Quiz Application with Timer

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Abstract- In this Quiz Application, we have to know how to create a quiz application. Here, you have to select one option in all given options like multiple choice questions. Here we are able to select the option until the timer reaches to 0.We need to select the option with in the given time. After all, the question being shown, there appears a result with your score. And it display two options like retake and abort. This work deals with the development of Android based multiple-choice question examination system, namely: Quizzes. This application is developed for educational purposes, allowing the users to prepare the multiple choice questions for different examinations conducted on provincial and national level. The main goal of the application is to enable users to practice for subjective tests conducted for admissions and recruitment, with the focus on Computer Science field. This quiz application includes three main modules, namely (i) computer science, (ii) verbal, and (iii) analytical. The computer science and verbal modules contain various sub-categories. This quiz includes three functions: (i) Hint, (ii) Skip, and (iii) Pause/life-lines. These functions can be used only once by a user. It shows progress feedback during quiz play, and at the end, the app also shows the result.

Keywords— Quiz; Android; MIT App Inventor; Interviews and test preparation.

I. INTRODUCTION

This Timed Quiz application is developed for educational purposes. This application allows you to test your audience's knowledge with an interactive quiz. It is a collection of different quizzes on different computer science related subjects. There will be a limited time for each question. It shows progress feedback during quiz play, and at the end, the application shows the performance of the user whether he/she is in high level, intermediate level or beginner level. Development of Android-based Quiz application is mainly required by students and learners to prepare themselves for different examinations directly through Smart-Phones and tablets in hands. The main aim of this project is to facilitate students in learning, gaining and improving their knowledge skills. At the meantime, our app provides them fun so that the users can prepare for interviews, entrance tests or any other corresponding purposes in a fresh mood and can't get bored or frustrated due to the dullness of application. We designed the application to facilitate the users to be able to take short quizzes using portable devices such as smart phones and tablets. Byers and Alnarp [1] proposed an Interactive Learning Expert System for the Quizzes.

They in [2], authors proposed multiple-choice based quiz application using QuickBasic and JavaScript. Finally, the accuracy of correct answers is displayed after calculation. This quiz provides users the feature of making their own quiz. The operational version of the afore-mentioned system is available at [3]. The Web-based expert system proposed by [4], is the Student Edition for learning and preparation. It is a multiple choice quiz system. After each and

every question, five choices are given. Users can select a single choice at a time. After giving an answer to all of the questions, users will submit the answers, and then a result or progress report is displayed containing total number and accuracy of correct, incorrect and un-answered questions. Email facility enables the users to send email to: their own id, an instructor, TA, and others.

The Quiz Hub [5] is an online Interactive Learning Quiz Games, focused on facts. This quiz has many sub-categories. It provides many fields to users, students and learners for the learning purpose. The categories are Math facts, U.S. History, Multiply fractions, Vocabulary Quiz, Spelling Quiz Game, Physics, and others. It is not a multiple choice quiz; one has to select the matching pairs in this quiz. Android is rapidly getting famous day by day, and the number of its users are increasing with each passing day, because it is easy to access the necessary Android-based applications on smartphones and tablets. Therefore, we found this idea easy and time efficient to facilitate the users in this way without any difficulty. There are many online quiz applications available on the internet, but most of them are only for entertainment and fun. Moreover, if one is going to appear in any test or interview, then it is time-consuming for them to read the full books or articles related to specific fields for the preparation or revising their knowledge. However, the most attractive feature of our app is that we take learning and fun side by side. Our app provides them the facility to revise their knowledge or to learn something advantageous at one place without wasting their time. The objective of this project is to develop an Androidbased system with following features, namely: (i) Questions bank, (ii) Time frame, (iii) Life lines, (iv) Data Storage, and (v) Multimedia support (pictures, snapshots, tables).

The objective of creating this Quiz app is to help the users to prepare for necessary educational purposes regarding Computer Science and IT field with an easy access to our app directly on their Android phones. Through our app, users can learn and prepare themselves for interviews, tests and exams on Android phones, and can also use this app for increasing their general knowledge about Computer Science, Verbal and Analytical, everywhere and anytime. Material we used is Window 10 Haier laptop, MIT App Inventor 2 software, Windroy, QMobile Noir LT700, and Nokia Smart Phone. Although there are a number of web-based and Android based applications which are, one way or other related to quiz, there are only few that help in learning and contribute to the academic enhancement of the students. With the popularity of the Internet, it is inevitable to have online quiz as classroom assessments. In language learning, online quiz may serve two objectives, that is, for self study or as a formal assessment. The online quiz has its advantages, such as saving the cost of paper printing and reducing the time spent for having assessments in class. However, there are weaknesses. Its primary drawback is the issue of academic dishonesty, especially when students are answering the online quiz. During an online quiz, it is extremely easy for students to get help. They can refer to either reference sources or course mates, in answering the questions. As a student who aims to get a high score for his/her test, he/she may not be aware that the ‘open book’ system is not allowed for answering a quiz which forms a part of the formative assessment of the course. By doing so, the results obtained by the students will not be reliable, and consequently, lecturers will not be able to identify

students' strengths and weaknesses for the topics tested. Hence, this paper attempts to explore students' behaviour in terms of academic honesty in answering the online quiz, students' performance in and satisfaction with the online quiz, and students' opinions about doing the online quiz as compared to doing a manual quiz.

II. RELATEDWORKS

There are various quiz applications exist in the internet with different criteria. Each of the existing applications has their own goodness and problems. In this quiz application which is designed and implemented in JSP based we try to overcome the existing problems with following features:

- Remove source confuse issue
- Better time management
- Better frontend management
- Better backend management
- Try to decrease error issue due to runtime.

Most of the available applications are aiming at having a fun or entertainment. Among the many applications, we review some Web-based and Android based applications that are quite famous and are successful regarding the amount of players and downloads. Computer General Knowledge Quiz section is a repository of Multiple Choice Question that makes you aware about evolving nature of the competitive examination; this quiz is about subjects related to the computer field. It's a general computer quiz. This quiz is useful for the preparation of any computer field test. In this quiz app, questions are given along with four choices, and at the end, the correct choice is also given. After preparation, students can check their level of preparation through the quiz [6]. It is a Computer Science Quiz. It contains multiple choice questions and answers with explanations and examples. Operating System, Database Management System, Software Engineering, Computer Networks, Digital Electronics are the sub-fields present in this quiz. These Computer Science MCQs will help users for various Interviews, competitive exams, entrance exams, and others [7]. TreeKnox Computer Quiz is a quiz system for the help and preparation of computer science and IT students who are going to appear in any interview, tests or exams in computer science and IT field. Questions are given along with multiple choices and at the end of each question; a button named "Answer" is given. On clicking that button the correct answer is highlighted at the mean time [8]. This quiz application is very simple and interactive. In this there are two modes General and Aptitude, after selecting one of them it will be redirected to the Quiz interface which will contain the question with multiple answers (options) and contain three buttons "Submit", "Show Answer" and "Next" [9]. It is also a simple and interactive application [10]. It contains three modes "Easy", "Normal" and "Hard". After selecting one of them it will be redirected to the Quiz interface which contains questions with two options, True "T" and False "F". It also show hints when user wants but if the user will try to use this life line "Hint" more than one time then it will show the answer not hint. Thus, it is useless because user can't learn anything from it anymore. Although there are many apps that

focus on the quiz, there are limited applications with focus on learning or improving knowledge in the curriculum area. Most of the other apps are entertainment-based with little focus on the educational paradigm. There are many limitations with the existing systems mentioned above. To overcome such limitations, we propose user-friendly application, namely "Quizzes," which mainly focuses on gaining the curriculum knowledge as well as entertainment. Therefore, where one is amazed at playing the quiz, he/she is gaining curriculum knowledge with emphasis on not only gaining good grades but also having a better understanding of the subject matter.

Another unique feature of Quizzes that is lacking in other apps is the life lines, which it provides to the user. Users can view the hints for the right answer, can skip a question and also pause the quiz app for thirty seconds. We provided the life lines for the particular questions or the category itself, but user can use these life lines only once. Other features regarding Quizzes and other apps seemed to be quite similar, i.e. answering questions with multiple choices as fast as possible, scoring as high as possible among the group, and so on. There are many systems on the quiz-related content analysis in the context of opinion mining and other disciplines of computer science [11, 12, 13, 14, 15, 16, 17], however, most of such studies are web-based and address the user generated contents. The quiz above are either web-based recommendation systems or intelligent expert systems. Therefore, there is a need to develop an Android-based easy to use application. In contrast to the traditional way of learning a language via the blackboard or whiteboard with lots of printed notes, learning a language on a web is more interesting and challenging. Among the many methods used in Web education, the online quiz is one of the most popular ways to enhance learning [18]. There is no doubt that there are many advantages by using the online quiz to learn a language as it is attractive, motivating and effective [19]. Generally, it is accepted that the online quiz will have some positive effects on students' achievement [20], [21]. However, some research findings have reported on students' 'cheating' phenomenon [22] where students are "sharing answers with one another, doing the quizzes together, and looking up answers while taking the quiz" [23]. Lupton et al. identified in their study that apart from 55% of the United States students who reported to cheating during college, approximately 84% of the Polish students had also declared that they had cheated in their academic pursuit [24-28]. Will the online quiz remain effective if it is used not for learning or instructional purposes, but mainly for assessment or testing purposes? Are the test scores obtained by students reliable in measuring students' achievement or performance?

III. METHODOLOGY

The different algorithms sed in this work are given using Algorithm-1, Algorithm-2 and Algorithm-3. The proposed framework comprises the following modules:

(i) Admin: An admin is a person who is responsible for the upkeep, configuration, and reliable operation of computer systems.

(ii) User Interface : User interface design isn't just about buttons and menus; it's about the interaction between the user and the application or device.

(iii)Content Creation : Content creation is nothing but inserting required data and creating the format outfit for the web application.

(iv)Validation : In a web application security, data validation is the process of ensuring that a web application operates on clean, correct and useful data.

Algorithm.1 selecting the mode

Purpose: The purpose of this pseudo code is to select the mode. User can select any mode i.e. time or category.

Input: Time, Categories, Time Range

Output: time range, main categories

Begin

```
1.  Lbtime← 0 // initialize time range variable
2.  If Mode = Time Then
3.     {Display time range}
    // .....
4.  If (time screen is initialized)  then
5.     {Set Listpicker.element = 1 to 30
6.  Set  continuebutton.enabled = false
7.  Call DB.store value}
8.  IF (listpicker.afterpicking =true) then
9.  {Set  continuebutton.enabled = true
10. Set lb time= listpicker.selection}
11. If listpicker.selection<10  then
12.    {Append 0 ahead of Lbtime
13. Lbtime= lbtime – 1}
14. If (Mode = NonTime)  Then
15.    Display main categories
16. End
```

Algorithm.2 Calculating the result and showing the right answer

Purpose: The purpose of this pseudo code is to show the appropriate answer of the question and to show the final results of the played quiz.
Input: appropriate answer for the given question
Output: result (total score, obtained score, correct answers, accuracy, number of attempts and message shows pass or fail states) , answer key

Begin:
1. Do while (question limit is not finished)
2. Select appropriate answer for the given question
3. score ← score + 5
4. End while
5. Display the result screen
6. Select check your answer key
7. Select the previous button
8. (no_(of_ questions_ in_ answer key) ← (no_(of_ questions_ in_ answer key) − 1
9. If (No_of_ questions_ in_ answer key> 1) then
10. { Enable previous button
11. Else
12. Disable previous button}
13. **Or**
14. Select next button

15. (no_of_ questions_ in_ answerkey) ← (no_of_ questions_ in_ answerkey) + 1
16. If (no_of_questions _limit_finished_answerkey) then
17. { Disable next button
18. Else
19. Enable next button}
20. End if

End

Algorithm.3 selecting the main category

Purpose: The purpose of this pseudo code is to select the sub category of main category.

Input: Main_categories_list={Computer, Verbal, Analytical}, sub_categories_list1={Operating system,

Database Management System, Computer Architecture, Data Structure, Computer Networking}, sub_categories_list2={Synonyms, Antonyms, Spellings, Ordering of words, Selecting words, Verbal Analogies}

Output: Sub categories_list1={Operating system, Database Management System, Computer Architecture, Data Structure, Computer Networking}, sub_categories_list2={Synonyms, Antonyms, Spellings, Ordering of words, Selecting words, Verbal Analogies}, Question screen

Begin
// Initialization

1. Initialize sub categories {Operating system, Database Management System,

Computer Architecture, Data Structure, Computer Networking, Synonyms, Antonyms, Spellings, Ordering of words, Selecting words, Verbal Analogies, Analytical } by assigning the list of questions and option answers.

2. If category = Computer Science Then

3. {Select any computer science's sub category from sub_categories_list1}

4. If (any of the subjects from sub_categories_list1 is selected) Then

5. {Set "category" tag to sub_categories_list1.selected

6. Display Question Screen }

7. Else If (category = Verbal)Then

8. {Select any Verbal's sub category fromsub_categories_list2}

9. If any of the sub_categories_list2 is clicked Then

10. {Set "category" tag to sub_categories_list2.selected

11. Display Question Screen}

12. Else category = Analytical Then

13. Display Question screen

14. End if

End

IV. RESULTS AND DISCUSSION

We executed our Quizzes application using Android based platform. Fig. 1 to 3 shows the output screens of the main application.

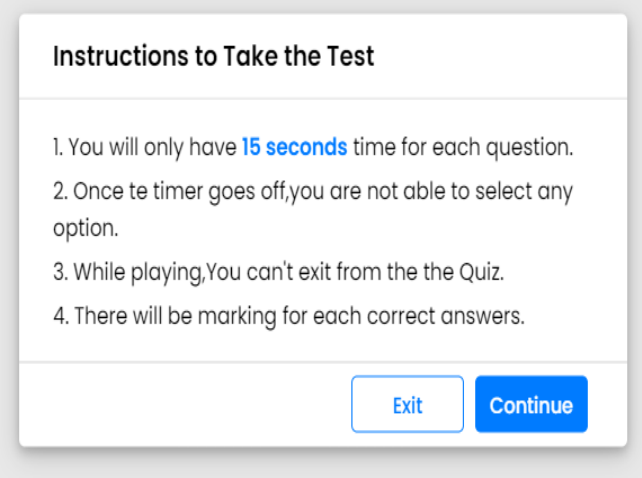

Fig. 1. Instructions

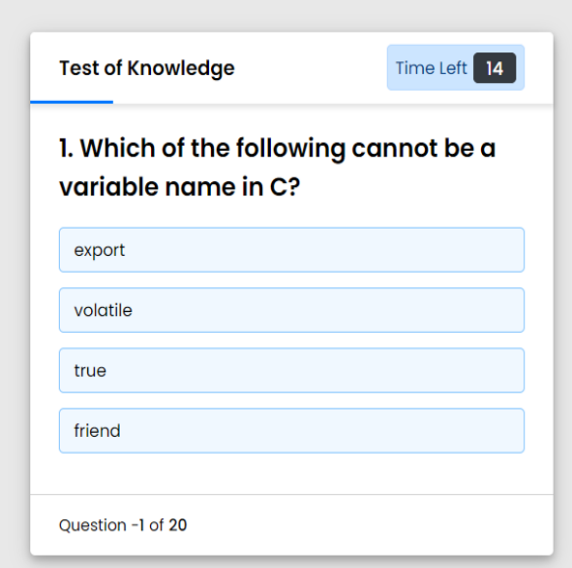

Fig. 2. Questions Page

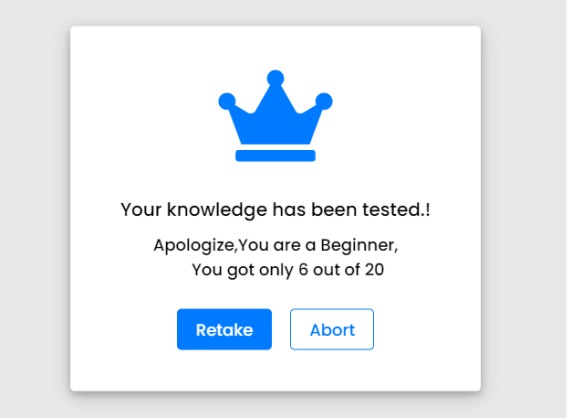

Fig. 3. Results Page

V. FUTURE SCOPE AND CONCLUSION

Android is an operating system which is built basically for Mobile phones. It is based on the Linux Kernel and other open-source software and is developed by Google. Android is very popular nowadays among students and students are now choosing Android for their projects. It's very much important for a beginner to build baby Android apps to learn Android. In this article let's create a simple Quiz App in android using Java**.** A simple Quiz App that contains a set of curated questions and its answers and checks for the correctness of the answer given by the user. It navigates through the questions using dynamic programming. Overall, the benefit of pre-exam quizzing seems to be driven by the decision of the individual student to commit to taking all of the required quizzes. Our analysis indicates that this benefit is not limited to only strong students who are typically successful on exams, but that students of all abilities see a benefit from taking online, pre-exam quizzes. Pre-exam quizzing utilizing an online platform seems to be an effective way to increase student performance on introductory computer science exams, and quiz averages serve to give students feedback as to potential exam performance. The Internet has become the most popular medium for many aspects of life including language learning. Therefore, our young generations of students have shown their preference in having the online quiz rather than the manual quiz. The issue identified in this study is mainly about the problem of academic dishonesty. More than half of the students admitted that they had referred to textbooks and received help from their course mates while doing the online quiz. Hence, this study has come up with a solution to curb the problem of academic dishonesty. Basically, the online quiz needs to be conducted in the computer labs of each faculty under the supervision of lecturers, although this idea was not welcomed by the students. The solution proposed is very challenging as the plan involves all faculties at the university. There should be good coordination between the faculty staff and the faculty representatives from the Academy of Computer science so that the online quiz will be a reliable source to measure the students' actual achievement in the language.

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