IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

Android Based Exam Paper Generator

W.AKASH and Mrs.S.KARTHIGA.
Final Year PG student, Assistant Professor.
Department of Computer Science,
G.Venkatasawamy Naidu College, Kovilpatti, Tamil Nadu, India.

***Abstract*—Exam Paper Generator provides a solution to choose challenging, well framed questions and make it easy for the instructor to generate it within a short period of time. This can be done in a few taps of the hand as it is an Android application, therefore accessible at any time and place. It contains various modules which enables the system to deal with all questions easily. The modules like admin module, user module, and question entry and question management makes it an effortless task. From the entered input the paper is generated and saved as a .pdf file which can be kept for own or distributed as per the user or admin requirements.**

Keywords—random question paper; paper generator; bloomstaxonomy; Co attainment level, android based application, Specification Table.

I. Introduction

In normal scenarios, the examination committee in an instituteworks in a very conventional manner. This way is time consumingand makes all instructors tired of doing these same activities frequently. Our project removes these drawbacks and complexities. In this android application we have implemented a system in which random questions will be picked by mapping it with the conditions provided. Prior to this, administrators can enter the formatted questions in the database (also called as a specification table). Through a randomization algorithm, the questions are chosen depending on the chapter, marks and Bloom's Taxonomy levels. The question paper is generated according to this specific pattern by the admin/instructor to avoidtime consuming jobs, and by students, to get it practiced prior to their exams. This paper is available on hand at all times since it works on the android platform for mobile devices.

II. Literature Survey

Due to the growing field of education, conducting exams and preparing appropriate papers for the same is proving difficult, inefficient, time consuming and a redundant job for the instructor. Therefore, many applications, software and databases have immerged to combat the situation. Our team has looked into suchvarious applications beforehand, they include the following.

This is one of the more popular systems that has immerged which intakes the question bank and a criteria and gives the output of a single question paper. [1] It includes fuzzy logic system for creation of an examination paper.[4] Yet, falls behind in real-time and practical generation and is limited to desktop use. AlkaLeekha, etal [2] also worked on the automated question paper. This systems too intakes the question bank with other important features like error watching and non-repetition but it is available only in desktopformat and can intake only a certain limit of questions at one instance and deals with lower complexities. SurbhiChoudhary

[3] etal also works on the system which provides a big database and the option to select difficulty. But, it falls behind inportability and complexity and lack of offline use. P.H. Potgieter [5] worked to find out the computerized system to evaluate computerized question paper which is one step ahead.Vijay Krishnan Purohit, [6] etal also performed to generate andmanage the system on the similar line.

In this system

We have strived to overcome the drawbacks presented in these systems such as non-portability, static databases, one-tier specifications and much more.

III. Need for Exam Paper Generator

E-PAGE overcomes all the drawbacks stated above in an instant and provides more functionalities such as:

1. Specific questions as per constraints given by the adminwith nothing extra added in.
2. No repetition of questions in the paper.
3. Level wise entry: We have considered three out of six constraints of Bloom's Taxonomy (Remembrance,Understanding and Application) to evaluate students based on their knowledge, understanding and ability to apply themselves.
4. Ability to format the pattern of the question paper as per
   the institute's (admin) needs.[8]
5. Ability to have a paper ready at any time due to its portable nature on mobile devices.

IV. Proposed System

Conventional exam paper generation systems followed by institutes have many drawbacks and weaknesses such as time requirements and repetition of questions in the paper. To overcome them we have designed the proposed system.
Following are points we have considered to implement in our E- PAGE:

1. Automated Question Paper Generation
2. Flexibility in management of questions
3. Security for Administrator
4. Good selection of questions
5. Formatted Question bank entry

There are 3 modules in the application:

A. Administrator Module
B. Instructor Module
C. User Module

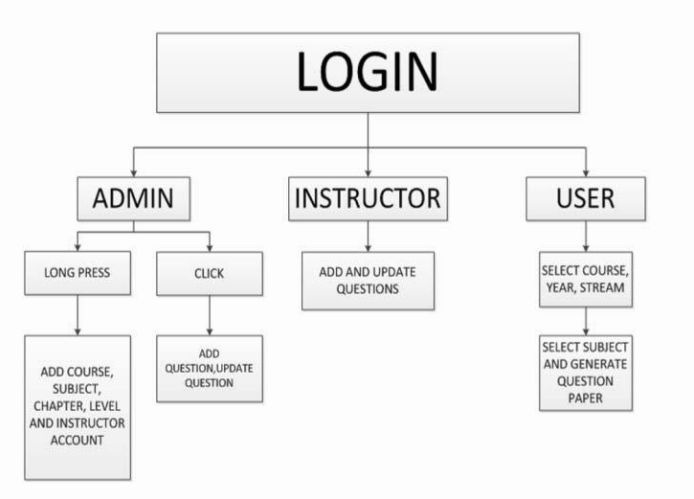

Figure 1. All Modules process

A. Administrator Module

The Admin is the selected senior staff from the institute who are responsible to manage the questions with functions such as addition and updating of various parameters such as courses, subjects, chapters and the questions themselves.
They have their own specific login details.

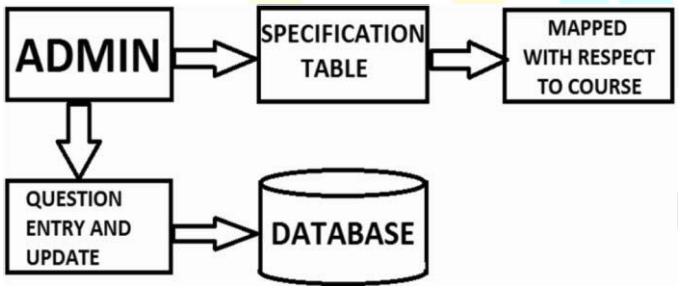

Figure 2 Administrator Module process

Further, many criterion are available to tweak with for the properaddition/updating of questions, these include:

Table 1. Question Bank Format

Course	Semester	Subject	Chapter	Marks	Level

In which,

Course: - It is the department/field to select as per requirements

Semester: - It is the number of semester in the selected course toselect as per requirements.

Subject: - It is the subject of the selected semester to select as perrequirements.

Chapter: - It is the chapter of the selected subject to select as perrequirements.

Marks: - It is the marks of the question to be stated as perrequirements.

Level: - It is the Bloom's Taxonomy Level to select as per
requirements. These include 3 levels,

1. R which stands for Remembrance.
2. U which stands for Understanding
3. A which stands for Application

The actual question text is then added after finding the appropriate fields.

B. Instructor Module

An instructor is the staff from the institute responsible for a particular subject. He/she is responsible for the management of the chapters and questions of said subject. An admin can assign instructors for the subject selected accordingly.

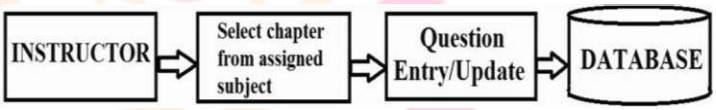

Figure 3. Instructor Module process

A. User Module

The user is mainly the student studying in the institute for theirown personal study, and the professors searching for a good internal test paper to give the students.

Figure 4. User Module process

The user can generate a unique question paper by just fillingthe appropriate information in the form given by the application to search the database and generate a full question paper through the algorithm.

Following is a list of privileges each module gets:

Module	Rights						
	Enter Course	*Enter Sem*	*Enter Subj*	*Enter Chap*	*Enter marks*	*Enter Level*	*Edit Paper Pattern*
Admin	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Instructor	No	No	No	Yes	Yes	Yes	Yes
User	No	No	No	No	No	No	No

Table 2. Rights of each module

V. Proposed Algorithm

The application moves through a set of tasks for each module:

A. Administrator module:

1. An administrator selects the option to login as admin.
2. The admin enters the username and password assigned to him/her to move forward into the application.
3. The course, semester, subject, chapter, marks and level options are shown to select from accordingly.
4. The admin has the choice of selecting the constraints

foreach element present (options are auto-filled acc. to previous choice).

5. A text area at the end of the page is provided for typing in a specific question and then submitting the specified question into the database, using the button given.
6. Another option for the admin is to long press the login button and go into a page where he/she can add in new elements for course, semester, subject, chapter, marks and level.
7. The admin can also assign instructors for specific subjects.

B. Instructor Module:

1. An instructor selects the option to login as instructor.
2. The instructor then enters the username and password assigned to him/her and presses the login button.
3. The instructor gets the option of selecting required chapters and accordingly questions to update or add as new into the database of specified subject.

C. User Module:

1. The user selects the Generate Question Paper option.
2. A form which contains the constraints from which aquestion paper is to be generated, is shown which

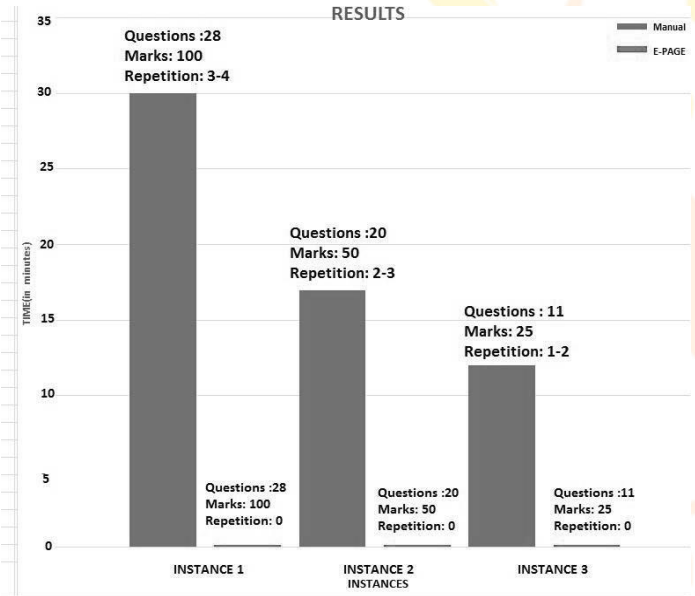

Figure 5. Graph of results

VI. Results

To demonstrate the functionality of E-PAGE, we have taken specific number of questions of a specified subject entered, and have generated a paper consisting of a small part of thosequestions. Using two methods, that are,

1. Manually
2. Using the Android Based E-PAGE We have found that,

Method	Tests			
	Average Time Taken	*Average Repeated Questions*	*Need f or Verification*	*Number of attempts*
Manual	10-15 minutes	2-4	Present	5
Using the application	5-10 seconds	None	Not required	5

Table 3. Table of results

Thus , we can see when done the traditional way , a simple question paper can take almost 60-70 times more time than it takes to generate one using E-PAGE. This is due to the many factors affecting manual generation negatively such as,

a) Human interference
b) Biased Decision Making
c) Redundancy
d) Time consumption involved in selecting questions one by one by sifting through a large question bank/textbook
e) Extra man-power
f) Lack of security while doing so

VII. Future Scope

E-PAGE is designed keeping in mind the many future possibilities that can improve the application to be more portable and dynamic in nature. [7] These include:

1. Along with engineering institutes, this application can be developed for important milestone exams such as 10th and 12th boards. This will prove to be a boon to the students as they are more inclined to solve multiple papers.
2. This application can take its true form when the specification tables and the large amounts of questions,are put in a dedicated cloud database thus unlocking a whole new dimension of portability.
3. With the addition of cloud, E-PAGE is surely to be made available worldwide using the Google Play store.
4. With the large database that it requires, security threats are a major concern. Encryption of the generated papers for safe distribution among staff. A more secure database can also be achieved, making sure no one but the authorized personnel can have the option of inputting into it.
5. With this we will be able to provide a computerized evaluator which will work depending on the key words listed and standard definitions.

VIII. Conclusion

1. Evaluation or examination is an important integral fragment of teaching learning process. Now a days it also became important that how to relate course outcomes (Cos) to this fragment. In this paper we have implemented the Android based Exam paper generator which generates paper based on **Specification table,** which leads to easy calculation of **CO attainment level**.
2. Questions from Question bank are selected with the application of **multiple constraints** with minimum time requirement.
3. This implementation generates the exemplary questionpaper with a very **few taps** on the Android basedApplication
4. **Randomization** and **Non Redundancy** is also taken inconsideration while generating the Exam paper.
5. Hence the **consequential Android Based System** is much more **optimized, Randomized, no redundant, multi-constraint** and **Secure System.**

REFERENCES

[1] "Automated Question Paper Generator System" by Mojitha Mohandas , AishwaryaChavan , RasikaManjarekar , DivyaKarekar, International Journal of Advanced Research in Computer and Communication Engineering Vol. 4, Issue 12

[2] "Automatic Question Paper Generator System" by Prof. Alka Leekha, TejasBarot, PoornimaSalunke, International Journal of Scientific Research Engineering & Technology (IJSRET), Volume 6, Issue 4

[3] "Question Paper Generator System" by Surbhi Choudhary, Abdul Rais, Abdul Waheed , Shrutika Gawandi , Kavita Joshi, International Journal of Computer Science Trends and Technology (IJCST) – Volume 3, Issue 5

[4] "Fuzzy logic based Intelligent Question Paper Generator" by Suraj Kamya, Madhuri Sachdeva, Navdeep Dhaliwal, Institute of Electrical and Electronics Engineers(IEEE)

[5] "An instrument to evaluate computerised question paper generators", by P.H. Potgieter, P.J. Blignaut, , Institute of Electrical and Electronics Engineers(IEEE)

[6] "Design of adaptive question bank development and management system"by Vijay Krishan Purohit, Abhijeet Kumar, Asma Jabeen, Institute of Electrical and Electronics Engineers(IEEE)

[7] "Performing automatic exams" by G. Frosini, B. Lazzerini, F. Marcelloni Computers & Education, vol. 31, pp. 282, 1998.

[8] "Question Model for Intelligent Questiong Systems in Engineering Education" by Stephen A. Zahorian, Vishnu K. Lakdawala Oscar, R. Gonzalez, Scott Starsman, and James F. Leathrum, Jr., 31st ASEE/IEEE Frontiers in Education conferece