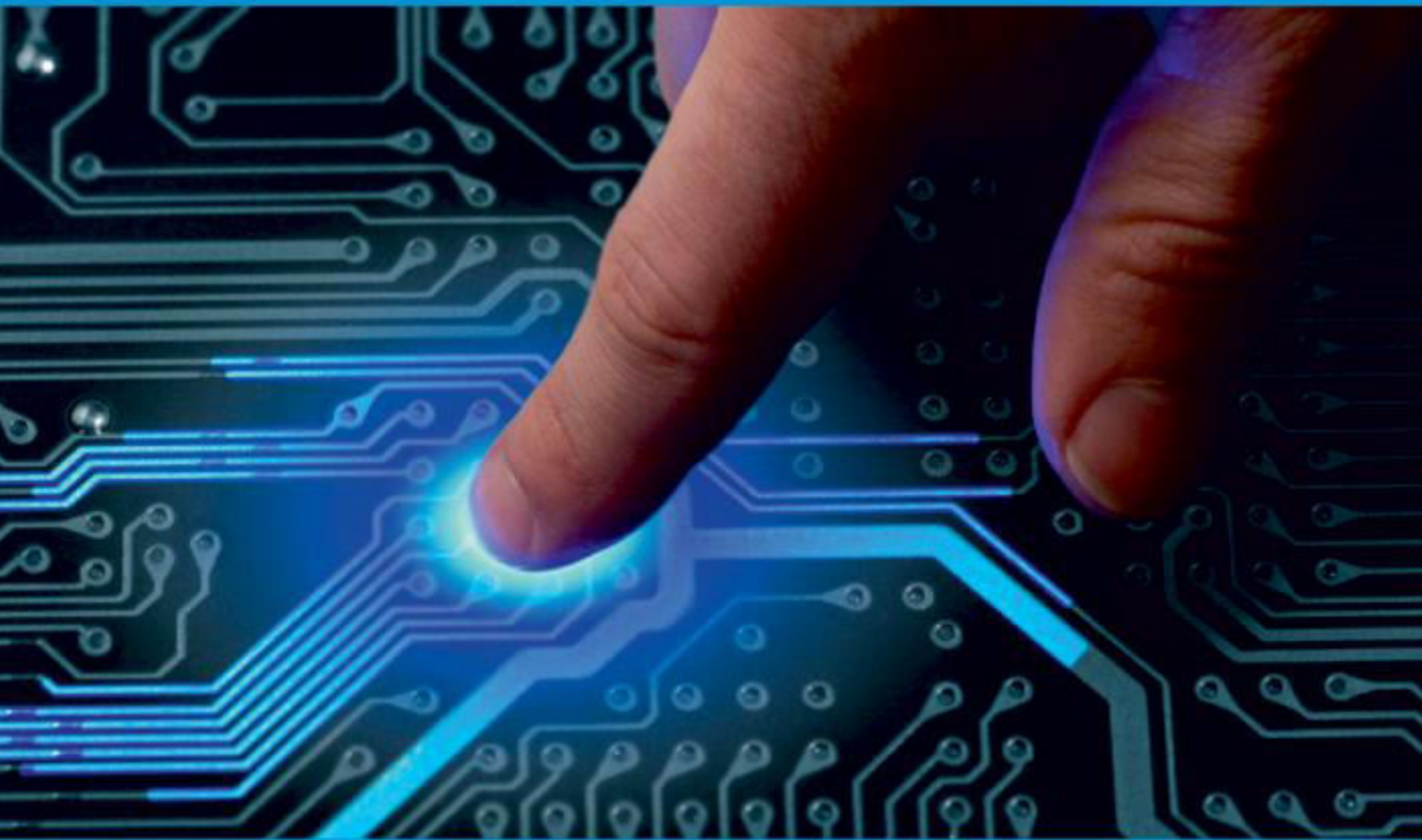




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# Automatic Question Paper Generator Using Shuffling Algorithm

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**ABSTRACT:** This is a problematic era because of the boom in the subject of advanced technology and the demand we are dealing with nowadays. Therefore, examinations play a crucial role in checking out an individual's performance, and preparation of exam question papers has consistently been a matter of interest. And this is why it's far critical to have an intelligent system for the growth of students in addition to checking their learning skills, thereby retaining a check on student performance. Faculties generate various question papers in keeping with the university's assessment requirements. It's very challenging for the teachers to make question papers with multiple questions that meet the course's learning targets. We have proposed an automated process of question paper generation that is fast, streamlined, randomized, and secure. Every action executed task by the system is automated, so that storage space, bias, and security are not a challenge anymore. It automatically creates a variety of sets of questions now and then without worrying about replication and duplication from the initial exam at the same time as the question bank keeps growing. Keywords: Paperless, randomization, automation, assessments, question taxonomy

## I. INTRODUCTION

In today's modern, ambitious world, an exam plays a vital role in checking the educational improvement of students, and the technology of the information era is now substituted through the productive application of the technology. Any product which can correctly reduce time and power consumption is accepted and preferred. So producing software from knowledge is a crucial task to do. In all the academic courses that reject a variety of tests, the instructor intends to create important documents in accordance with the guidelines and assessments of the autonomic university.

It is much more challenging to deal with all the course features for teachers and avoid duplicating questions from subsequent estimates. There is no systematic process, and for this reason, this problem's paper quality is predicted for individual teachers and qualifications. The truth that there is a shortage of experienced teachers makes the situation even worse for specifying courses, semesters, syllabus, and patterns. At times, all these factors might also deteriorate the quality of the question paper.. So, we are presenting an Automatic Question Paper Generator System which could reduce time intake by replacing the traditional approach of question paper generation. There are provisions to enter and edit data suitable to any educational organization with complete freed.

Automatic test paper generation refers to questions selected from the question bank and automatically generates different kinds of papers that meet the requirements of teaching, so it is a typical solution process of the constraint satisfaction problem (CSP). We have implemented a role- based hierarchy which will restricts access to the users. The system also deploys security mechanisms that prohibit duplication of question papers. This enables an educational institute to generate questions ensuring security and non-repetitiveness of question papers and is a boon for organizations with limited staff and resources. Our system aims to provide fast operations, data storage, and high security for all its tasks. The evolution of traditional and existing Question Paper Generationsystems and the need for

an automated system is unraveled. We have proposed our revised system of an Intelligent Automated Question Paper Generation.

## II. PROPOSED MODEL

To overcome the existing system anomalies, this question paper generator system is developed. We present a smart question paper generating system for universities. It is made to permit universities to generate question papers with random but even questions to cover maximum chapters of subject with difficulty level within seconds and mail them to colleges immediately. In our system we allow administrators to enter a fixed of questions and respective answers for option ticking. We additionally permit admin to offer weightage & difficulty level for every questions. After this the questions are stored in database along with their weightage. While generating question the admin simply has to choose the level of difficulty On this feature, the system selects questions randomly in a way that their weightage makes up for 100 marks and according to the difficulty the admin chooses the questions are chosen based on their complexity level. The questions are also added for numerous difficulty levels so that as soon admin selects the type of paper difficulty (easy, medium, difficult) the system automatically generates paper, prepares document file as per selected paper format. • We can also email it to other colleges. After this question paper is converted to pdf file and emailed to colleges on button click

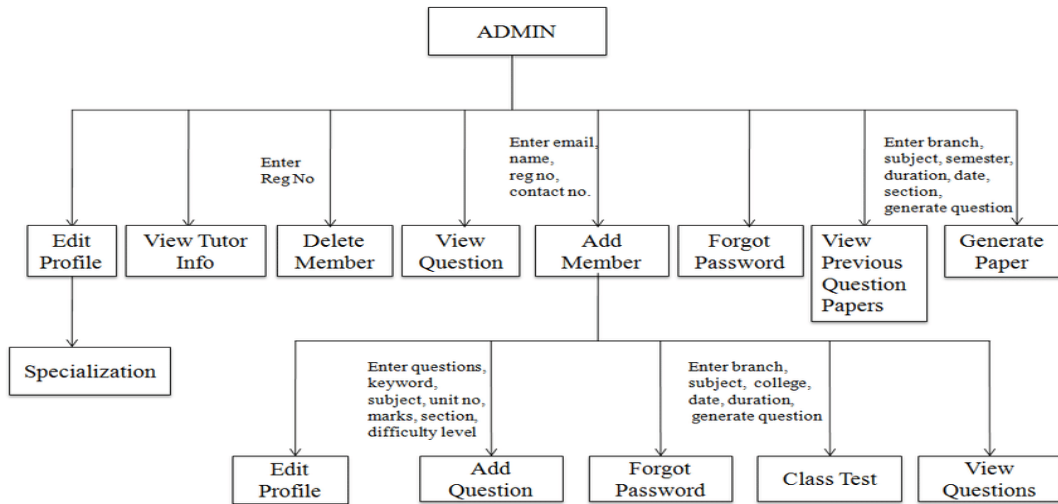
## III. SHUFFLING ALGORITHM

Keyword based shuffling algorithm is an efficient algorithm for randomization to automatically generate question paper. The questions stored in database are fetched to set question paper checking repetition using logical keyword based shuffling algorithm.

This algorithm also fetches particular diagram from database if question has diagram. The algorithm is implemented as follows:

1. Create an array for storing question number (eg arr[length])
2. Create an array for storing keyword (e.g. key[length])
3. Create an array for storing diagram (e.g. Diagram[length])
4. Fetch question number from database which satisfy required criteria & store it in an array (for storing question number)
5. Generate random number
6. If (position==0)  
    Store generated number in arr[0] String s= select keyword from TABLE-NAME Where question number= generated number Store s in keyword array i.e. key[0]  
End if Else  
    Compare the number with previous numbers in array  
    If it is present Go to step 5 End if  
    Else  
    String s= select keyword from TABLE-NAME Where question no=generated number  
    If s is present in key[length] Go to step 5  
    End if Else  
    Store the number in next location array(question number array) Store s in keyword array  
    End else  
    End else
7. Select questions from database which correspond to array position one by one
8. Fetch question number from database which satisfy required criteria & store it in an array (for storing question number)

IV. SYSTEM ARCHITECTURE



V. USE CASE DIAGRAM

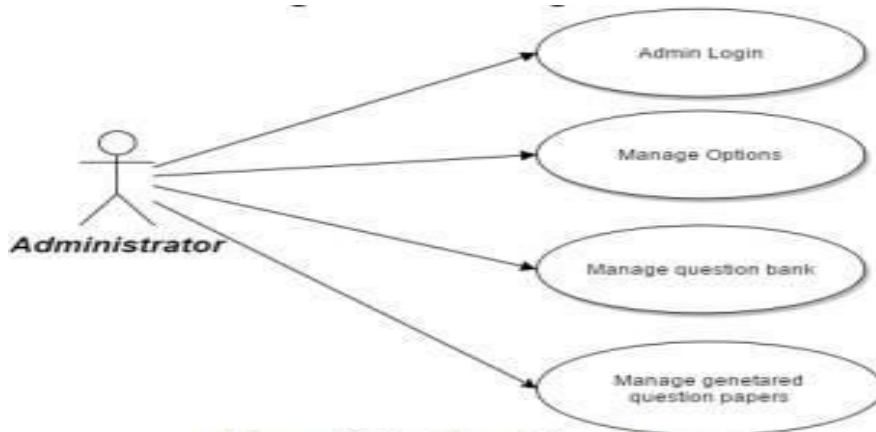


Figure 3. Use Case Diagram

**Admin:**

This Role has full access to the system, which includes

- Adding Teachers
- Adding Course & Subjects
- Generating Question Paper
- Directly Emailing the generated Question Paper



Fig 4: Admin Role Menu



**User:**

Teacher/Faculty is the user role here. The main objective of the user is to add the question to the database of a particular course assigned by the admin

The screenshot shows a web form titled "Add Question". It contains several input fields: "Question Id" with the value "1073", "Your Question" (a text area), "Course" (a dropdown menu with "--Select Course --"), "Subject" (a dropdown menu with "--Select Subject --"), "Section" (a dropdown menu with "--Select Section --"), "Difficulty Of Question" (a dropdown menu with "--Select Difficulty Level--"), and "Marks" (a text input field). A "Submit" button is located at the bottom of the form.

**VI. QUESTION PAPER GENERATION**

After the test subjects and questions are set, the parameters of the papers need to be checked in order to ensure the correct parameter settings. After the confirmation, the user can click the button to generate the papers. If not satisfied, the system will notify the admin regarding it. The following process would combine the preamble information with question paper table contents to produce question paper in word format. Once all the info is passed to the system admin can move ahead and download the Question Paper.

The screenshot shows a web form titled "Get Question Paper". It contains several dropdown menus: "Course >", "Subject >", "Difficulty Level >", "Semester Type >", and "Time For Exam >" (with the value "1/2"). There are also two text input fields: "Name Of Question Paper >" and "Question Paper Code >". A "Download" button is positioned above the "Mail To >" field, which contains the email address "parth11999@gmail.com". An "Email" button is located at the bottom of the form.

## VII. CONCLUSION

In this research paper, an automated design model for Question Paper Generation has been proposed which is implemented as a real time application. The proposed work explains an automated system that shows progression from the traditional method of paper generation to an automated process, by providing controlled access to their resources. This can be achieved by comprehension of users and their particular roles in the institute. We have considered the importance of randomization in the task of paper generation and has deployed an efficient algorithm that is completely randomized and also restricts repetition of questions in question papers. We can differentiate between administrators and subordinates by their respective tasks. Hence, the resultant automated system model for Question Paper Generation provides progression in terms of controlled access to the resources, random generation of question papers and an independent , fully secure platform. Our system is a valuable resource for teachers in automatically generating question papers from the question repository. However, while the system designed by us stands out in all available systems, there's scope for extra enhancements to make it more useful. For example, depending on the kind of evaluation required, the system can be made to select specific question types. For example, if the user wants an assessment for an online quiz, it could smartly include all MCQs. Or, if a user is choosing the term test assessment, more objective type and short answer questions should be preferred.

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