

Automated Question Paper Generator

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Abstract – An examination is an important activity for educational institutions that is used to assess the students' performance and his or her progress. To check a student's potential fully the questions must be of that nature that challenge the minds of the students and determine the quality of student's that will be produced by that institute. Preparing the exam questions is very challenging, tedious and time consuming for the instructors. Thus with the help of this paper we present the solution in form of Automated Question Paper Generator(AQPG) which makes it easier for the examiner to generate question papers which challenge the intellect of the student as well as check their progress. This system includes several modules like user administration, subject selection, question entry, question management, paper generation, and paper management. With the randomization algorithm used by us, the use needs to specify the subject and the question type. From the entered input, the examination paper will be generated automatically. The editing of questions is performed using Word processor and the final paper may be stored as ".docx" or ".PDF" files. The system shows characteristics like simple operation, a great interface, good usability, immense security, and high stability along with reliability.

Keywords: Automated, Question Paper Generation, Randomization.

I. INTRODUCTION

Previously the examination cell of our college or board needed to generate questions manually which was very tedious and time consuming. Our project of Automatic Question Paper Generator will remove all those complexities that the teachers have to go through to make one paper. The shuffling algorithm used by other similar projects is not up to the mark since they have more space as well as time complexity. There are a few systems in today market that offered the similar services like what we are building. These systems are developed by different developer with different features. The randomization techniques employed by such system is also different. Using this software the same action can be accomplished in minutes and even in absence of operators. The finest part of the software is that it takes intelligent decisions to eliminate repeated questions and check seven for the alternatives. Not only this, for formation of a question paper it is also possible to restrict the search to questions which have not been used at all or have been used less than specified number of times. This makes it greatly advantageous as the headache of manually avoiding repetition at the time of feeding is totally eradicated. These automated systems provide cost saving and time-efficient solutions. An ovel prototype of randomization scheme has been described in this paper. The main purpose of this application is to describe automatic question paper generator using shuffling algorithm for randomization. This system is desktop-based application system with several features mainly producing unduplicated sets of exam paper. The result shows the potential pro of sof employment of such algorithm for this type of system. Our

future effort is to employ different types of randomization as well as in addition to question generation we can enhance the same software by making provision to produce questions from simple online text, which can be achieved using natural language processing algorithms.

II. PROPOSEDMODEL

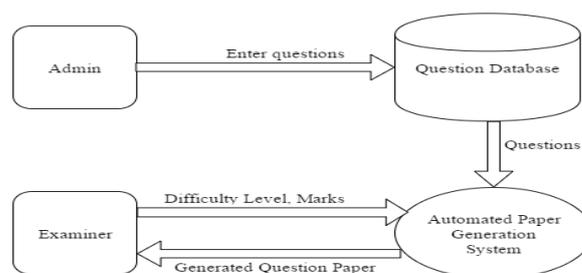


Figure 1. Working of Automated QuestionPaper Generator

The main objective of AQPG is to reduce the work load of teachers in the examination cell .The core purpose of automatic generation systems is composing examination papers. According to the general characteristics of the information management system, the system works in the user mode and the administrator mode. The aforementioned user in this case is the examiner. Our project is will enable college authorities to automatically generate question papers out of existing question bank in the database. The system will have capability to process different unique sets of papers very

automatically. It takes over the entire tedious task and does the manual, laborious work swiftly and efficiently. You can arrange the question bank according to subject, class, section and marks of the questionnaire. The software performs all tasks related to paper setting, starting from preparing question bank to printing paper. Software is very useful for small medium and large scale institutes. The software will empower the college with a powerful tool to generate question papers in a very short span of time thus saving a lot of their precious time. The authorities have the flexibility to generate class tests, unit tests, terminal tests, and final tests.

A. Stepwise Working of Our System

Step 1: The database administrator enters the questions in the AQPG system using the admin privileges.

Step 2: Here the system stores the entered questions in the database of the system.

Step3: The examiner requests the questions to be generated to the system through the user privileges. The system gives the query to the database to generate random questions which is granted.

Step4: The generated questions are given to the system in a proper format.

Step 5: The examiner receives these questions as desired i.e. in word, PDF or any other specified file type.

III. SHUFFLING ALGORITHM

Shuffling algorithms is very suitable and effective ways to implement for randomization of generated question. This algorithms check for duplication and repetition of the randomize question. The behavior of the algorithm is as followed, for a set of N (the total number of question in the database) elements for generating a random permutation of the numbers one–N goes as follows:

- 1) Select the numbers from one to N in the database.
- 2) Pick a random number k between one and the number of unstruck numbers remaining (inclusive)
- 3) if($loc == 0$)
 Store generated number. else
 Compare the generated number with previous number in array.
 If matching value found, go to step2;
 else
 store the no in next location.
- 4) Repeat step2 for N numbers.
- 5) Select questions from DB matching with values from array location one by one.

A. Modules

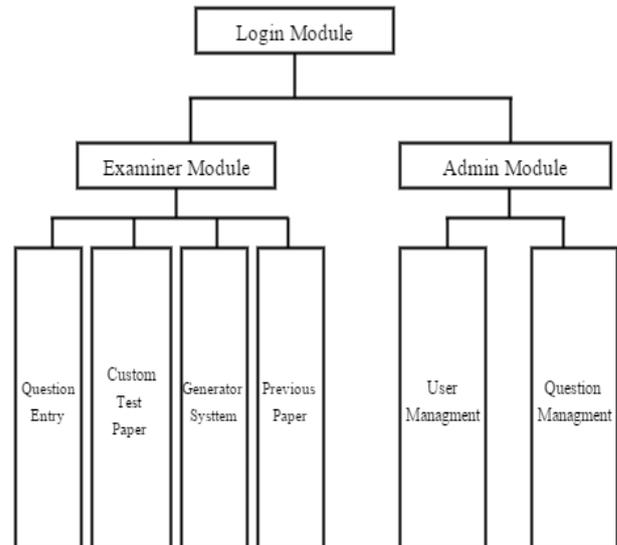


Figure 2. Modules of the system

The Automated Question Paper Generator System is divided into various internal as well as external modules. The internal modules of our system are:

Database connection module: This module will deal with the transactions or input/output that will take place in the system. It will store the questions for the system and the login id information

Admin module: In this module the admin privileges will be invoked and the user logged in as admin will be able to add or remove questions to his will. He can also generate a paper in this mode. The admin will add questions according to his needs i.e. the difficulty level.

User module: The user will login to this module where he will have the privilege to only print or generate a questionnaire. The questionnaire generated can be saved according to the user's needs.

The external modules of our system are:

Login module: This module is used to login as either the admin who will input the questions to the database or as the examiner who will extract the questions as questionnaire. The Login Module describes the interface implemented by authentication technology providers. Login Modules are plugged in under applications to provide a particular type of authentication.

GUI module: This is a basic module which deals with the Graphical User Interface of the system i.e. how the system will interact with the user.

IV. FEATURES AND BENEFIT

After the text edit has been completed, the paper is ready for the template. Duplicate the template file by using the Save As command, and use the naming convention prescribed by your conference for the name of your paper. In this newly created

file, highlight all of the contents and import your prepared text file. You are now ready to style your paper; use the scroll down window on the left of the MS Word Formatting toolbar.

A. Features

1. Simply copy and paste your questions in given editor in any language, as question bank generator software is provided with different language support.
2. Prepare Question Paper in 25 Seconds in Easy Steps which covers all the topics from different subjects.
3. Question Type can be Single option, Multiple Option, Comprehension type question, MCQs, Short questions, OSCE questions and station material.
4. Questions that integrate rich text, scientific diagrams, mathematical/chemical formula and pictures can also be included.
5. Formatting can be done for the generated Questions

B. Benefits

The system will reduce the efforts of an examiner by about more than 80%. It allows the examiner to just click a few buttons to generate an automated question paper. The AQPG brings various advantages to user when compared to the traditional manual system. Listed below are some of the advantages of the system:

1. Examiners that want to generate a question papers randomly can do so by using AQPG instantly, thus saving a lot of time.
2. AQPG can help examiners to generate the question papers based on their needs i.e. on marks and difficulty level learning outcomes elements.
3. Shuffling Algorithm helps randomization process by choosing questions in the database thus preventing duplication and repetition of the question
4. A new question can be added to the bank at any instance. Different set of test papers could be generated without any limitation.

V. CONCLUSION

This paper describes the use of our system, the Automated Question Paper Generator. It also describes a prototypic working of the Shuffling Algorithm used for the randomization of the questions. This system is a computer based software that works on any available platform. Our future efforts will mainly focus on enhancements on the currently available system by including new algorithms for randomization and a new and improved database.

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