Based Quiz Application to Validate Knowledge

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**Abstract:** The concept of multiple choice question tests is currently very popular among educated circles and it contributes to the growth of knowledge of an individual in this pandemic situation. There are various MCQ quiz applications exist in the internet with different criteria. Each of the existing applications has their own goodness and problems. Question must provide answer type like multiple right answer selection and one right answer selection with shuffle questions and answers option. Test screen must provide options accordingly and readily calculated marks. Most of the schools, colleges and other sectors use different application to test their candidate knowledge level in online multiple choice question method in this lockdown period [1]. In this situation students are struggling to this new platform without prior practice in that specific course. Students have chances to attend maximum 3 tests or three to four activities for all the units in a course. It's not sufficient for all the students to score good marks and improve their skills. To avoid this, web based quiz application is developed to provide an easy way to develop student's skills. The main goal of the application is to enable users to practice course wise tests conducted for semester exam. It will help to the educational institution to test student's skills and improve their performance course wise. In a course, each unit has minimum 5 sample MCQ questions available for students practice and the faculties have rights to create their new one or they can use the exits one other than the 5 sample questions provided to students. The students can take the test at anywhere at any time. This will help the students to do the revision during their semester exam preparation [2]. Here students get more practice questions in each course which leads to the high performance in semester exams.

**Keywords:** Multiple Choice Question (MCQ), Graphical User Interface (GUI).

## 1. Introduction

Web based quiz application system is very much important for any Educational institution to prepare their students for exams by saving the time in this critical period. In this website, the list of courses with respect to the semesters is provided. The multiple choice questions for each course are included. It is helpful for students to test their course wise knowledge on their own.

This excludes the need of human efforts for managing question sets. It is designed to replace existing paperwork and manual correction which is not applicable in this pandemic time. The motive is to computerize the existing manual system and help the examiners to save their valuable time and

important data. Apart from this, data which are exist in this system, will exist for long period of time and will be easy accessible [3]. It will reduce the manual process in managing examinations and all issues regarding that. Correct answers will be evaluated by system and students can see their scores either after submitting the test or the faculty can send it manually after some period of time. The interface is very easy and can be maintained by anyone. This familiar GUI will make the user feel more comfortable to navigate and view the data on the system. It allows user to take test and make them improved. It can be completely controlled by admin and the admin can be able to modify the questions.

Here, the students can choose the course from the list of courses specified according to the semester and write their test. This Web Application provides facility to take mcq test worldwide. It saves time as it allows number of students to give the test at a time and displays the result. The validation of the answers can be done with the help of database. It will validate the answers and generate the result as well. It will also help the institution to test the student's knowledge and develop their skills. It allows administrators and coordinator to set different courses and question sets for students [4].

The question sets will support to the automated process and it is an important role in random generation of unique question sets of question papers. The maximum number of questions with better randomization is achieved. Utilize advanced judgments settings, included flexibility in database driven question pooling, skipping, and randomization and include time response to conduct online exam. It facilitates in creation of question paper based on a set of parameters [6]. Web based quiz application provides automated online evaluation of objective type questions. The answers are checked along with the conduction of the test and the students can be made available with the results at the end of the test. Storage of answers, scores, and results are done with the help of database. The administrator has the ability to add, update, view or delete the questions as per the course.

## 2. Objectives

Some of the objectives of this system are as follows. Firstly, web based quiz application software is developed for students to test their knowledge. Secondly, no installation is required to

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run the application in client system. Thirdly, manual work and time taken get reduced. Fourthly, corrections are done automatically by the system [7]. Fifthly, marks allocated for each question are added automatically based on correct answer to determine the result of the test. Sixthly, reports are generated automatically at the end of the test. Seventhly, correct answers are highlighted with green color and wrong answers with red color and finally, student result can be saved and can be retrieved at any time.

### 3. Methodology

The methodology used for developing this system is 'waterfall model'. In this waterfall model one portion of work follows after another in a linear sequence to design, develop and deliver the application [8, 9]. Following steps will be followed in this methodology:

- Initiation (Requirement Specification),
- Planning and design,
- Execution (construction and coding),
- Validation (Testing) and
- Closure (Installation and Maintenance).

Initially, the student has to enter into the website. The website displays the number of semesters. In that, the student has to click on the particular semester and the list of Courses that are available for the particular semester will be displayed on the screen. The student can select the Course and start writing the test. At last, the score for which the student has completed the test will be displayed.

The project is created using .html and .css, after entering into the website user is directed to a welcome page which user have the option to login as staff or student, which allow users to select their type of login to system; This the first page which user observe after running the project. This page will able the user to select the type of login. Selecting "Login as Teacher" will direct the user to Teacher Login Page and selecting "Login as Student" will direct the user to Student Login Page

*Teacher Login:* Able the teachers to login to system with a valid user name and password and able to access the web pages for teachers.

*Student Login:* Able the students to login to system with a valid user name and password and able to access the web pages of students.

*Login Pages:* Login page exist for both teachers and student. After user select the type of login. The login page of particular user will be displayed. Users enter their user name and password and after clicking on login first system will check is it a valid user or not. If user is authenticated by the system, will be directed to particular Home Page and if not authenticated by the system the message "Either user name or password is incorrect" will be displayed to user.

*Home Pages:* After users successfully login to system. Each particular user will be directed to their particular Home Page which is "Teacher Home" and "Student Home". Teacher Home will able the teachers to observe information about the Online MCQ Quiz and observe student results by clicking on "Student Marks". Student Home will able the student to choose the

semester and Course and observe the information about the Online MCQ Quiz, attempt a test by clicking on "Attempt Test" and observe his/her result by click on "Marks".

### 4. Modules

The architecture of the system will be divided into the two basic modules. These two modules are listed below,

#### A. Teaching Module

This module is developed for teachers. The faculty is successfully login to the webpage teachers can upload question papers from their profile. They can add delete or modify existing questions. From this module they can perform question management. They can also check results of their respective Courses. We are given higher authority for the faculty for managing the courses; they can freely add, modify or remove tests and their corresponding data. In their test they can alter the number of questions and options for the students as they have the full control over the management of examination and we have implemented in such an easy and user friendly manner so that person can effectively implement and manage the test.

#### B. Students Module

Students can appear for examination using this module. The student is required to log in to the website to take the test. After the student is successfully login to the page they are directed to a home page where they can choose the semester and the subject. The selected test of the student will begin when they take test, the student has to choose the appropriate answers to the given questions and select next, if the answer for the question is correct then the selected option will appear as green color or if it is wrong it will appear as red. After finishing the test, the acquired score and percentage will be displayed. Although result will be shown to students immediately after the result, but they can also check their marks later using this module. Server resides between all the modules, as shown in figure 1.

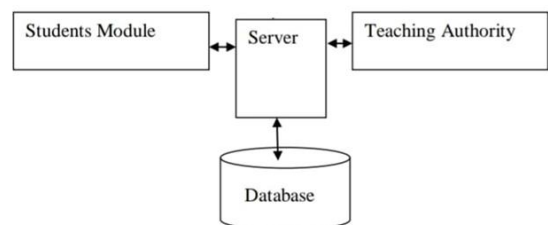


Fig. 1. Architecture of modules of online examination system

### 5. Conclusion

In this system the quiz application for an institution is accomplished and the existing manuals are computerized in the system. The facility of taking test semester wise for each course has been implemented. The online quiz has facilitated student in learning, gaining and testing their knowledge and help the faculties to save their valuable time and important data. This system has been successfully created a platform where student can take the test, review their test performance and display the

score at the end of the test. It allows huge number of students to take the test at a time and provide convenience to the users. By use of this technology a platform is created where students can take the test for free at anywhere and faculty can save their time and workload.

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