

# Implementation of Web Quiz and Assignment Portal

Harikesh Singh, Jitendra Kumar Chauhan, Sumit Yadav, Pankaj Kumar Bansal, Nameh Dhiman

**Abstract:** *Web Quiz and Assignment Portal is a system that enable the student to submit their assignment online without submitting any physical file & similarly attending the quiz removing the pen & paper approach. In this paper, an efficient portal has been implemented and analyzed for conducting online web quizzes and also provided the option of assignment submission.*

**Keywords:** *WQA, Online resources analysis, Dynamic negative marking, Iterative model, Plagiarism, Use case diagram, Activity diagram.*

## I. INTRODUCTION

Nowadays, higher education has become one of the most important factor in an individual's professional progress. Parents spend their hard-earned money to send their children to the best university that they can afford. These days the universities all over the world are more concerned about their quality on basis of which these universities are ranked & their reputation also depend on this ranking. Since the beginning academic education has been evolving and improving itself using different techniques and practices. Higher education is consisting of courses, exams and projects that need to be accomplished to be able to get a bachelor's or master's degree.

In modern day the assignment & day to day evaluations or quiz are becoming more & more important. Students these days are very busy doing assignments, giving day to day evaluations or quiz leaving them less time to do any other extra activity. Since the beginning of academic education testing & evaluation has been an important part of instructional system design for the classroom-based courses. The evaluation helps the instructor to check the learning of the students & on the other hand also helps students to check their progress in the course.

However, evaluation of the quiz or assignment takes a lot of time whether the size of classroom is small or large. The Web Quiz & Assignment Submission Portal is proposed to be implemented at colleges or universities by lecturers, on undergraduate students and other users.

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It is a web-based application that is designed to be take conduct quiz, where lecturers are able to add/edit questions, float the assignments & students are also able to participate in quiz & submit their assignments.

The following are the objectives of the WQA Portal:

- To reduce the time taken in evaluating the assignments or the day to day evaluations or quiz.
- To provide a suitable interface to students & faculty which surpasses the pen & paper approach.
- Constructing a system which is unbiased in evaluation, detects plagiarism amongst the files.

## A. Open Source Technologies

The WQA Portal, a web-based application, has been developed by using the open sources of scripting languages of PHP and backend with the MySQL database. Following are brief descriptions about the web technologies used for developing the online quiz system.

HTML, or Hypertext Mark-up Language is employed to specify the logical organization of a document, with important hypertext extensions. This choice was made because many different "browsers" with very different abilities, may view the same HTML document. The detailed rules for HTML.

PHP or Hypertext Pre-processor is a widely used Open Source general-purpose scripting language that is especially suited for Web development and can be embedded into HTML. PHP is also a Server-Side Scripting Language, which means that Internet users are unable to view the source code on the Client-Side because the code is executed on the server. PHP can be used on all major operating systems, including Linux, UNIX and also Microsoft environments.

MySQL is a relational database management system that stores data in separate tables rather than putting all the data in one big storeroom. MySQL is also Open Source Software that is possible for anyone to use and modify. MySQL is very fast, reliable, and easy to use.

## II. SIMILAR SYSTEM REVIEW

### A. Testyou.in

There is a category of the quiz that you can enter by your own choice. At front end during the exam was conducted apart from the Q/Ans we were provided with a timer & a display of how many questions we have attempted. After submitting the quiz, the score is displayed in the form of a certificate. An inbuilt method is provided in test you for creating our own question bank in which we have the following options: -

- Manual data entry.
- Through spreadsheet.



In case of manual entry separate columns for the Q/Ans, subject. If the quiz is of MCQ type, then a checkbox was provided to admin of the quiz to indicate the correct answer. We can also fetch data from previously created database if any. After all, above steps we are ready to publish our test [1].

**B. Turnitin**

The Turnitin is a commercial, internet-based plagiarism detection service launched in 1997. University & high schools typically buy licenses to use the software as a service website, which checks the submitted documents against its database & the content of other website with aim of identifying plagiarism. Results can also be used in formative assessment to help students avoid the plagiarism & improve their writing skills.

**C. Plagscan**

It is an on-premise & SaaS-based plagiarism detection software, mostly used by academic institution. It serves University of Jordan, The Fortis College Largo & Free University of Berlin. It is a paid service based on category individual & organization.

**D. Duplichecker**

It can be used for the following: -

- Website content
- Assignments, essay
- Text to be published

Working: -

- Create your free account.
- Enter URL or copy text or upload file.
- Check plagiarism, the result is list of all websites from where the data is possibly taken [3].

**E. Paperrater**

Paper rater is a paid service. If you need to check your text for grammar mistakes, have it proof read with suggestions for different wording. It has no ability to save reports.

**F. Plagiarisma**

- Supports 190+ languages.
- Checking plagiarism by uploading file or by entering URL.
- It has limited checks.
- Do not store uploaded content.

**G. Plagiarismchecker**

- It has a text space in the site.
- Here you can place a sentence/paragraph from the document.
- Shows all related URL from where text has been copied [4].

**H. Quetext**

- A text area is provided for user to place the text.
- As result the copied text becomes underlined.
- Also, provides how much text is copied in percentage form.
- Provides URL from where the text is copied [5].

**I. Hippoquiz**

- Drag and Drop option to add Q/A.
- No resume of incomplete test.
- No such option for enabling negative marking.
- Option to reveal answers after completion of the quiz with explanation.
- Scoring report on profile as well as by Email [2].

**III. COMPARISON BETWEEN WQA & EXISTING MODEL**

**Table. 1 Comparative Analysis of Existing Quiz systems and WQA Portal**

Testyou.in [1]	Hippo quiz [2]	WQA Portal
The system is able to take the alpha-numeric entries at time of login.	The system is able to take alpha-numeric entries at time of login.	The portal can take the alpha-numeric entries at time of login.
The system is able to provide feature of dynamic negative marking.	The system is not able to provide feature of dynamic negative marking.	The portal can provide feature of dynamic negative marking.
The system is able to store marks of the students after completing quiz.	The system is able to store marks of the students and can generate report.	The portal is able to store marks of the students after completing quiz.

**Table 2. Comparative Analysis of Existing Assignments and WQA Portal**

Duplichecker [3]	Plagiarism Checker [4]	WQA Portal
The system allows to enter a particular file.	The system allows to enter only a part of text.	The portal allows you to enter two files at a time which are stored in database.
The result displayed shows the URL's from where the text is possibly copied.	The result displayed shows the URL's from where the text is possibly copied.	The result displayed shows the difference between two files text & similarity among the text.
The system does not allow to create database to refer files in future.	The system does not allow to create database to refer files in future.	The portal allows to create database to refer files in future.
The scope of system is limited to checking plagiarism.	The scope of system is limited to checking plagiarism.	The portal allows files to get stored for future reference & also can check plagiarism.



#### IV. PROPOSED MODEL

Web Quiz & Assignment Submission Portal is an approach for conducting quiz as well as submit the assignments online which makes it a useful application in the world of technology. The Web Quiz & Assignment Submission Portal helps the faculty as well as the student to save time in manually writing on paper sheets which ultimately leads to the wastage of resource like paper in an era in which it is possible to write on computer, which when combined with the other application can do lot more than just writing.

##### A. Features of WQA System

- **Functional Capabilities:** The ultimate aim of this project is to help the quiz analysis and facilitate the faculties the faculties for easy evaluation of the students and generation of the automatic score cards. The system shall display the set of questions with certain rules. The mark is given, and report is generated based on the correct answers. Web Quiz & Assignment Submission Portal has the capability of surpassing the existing model being used as it overcomes the drawbacks of the existing system.

The Web Quiz Portal allows the admin to register & login into the system for managing the quiz, setting parameters for the quiz. The portal allows the admin to upload the whole quiz i.e. the collection of questions & answers in a form of a text file (.txt extension) which proves to be very human friendly approach, time saving & reduces the headache of separating the questions from the file & then filling the required table in the spreadsheet & similarly filling the table for all the options into the spreadsheet & then the system would be able to conduct the quiz which was the approach which was used until now.

The WQA system works on directly uploading text (.txt) files of the whole quiz & correct answers files into the system & with just one click we are able to generate the database which will be used for conducting the quiz efficiently. Similarly, the student can also register & login into the quiz portal & attend the quiz.

The next part which is Assignment Submission Portal is basically created to help students to upload their assignments directly through their system & let go the pen paper approach. The Faculties can register on the portal & then upload their assignments on the portal. The students can also create their own id on the portal by registering themselves & can view the uploaded assignments & can submit their respective solutions. When all the submissions are done the faculty can check plagiarism in amongst the files & can award marks accordingly.

- **Performance Level:** The quiz portal as discussed above provides an easiness in creation of the quiz & at the same time of conducting it & evaluating it. The portal gives students immense opportunity to the students for their self-evaluation in the quiz. The Assignment Submission Portal at the same time provides faculty & students a suitable interface for uploading & submitting assignments thus removing pen paper method, saving space & can later any particular assignment could be retrieved from the system.

- **Data Structures:** The data created submitted is stored in tabular form using MYSQL in the database. It provides easy access to the users to access the information they need.

- **Safety:** No data loss occurs in the quiz or assignment submission portal. It is very much protected in such a way that it gives access to students when they enter correct username & password otherwise access is not granted. The result in quiz is generated through the system & plagiarism in the assignment is also checked through the system so that no body is prone to mistake.

- **Reliability:** We assure that the project is completely authenticated in order to enhance the security & corruptions of the database as well as the software. The person is given access only if he/she enters correct username & password.

##### B. Use Case Diagram

The user of our system is students & faculty members. This diagram will explain their interaction with the system. The use case diagram as in Figure1. is given in the high level by representing the goal of the actors. The admin can enter the quiz generation module by clearing all authentication phases & can create the quiz. The new user can perform the act of registering if he/she is entering the portal for the first time.

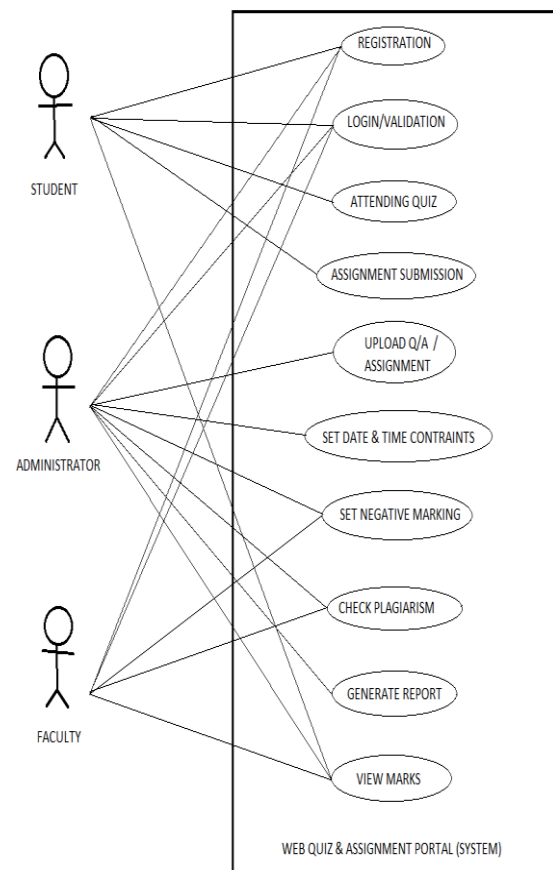


Fig. 1 Use Case Diagram

##### C. Activity Diagram

Activity diagram is another important diagram to describe the dynamic aspects of this system. It is basically a flowchart to represent the flow from one activity to another. This flow is sequential, branched and concurrent at times to represent the flow control by using fork, join etc.





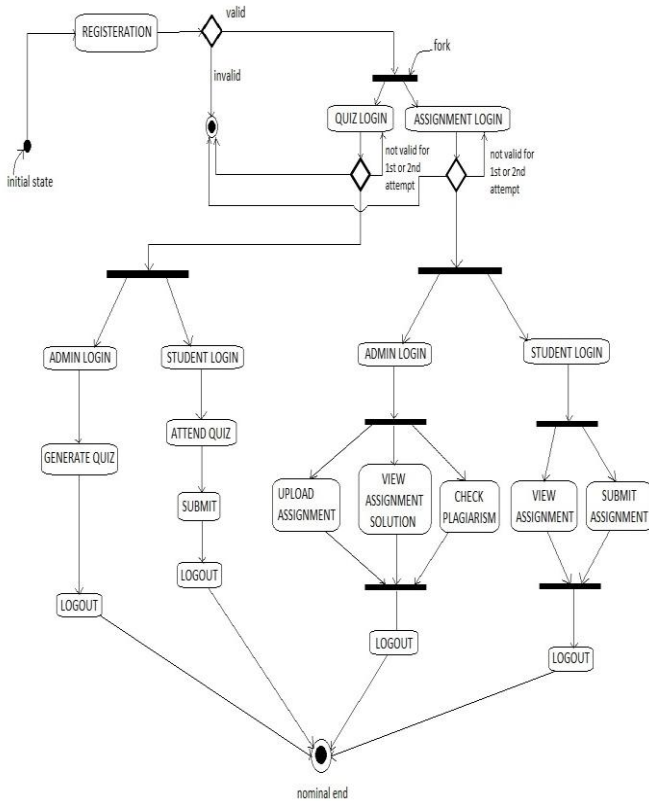


Fig. 2 Activity Diagram

V. SOFTWARE DEVELOPMENT APPROACH

Software Development Approach means the approach used in developing the project. To develop the software, a software process model should be proposed and monitored at the beginning. A software process model for software engineering is chosen based on nature of the project, size requirements, methods and tools to be used. Among the many types of software process models, we choose the *Iterative model* to develop the Web Quiz and Assignment Submission System. Iterative model is also called *Incremental model*. It is used when the initial requirements are well defined but overall scope is not clear. During each iteration, the development module goes through five phases-

Communication, Planning, Modelling, Construction and Deployment. The Communication phase contain-project initiation, requirements gathering; the Planning phase contains- estimation, scheduling and tracking; the Modelling phase contain- analysis and design; the Construction phase contain- Coding and Testing and the Deployment phase contain- delivery, support and feedback. Iterative model Advantages are-

- Risks are identified and resolved during iteration.
- We can go to one phase to another phase
- With every increment, operational product is delivered.
- Supports changing requirements.
- Testing and Debugging during smaller iteration is easy.

Disadvantages are-

- More resources may be required.
- More management attention is required.
- End of project may not be known which about risk.

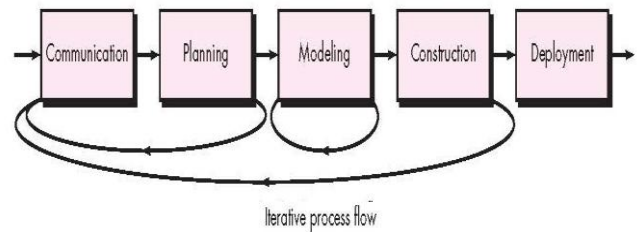


Fig. 3 Iterative model [7]

The phases in Incremental model-

- **Communication:** This phase contains the Project Initiation and Requirements gathering. In this model initial requirements are well defined but overall scope is not clear. Requirements for a software to be developed are gathered. These requirements will be in a language that is understood by the customer/user. We gathered the requirements through analysis the existing and need for the new system.
- **Planning:** This phase contains the Estimation, Scheduling and Tracking. To do planning of overall project estimating the time to complete the project and scheduling the work for the different phases, dividing the work between the team mates. By tracking checking the progress of the project.

Scheduling and distributing different tasks along with the estimation of completion for different modules. Divided the Front end and Backend part of the system among team members.

- **Modelling:** This phase contains the Analysis and Design. Analysis focus on problem (What) domain of the project and Design focuses on solution (How) domain of the project. The gathered requirements are analyzed from implementation point of view and the software specifications are written. Comparative Analysis on the basis of existing system and online resources & design the proposed model. Design phase involves arriving at the software architecture and implementation specifies based on technology chosen for development. The design process translates requirements into a representation of the software that can be assessed for quality before coding begins.

- **Construction:** Construction phase contains Coding and Testing part. Coding work is done in the phase and code is developed. The design must be translated into a machine-readable form. Software design is translated into source code. We used different languages and frameworks for coding like HTML, CSS, Bootstrap, JavaScript for Front-end part and PHP, MySQL for Back-end part and represent the User Interface (UI) and page layouts with the help of web browser and web server. Each module is tested by doing different types of testing- unit testing, integration testing and system testing. The testing phase is only stage where the product defects are reported, tracked and fixed and retested, until the product reaches the quality standards defined in the SRS. For plagiarism checker we used the PHP library "Text\_Diff". A few debugging steps have been taken in this phase to ensure the whole web portal are functioning properly:



- The hyperlinks and buttons of every web pages have been tested to ensure that every hyperlink and button is well functioning.
- The databases are tested when saving data and also reading the data from databases.

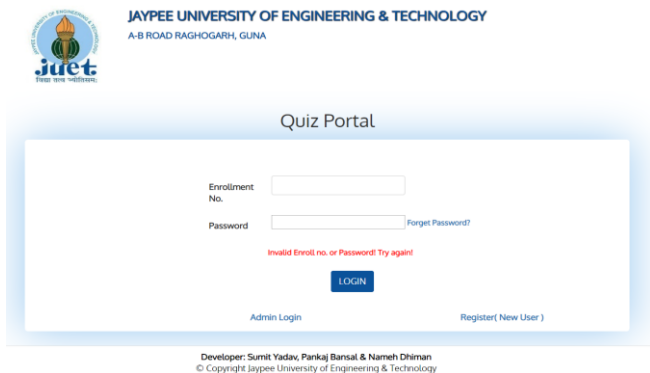


Fig. 4 Login Page



Fig. 5 Registration Page

Figure4 & Figure5, shows Registration and Login pages have been tested, authenticated and validated fully so that user once register with his Enrollment no., can't register again and after giving Quiz and submitting Assignment he can't give quiz and submit assignment again.

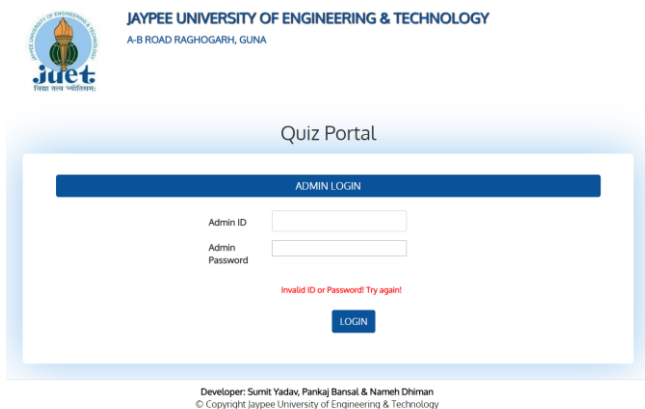


Fig. 6 Admin Login error

Figure6. shows only the authorized admin can login into the Admin Login page. The Admin can login into by the given ID and password only.

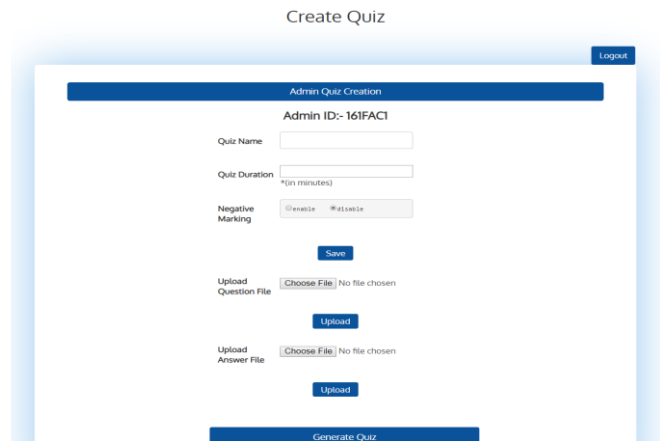


Fig. 7 Admin Quiz Create Page

Figure7. shows Admin Quiz Create, here the question and answer file are uploaded by “.txt” format file only.

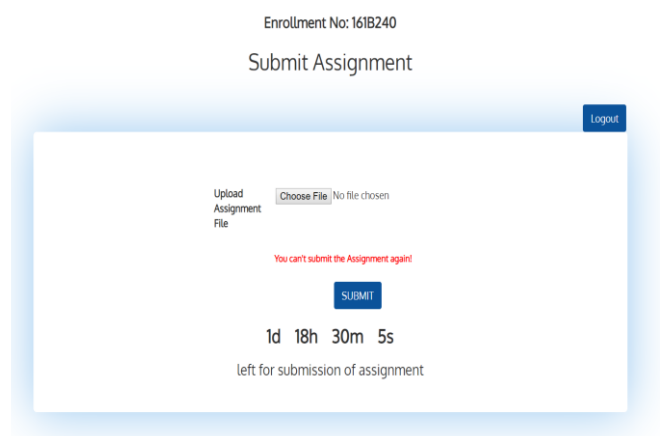


Fig. 8 Student Assignment Submission Page

Figure8. shows Student can't submit the assignment after one submission. Figure9. shows if user forget his password, the he can use this feature by entering his Enrollment no. and registered Email ID, if he enters wrong email id registered with the enrollment no. then error will show.

- **Deployment:** This phase contains delivery feedback and support. Software development is all of the activities that make a software system available for use. Delivering the product to the client and getting feedback. Giving them the right support of the system. It is yet to be done in our project.



Fig. 9 Forget Password Page

### VI. CONCLUSION AND FUTURE WORK

This Web Quiz and Assignment Portal provides an online platform for conducting Quizzes and submitting Assignments. It is an efficient manner and no wastage of time checking the quiz and assignment, saves a lot of time, paper and effort.

Only the registered users can login to the quiz and assignment portal with his Enrollment no. and Password. As the quiz gets over, marks scored will display so no need to wait for the result and administrator can view the marks of all the students. Administrator has a privilege to generate the quiz, modify and delete the particular questions. Admin can enable or disable the negative marking for a particular quiz. Question and Answer file uploaded by the admin should be in “.txt” format with the format defined in Test cases.

In Assignment portal admin can float the Assignment file with float date and dead date and can view the submitted assignment by the students and can check plagiarism in the submitted file. It reduces the task of checking plagiarism for the faculty. Students can view the floated assignment question file and can submit the assignment solution in a “.txt” file format. Student can submit assignment only once and after dead date of assignment gets over student can't submit assignment.

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