



ANDROID AUTOMATIC QUESTION PAPER GENERATOR APP

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Abstract: An Android Automatic Question Paper Generator App is project for college officials to automatically generate papers from an existing Questions Database table by applying constraints to automatically select questions from the database. System has a feature to process different paper sets by default. It takes all the tedious work and makes the manual work quick and effective. The software is very useful for auto nomos institutes for Internal Assessment and Semester Paper. The Application will use the database to compile a questionnaire where the database can contain thousands of queries. Every user will its own database where he can add, update and remove questions from Database. At the end teacher can send the question paper to students through mail 5 min before exam starts.

KEYWORDS: Android, Descriptive questions, Paper PDF, Question Paper

I. INTRODUCTION

In a practical scenario, generating a question paper is very time consuming and it makes all the teachers tired of doing the same tasks over and over again. This project removes these issues and difficulties. Also, in the era of Covid 19 Pandemic most of the colleges are going for online teaching and exams. Do deal with this situation this project, we have used a system in which random questions will be selected from the database to generate the question paper in few minutes.

II. Table 1- LITERATURE REVIEW

SR. NO.	SYSTEM	FEATURES	AUTHORS
1	“Design of Adaptive Question Bank Development and Management System”	An adaptive question bank management system that is intelligently picking questions. The system is using graph for constructing concept map and a database for storing questions.	Vijay KrishanPurohit', Abhijeet Kumar', Asma Jabeen, Saurabh Srivastava, R H Goudar, Shivanagowda,
2	“Representing Examination Question Knowledge into Genetic Algorithm”	This project will investigate multi-constraints genetic algorithm approaches in designing Auto-Generator of Examination Questions (AGEQ)	Noor Hasimah Ibrahim Teo, Nordin Abu Bakar and Moamed RezduanAbd Rashid
3	“Automatic Question Paper Generator System”	Fuzzy logic and randomization in Asp.net for generating the question paper. Four constraints-question paper format, coverage of syllabus, difficulty levels and coverage of cognitive level.	Tejas Barot and Poornima Salunke

The paper on “An Integrated Automated Paperless Academic Module for Education Institutes” has stated the importance and working of switching from Paper based systems to Paperless Systems [1]. The importance of automation is very well documented in the context of Task Engineering [2]. The paper also clearly defines the importance of Information and Communication Technology (ICT) in academics and educational organizations [3].

The paper also describes many Access Control Methods such as MAC (Mandatory Access Control), DAC (Discretionary Access Control), RBAC (Role based Access Control) and DTE (Domain Type Enforcement) [4]. Role

based Access Control is very helpful in automation due to the user hierarchy comprising of different roles [5].

III. EXISTING SYSTEM

3.1 Existing Paper-based Systems

1. The existing system for Question Paper Generation requires human staff to chalk out questions within books or previous paper that appear in the question paper.
2. These teachers or professors select the questions according to the syllabus and pattern as prescribed by the curriculum.
3. The question paper then may be referred to a higher authority who has the final say in these matter.
4. They have to do repetitive task every time when generating question paper (e.g. formatting questions, marks array, college and paper info., Font size and Alignment)

3.2 Limitation of Paper-based Systems

1. Due to human working processes, this system is slow and error-prone.
2. There might be some questions which are repeated in many question papers. So there is no guarantee of pure randomly generated question paper.
3. Non-availability of staff and resources, natural calamities and accidents.
4. Security of the system can be easily compromised if leverage over the person responsible for generating question papers is obtained.

3.3 Analysis

From above analysis we come to know that we need an Automatic Question Paper Generation System with improvements in terms of speed, efficiency, controlled access to the resources, randomization of questions and security

The system should perform tasks in the fastest way without violating the role-based hierarchy and their access right policies, provide a central database for data storage, ensure security and optimize the overall performance of the System.

IV. SYSTEM DESIGN

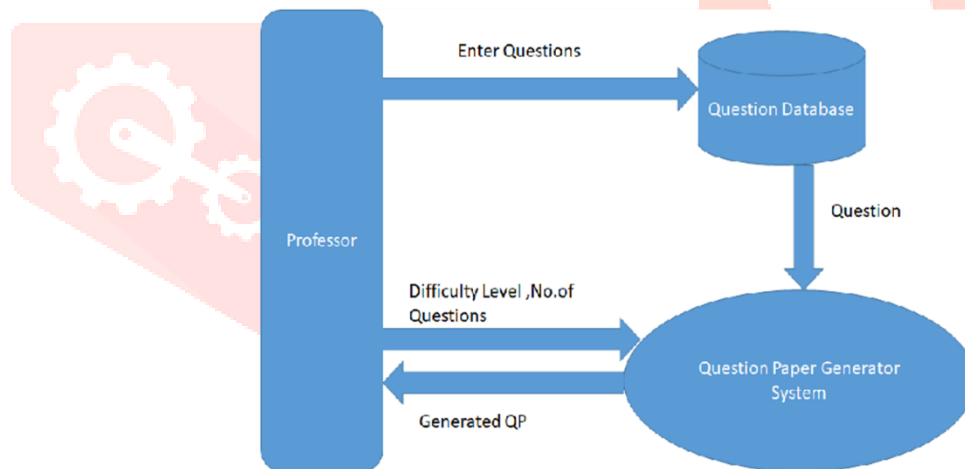


Figure 1. Architecture of Android Question Paper Generator

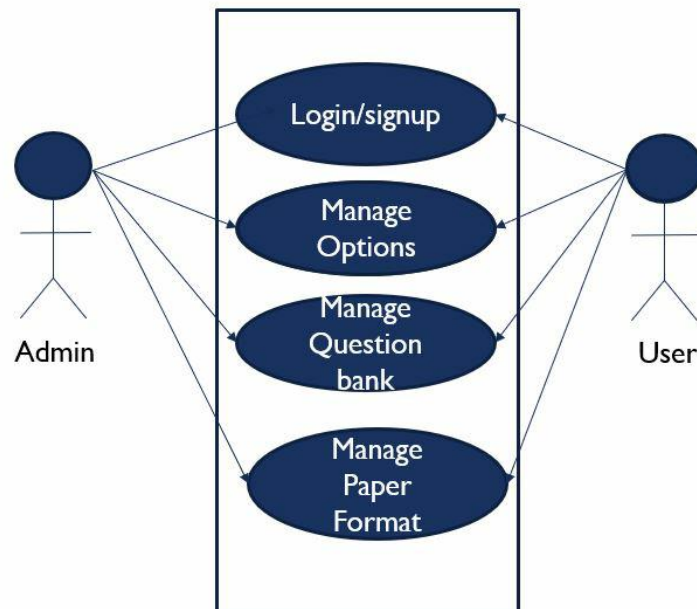


Figure.2. Use Case Diagram of Android Question Paper Generator

1.1 CONCEPT OF THE SYSTEM

1. To generate the question paper, we can divide the proposed system into phases such as:
2. Question Bank Formation.
3. Selection of Parameters.
4. Question Paper Format Creation
5. Final Question Paper Generation.

1.2 WORKING OF THE APPLICATION

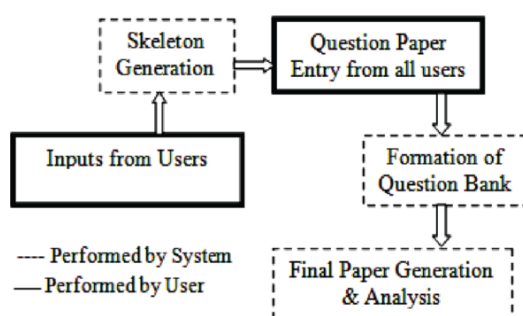
1. Admin makes the skeleton of the question paper which consists of various questions and sub-questions.
2. Faculties are made to enter questions into the database along with their respective difficulty level and priorities.
3. This question bank is then sent for paper generation. Question paper is prepared on the basis of the difficulty level set by the admin. Question chosen will be unbiased and based on the algorithm.
4. This question paper is then analysed by the admin.
5. After analysis, the generated question paper can be mailed to students as exam paper.

V. TECHNOLOGY USED AND REQUIREMENTS

- 5.1. IDE- **Android Studio (Arctic Fox | 2020.3.1)**
- 5.2 Backend- **SQLite, Firebase Database**
- 5.3 Frontend- **XML for Designing UI of Application**
- 5.4 Programming Language- **Java, Kotlin**
- 5.5 **Android Device (version 5 and above)**

VI. IMPLEMENTATION

The Automated Question Paper Generation System is implemented in Kotlin. The fully working system stores courses, questions and patterns of question papers. It then applies the algorithm on the stored question set and prints the question paper in pdf format.



The paper on Android Automatic Question Paper Generation System using Randomization Algorithm" describes a system which uses a shuffling algorithm (existing algorithm) as a randomization technique. The system defines several modules such as user administration, subject selection, difficulty level specification, question entry, question management, paper generation, and paper management.

6.1 Presumptions of the System

The Question Paper Generator Application has been developed considering the following presumptions:

1. All courses provide a well-defined course content which would be taught or left for self-study.
2. Each course has its specific code.
3. All questions belonging to a particular course in some question type/category.
4. The institute can have any number of courses and streams.

6.2 Proposed Algorithm

For N questions available in database

Step 1: Create a List „L“ of N elements

Step 2: Generate a random number 'n' such that $1 \leq n < N$ Step 3: If $n \in L$

Go to Step 2

else Store n in the List L

Step 4: Select a question from database corresponding to n, whose flag==true

Step 5: For the question, set flag=false

6.3 Application

The Automatic Question Paper Generation Application is accessible to teachers on engineering college on personal Smartphone having Android Version 10.

6.4 Features and Benefits of System

The Automated Question Paper Generation System provides various advantages to the user when compared to traditional system.

6.5 Advantages of the system:

1. User can generate test papers randomly and instantly, thus saving a lot of time.
2. The algorithm enables randomization of questions.
3. A new question can be added to the database at any instance and different sets of test papers could be generated without any limitation.

6.6 Features of the system:

1. Security with password authentication.
2. Type less, select more.
3. Easily view database content in tabular format.
4. Admin access to users account details
5. Access Controlled environment to users
6. Offline data

VII. SCREENSHOTS OF THE APPLICATION



Fig 1. Login Activity

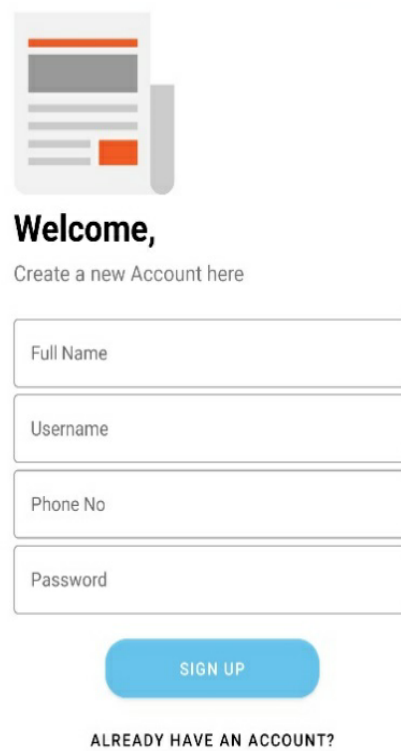


Fig 2. Sign up Activity

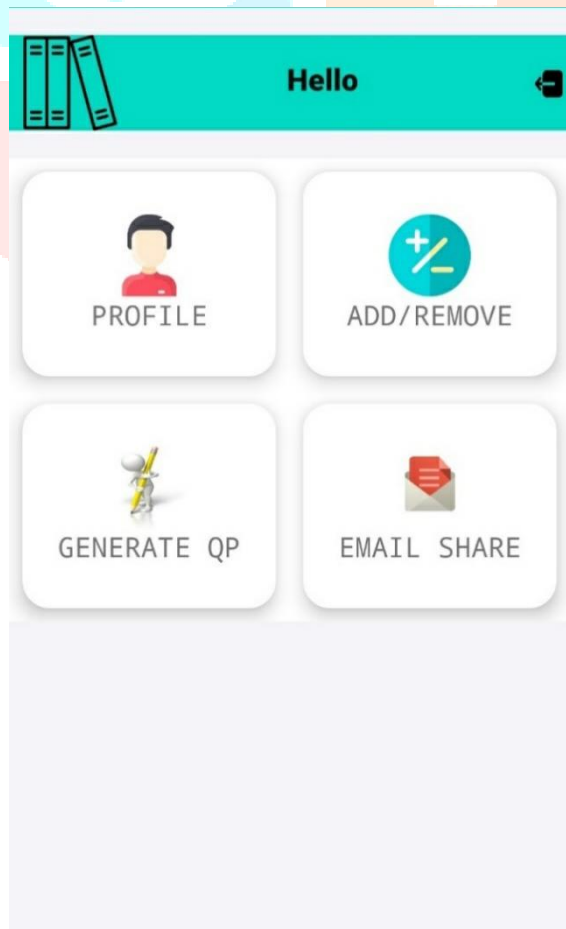


Fig 3 Home Page Activity

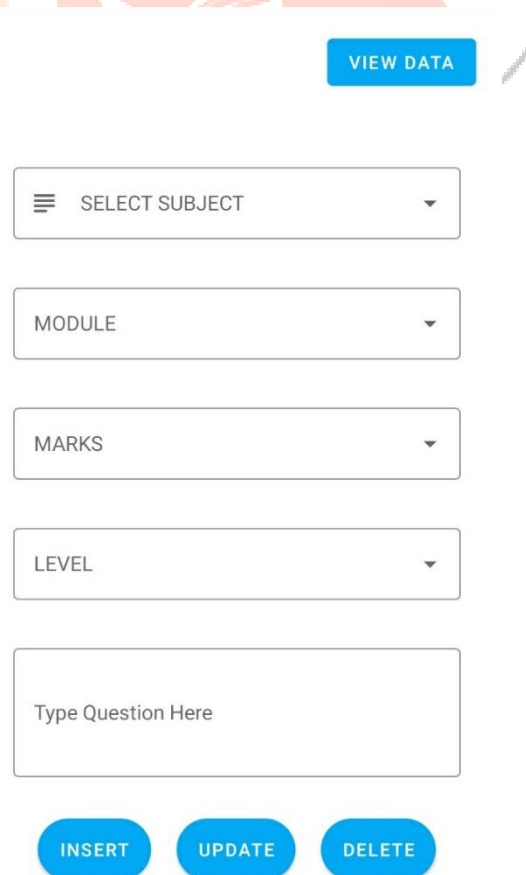


Fig 4. Insert, update, delete questions

Question ID	SUBJECT
1	Artificial Intelligence
2	Cyber Security Laws
3	Enterprise Network Design
6	Mobile Application Development

Fig 5. View Database Activity



Fig 6. Generated pdf files

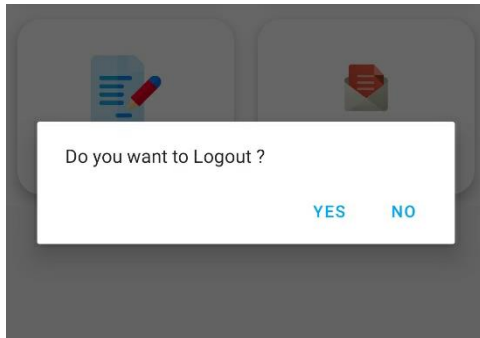


Fig 7. Logout Builder

qid	subject	module	mark	level	question
1	Artificial Intelligence	1	2	Easy	Define AI
2	Cyber Security Laws	3	5	Medium	State ITA 2
3					

Fig 8. Database Table

VIII. CONCLUSIONS

In this paper, an Automated Question Paper Generator is proposed which will be implemented as a real-time application by different Colleges. Here we have reengineered the system that progresses from the traditional method of paper generation using typing or writing down on paper to an automated process using mobile app, also providing authentication system and having limited access permission to user data and resources. Randomization in the task of paper generation resulting in different sets. Our system has deployed an efficient algorithm which is totally randomized and avoids repetition of questions in consequent question papers, making it difficult to predict what question can be in next paper when generated. We distinguish between administrators and subordinates by their tasks. Therefore, the resultant automated system for Question Paper Generation provides improvement in terms of controlled access to the database, random generation of question papers and a secure platform for authenticated teachers only and easy and quick generating paper.

IX. ACKNOWLEDGMENT

Report is on the topic: “**Android App for Automatic Question Paper Generator**” all the relevant and essential details are included in the paper. In this paper, we have given the summarized details of the project which we are building, we have also provided details about how the project is going to be implement and which technologies we are going to use to develop this project, what will be the expected result of the project along with the screenshots of app for user learning Process.

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X. REFERENCES

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