

A Comparative Study on Online Quiz Platforms: Google Forms, Kahoot, Microsoft Forms

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Abstract— Educational institutions use online examination system in order to upgrade the standard of instructions by having an administered calculation of outcomes for a self-paced environment for students. Time saving is the main objective of having an online quiz platform, but it also has some limitations. It cannot be considered as efficient. An online quiz platform having the ability to address academic malpractice should always be the major objective to prevent such malpractices. The purpose of this online quiz platform is to maintain the effectiveness and integrity of the exam conduction as the present quiz platform has failed to do. So we have came up with a quiz platform that avoids students taking screenshots, screen recording and tab switching with an attempt to run third-party applications during the test. The data of the project is maintained in MySQL database. The frontend of the project is implemented by using HTML, JAVASCRIPT, BOOTSTRAP. The backend is implemented by using Java technologies. Faculty has the privilege of creating, modifying and deleting test papers. The students will be able to register, login and attend the test and see the results also.

Keywords: Online Quiz Platform, Teacher, Student, Online Test, Java, Javascript, Mysql, Bootstrap

I. INTRODUCTION

The current education system is being exposed to very swift development in the method of teaching. The method of teaching in this case, includes inter mutual and interesting teaching with the usage of technology. The education systems are utilizing the technological sophistication and internet dependent methods. The teaching procedure must also always be updated in the appearance, system functionality and delivery of information. This process has a positive impact on the education system. These teaching procedures are referred to as electronic teaching methods or e-learning. The e-learning procedure is anticipated to help to educate and learning better and more efficiently. These methods effectively evaluates the student’s knowledge in an effective manner. By pursuing these methods will be very helpful as the contents will be better absorbed through exercises, quizzes in addition to being paperless system.

Usually any quiz or exam is considered as an evaluation material for testing the students knowledge about the subjects. These quizzes serve as a feedback system for teachers on the productiveness of the learning process itself. With various objectives, the quiz can be considered equivalent to a test as they can determine whether the students meet the standards set or fails to meet these standards.

Online quiz is a platform for conducting experiments in the form of online surveys. An experiment contains several assignment sets. This structure allows researchers to have fine control over what each participant sees as well as detailed information about how each

participant responds to each assignment. This application allows the students to take tests in the form of multiple choice questions. The platform generates results based on the quiz conducted. We are presenting a web-based system for online quiz that reduces consumption of more time by altering the conventional method of quiz conduction which is more efficient than the existing ones. Here we are comparing the three platforms that is google forms, kahoot and Microsoft teams.

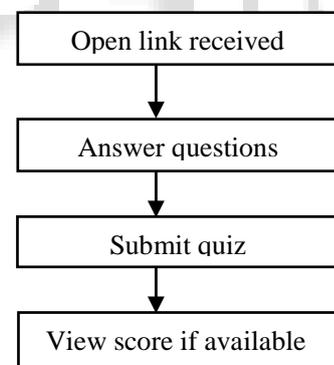
II. METHODOLOGY

A. Google forms

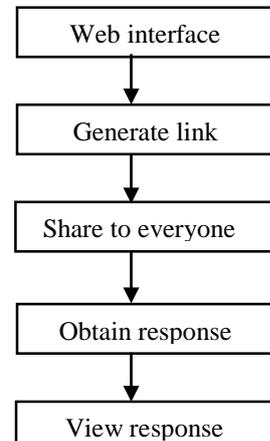
Google forms is a software which is a part of free web based Google docs editor offered by google. The information which is collected can be entered into the spreadsheet automatically.

The server side has been implemented by using the JAVA programming language. The user’s side of the app which is the client side consists of web applications which is enhanced by using the JavaScript. The servers maintaining the google docs and forms aren’t powerful. They are workhorse computers. It includes arrangement of hardware such as application servers and database servers. The application servers runs the software that makes google Docs possible. The database servers act as storage.

FLOW CHART OF STUDENT MODULE



FLOW CHART OF TEACHER MODULE

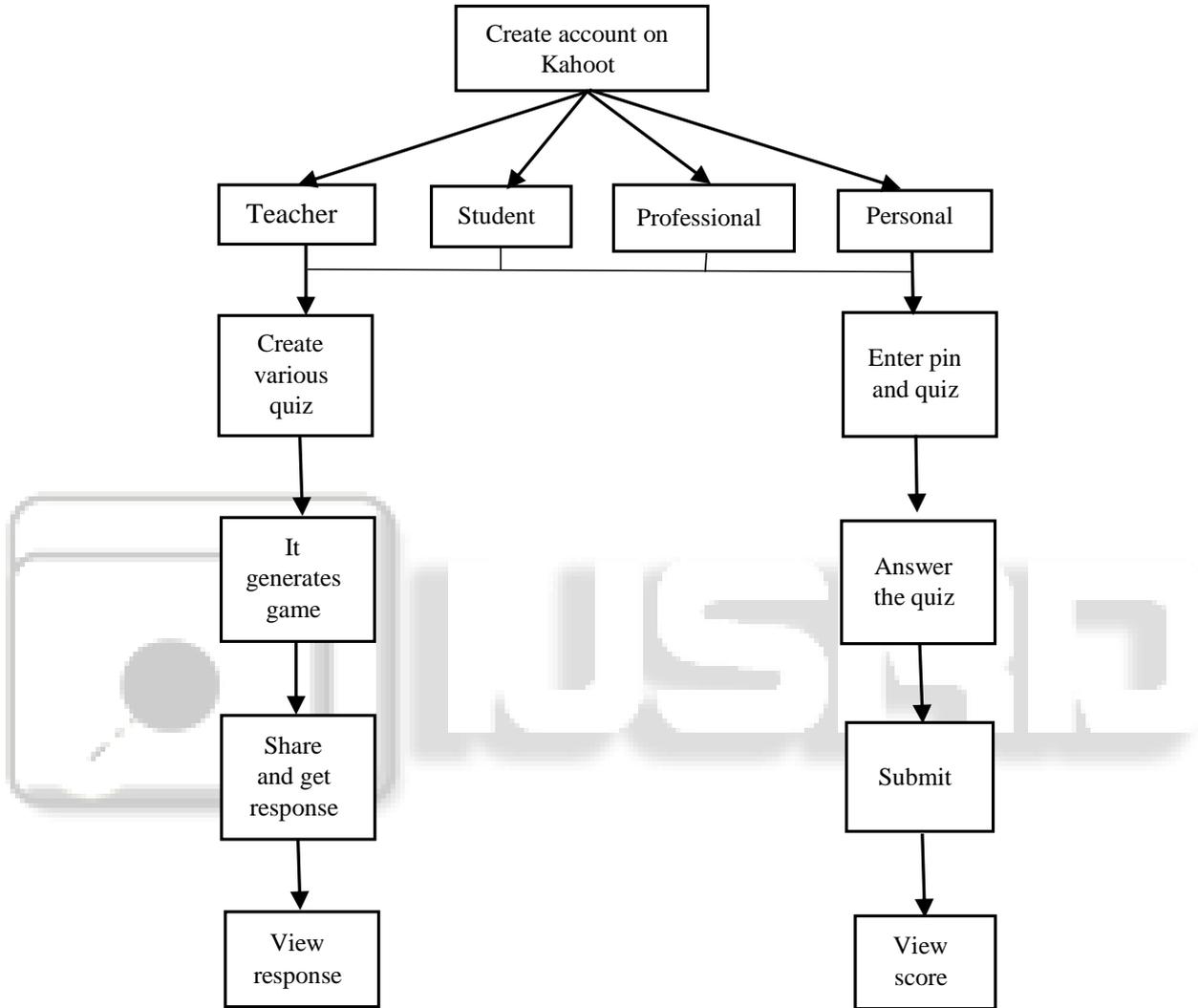


B. Kahoot

It is a free game based learning platform used by millions of people to discover, create, play and share learning games. They are user-generated multiple-choice quizzes that can be assessed by a web browser or the kahoot app. The gameplay is simple; all players connect using a generated game PIN shown on the common screen, and uses a device to answer questions created by a teacher. These questions can be

changed to award points. The sooner the players finish the quiz they get extra points if the answers are correct.

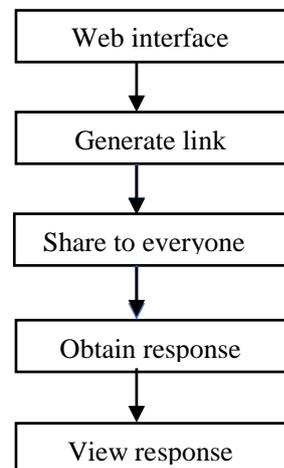
The kahoot app is developed by using stack comprising Java on the backend and Typescript on the frontend. WIP api is used which supports all live game functions. For storage of information Database is used. All the features that are present in kahoot app are available free of cost but only some of the features are paid.



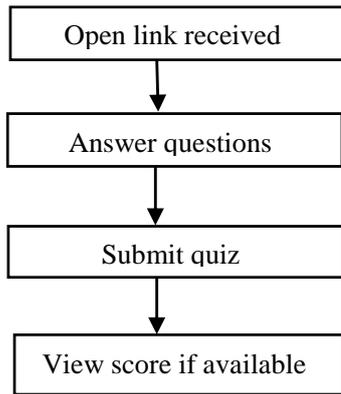
C. Microsoft forms

Microsoft forms is a simple, lightweight app in office that lets users to quickly and easily create custom quizzes, surveys, polls and more. In order to use Microsoft forms having a Microsoft account is necessary. Like the other platforms this platform also has two modules namely teacher and student module

FLOW CHART OF TEACHER MODULE



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The features of these platforms can be summarized as follows:

Name of the application	Tab switching	Screen shots/ Recording	Timer
Google forms	Yes	Yes	No
Kahoot	Yes	Yes	No
Microsoft forms	Yes	Yes	No
Online quiz platform	No	No	Yes

III. LITERATURE REVIEW

- 1) Navneet Singh Malik, Navdeep Tomar, Omvesh Chaudhary[1] have developed an application for conducting quiz tests named “Online Quiz”. It is known that “Online Quiz” is an application that has a main motive of conveying education to children. This application provides the students options of registering themselves to the application and taking quiz tests based on the scheduled time. The same feature will be present in our platform also. There are three panels present in this application namely admin, teacher, student. The presence of admin module is a disadvantage since another person from the institute should be present to handle the application. In our application we have removed the admin module and instead the application will be completely authorized by the teacher itself.
- 2) Maria BellanarIsmiati, LatiusHermawan[2], have made an online quiz application, the results obtained are that this application can function as it should be able to do online and real-time quizzes and can display information on grades and information on whether or not students are working on the online quiz. This online quiz is also made to complete the task portal application that has been made in previous research. The process of conducting this research initiate from Requirements Planning, User Design, Construction, and Testing / Evaluation until finally, the final report is made. This research will show on Quiz menu with questions in the form multiple choice, and there will be immediately the results of right and wrong answers along with marks / grades and information on whether the students are pass or not.
- 3) Vikas BO, AnushkaSen[3] made a project name “Quiz Portal: for Students and Faculty” which was a very effectual way of conducting online examination in an

institution. This method saves a lot of time and allows multiple students to take the test simultaneously. This application also displays the results along with the score, after completion of test.

- 4) The teacher / administrator can form, alter and delete the test papers and its questions. With his/her unique id, the students can register, login and take the test and can access the results as well. The same methodologies will be present in our application also . Since in the future they have aimed to make their application more secure we considered this idea and are aiming to design an application to prevent malpractices present in the existing applications.
- 5) Osman A. Nasr, AbdAlmajeedAlajab, Ahmed A. Ahmed, Khalid Mohiuddin[4], have developed a web-based system to produce electronic systems capable of assisting university faculty members in preparing exams and keeping them for years. The web based system for Exam preparation is an application that has been created to help faculty members in creating exams. The system will provide the equipments for a faculty members to create and classify questions. Questions created with the system can then be included in tests. Test questions can be randomized. This functionality allows faculty members to focus on the content of the test instead of the layout. Tests can then be shared with other faculties. The traditional way of preparing for quizzes has may drawbacks such as time-consuming since it is done manually. Creating test papers is challenges, uninteresting and time-consuming for faculty members. Usually the faculty members keep their question pond for test paper in any format to aid students in preparing for future exams.
- 6) D. Suganya, R. P. Harshini, D. Diloj, K. Kaviya, A. Muhammad Aarif[5] have developed 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 students in learning, gaining and testing their knowledge and assist the faculty members to save their precious time and certain 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 large number of students to take the test at a time and provide convenience to the end users. They have used two modules in their application namely teacher and student module. The same concept will be used in our application. In addition we are aiming to make our application more secure and to prevent malpractices
- 7) Muhammad ZubairAsghar, Iqra Sana, Khushboo Nasir, Hina Iqbal, FazalMasudKundi, Sadia Ismail[6]have developed an application which is basically android oriented through which quiz tests can be conducted. This application is created for educational field, allows the teachers / administrators to create the multiple choice question tests for various examinations carried out on country level and international level. The major objective of the application is to provide the students a platform to exercise for subjective tests conducted for admissions

and hiring. The user can utilize these functionalities only once. But this system is not secure and hence we are aiming to overcome this problem in our application.

- 8) Daniel Schon, Stephan Kopf, Wolfgang Effelsberg[7] have developed a project. In this for smartphones a lightweight, media supporting quiz app was introduced. Here smartphone was used as voting devices and to give quiz for module wise administration quiz which was added to existing university e-learning platform. QR (Quick Response) codes were used to access these link for voting and module quizzes. Their idea of using mobiles for conducting quizzes gave us the idea for designing a mobile application for students.
- 9) Prasant Kornepati [8] has developed an online quiz system. They have used HTML, CSS and Javascript for client side, for dynamic progression of content C# and ASP.NET was used. SQL was used as database server for this quiz application. This application was stored with 300 questions that would randomly generate MCQs of selected topics from the relational database. Immediately the grading of the student was possible and students were also enabled to solve quiz for practice purpose, grading would take some time until all the students complete the quiz when all the students had quiz simultaneously. Template format questions were supported by the quiz application. The main advantages of template question was each student used to get different questions based on same concept. This helped to avoid malpractice.
- 10) Elena-Carmen Tentea, Valeriu Manuel Ionsecu[9] have developed a quiz application. They came up with many problems like online testing of domain, and the data storage of the result and preventing tampering of it. As there were many previous novel technologies was used for education purpose and mainly for online tests. In this paper it shows the single sign in, creating quizzes and protect result from tampering. This shows the real time database for showing results immediately after the quiz completion. This process make possible for the quiz to falsify the data. They also implemented inter node communication later on. Since this application is not secure we are aiming to make our application more secure.
- 11) Samuel S. Chua, Joshuel B. Bondad, Zechariah R. Lumanas, Joven DL. Gracia[10] they have developed online system for conduction of examination where this had ability to find the malpractice. This has made name in all category like reliability, usability, efficiency and functionality. Functionality worked on bugs and errors while testing and excellent remark was obtained. The quiz system was flexible as it was able to import exam from different files like CSV where it saved lot of time for professors to create quiz. As it had good functionality with no bugs and errors it had a good usability. They have added the feature of tablocking in their application. This motivated us to design an application with this feature and make the platform more secure.

IV. CONCLUSION

After comparing some of the generally used quiz platforms like google forms, Kahoot and Microsoft forms we can observe that these platforms cannot be considered as fully efficient as there some drawbacks. These platforms are vulnerable to malpractices like taking screenshots, screen recording of questions while test is being conducted. The application also allows tab switching while the test is being conducted. Also there is no timer in these platforms that displays the time remaining for the test to end. The display of time would be helpful for students in time-management.

V. FUTURE SCOPE

Hence there is a future scope to enhance the features of the existing quiz platforms. So we are designing an "Online quiz platform" with an attempt to overcome the drawbacks present in the current platforms. The application will be in lock mode when the test is being conducted, that is, the students will not be able to switch the tab to other apps. Also the students will not be able to take snapshots and screen recording until the test is over. Also we are adding a timer that will display the students the time remaining for the test to end. The online quiz platform that we are designing can be considered as more efficient than the existing platforms like Google forms, Kahoot and Microsoft forms.

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