

# Automation of Paper Setting Process to Improve Effectiveness of The Examination System of The University

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**Abstract:** Preparing question paper set for any examination is one of the most challenging jobs. Such task is assigned to the paper setter. Paper setter requires more time and efforts to prepare a paper scientifically. To minimize the effort of paper setter and to improve the transparency of question paper, automation takes place. Automation of this process will improve the effectiveness and lessen human errors. It will eliminate manual work of browsing question bank for each test. It will require one-time effort just to generate question bank. Once the question bank is ready, any number of question papers will be generated according to the requirement. This application can be used to generate question papers for several subjects of several classes. It can generate question paper on demand within few seconds. We can save these created question papers. Paper setter can set the criteria for question paper and can create paper accordingly.

**Index Terms - Automation, Authentic user, Random generation, Paper setting, Paper weight-age, Unbiased**

## I. INTRODUCTION

Examination system plays vital role in any education system. The task of paper setting is a challenging job. Once the task of paper setting is assigned by the examination of controller to the specific paper setter, it becomes mandatory to prepare a paper and submit it to the controller within a very short period of time. Paper setters are mostly experts of the subjects who teach in the colleges/universities. They are always engaged with the work of college/university. When the paper setting task is assigned to such people, they might be stuck in some other important work, but it is also necessary to set paper for examination. Due to such situation it may happen that they simply pick and choose some casual questions from the matters taught or from the syllabus prescribed for the course. While generating a question paper set, they have to take care of syllabus, difficulty level of the students and many other issues. This requires much time and concentration. Sometimes it might happen that same questions may repeat, level of questions may differ, pattern setting etc issues are to be considered. To overcome these issues and to improve effectiveness of the examination system, automation will play an important role. As it will take care of above-mentioned points paper can be generated within few seconds. High security settings options are made available such as strong passwords without which the authentic user cannot open the application.

The main aim is to reduce the work load of teachers in the examination cell. According to the general characteristics the application works in the authentic user mode. Here the authentic user is the paper setter himself/herself. This application will enable college authorities to create question papers without any human intervention, out of the accessible question bank present in the database. The application reduces manual work and performs tasks very efficiently and quickly. You can arrange the question bank according to subject, class, section and marks. This solution package of paper setting tries to carry out responsibilities correlated with paper setting, starting from preparing question bank to printing paper. Software is very useful for small, medium and large-scale institutes. This application will provide college authorities with influential software for creating question papers in an extremely small period of time thus saving a lot of their valuable time. The application has the elasticity to generate class tests, unit tests, terminal tests, and final tests.

## II. CHALLENGES OF PAPER SETTER:

1. Sometimes if paper setter is stuck on some other work, they may not get proper time to prepare a paper set which may cause errors in the paper.
2. Designing question paper set according to syllabus and level and fit into the nature of question paper is tedious job.
3. If the particular paper setter has to prepare many numbers of paper sets, he/she might not concentrate properly and may not submit within allocated time span.
4. Designing answer key according to the question paper generated is also a tedious job.
5. If a paper setter is repeating a particular question in multiple paper sets then they need to prepare the answer key for the same question repeatedly.
6. Some time the same question might occur repeatedly in the same question paper set.

7. When in hurry it might happen that the level of difficulty of the paper is not taken into consideration.

### III. PAPER-BASED V/S PAPERLESS SYSTEMS

Table1 1: Difference between Paper-based v/s Paperless Systems

Paper-based manual System	Paperless automated System
It requires human for processing	It does not require human for processing because it is automated process
It is handled by human which causes minimal security	It is maintaining automatically so it provides higher security
It is handled by human so mistakes and repetitions may occur	Totally random and unbiased process so repetitions may not occur
It is Slow process	It is Fast process
Maintaining and handling of database is very tedious	Maintaining and handling of database is very easy

### IV. POINTS TO REMEMBER WHILE SETTING A PAPER:

1. Scope and objective of the examination:  
Here the objective refers to whether examination is for elimination, intermediate or final exam. Scope refers to whether it a board exam or university level exam.
2. Selection of questions:  
The questions should cover every part of the syllabus. Stress should be given to the fundamental concepts and techniques.
3. Analysis of questions:  
Analysis is done on the basis of following factors: Difficulty time, relevance, language, structure, marks.
4. Design of the paper and relative weight age:  
Design of the paper includes whether only essay type questions are going to be asked or proportional amount of fill in the blank type of questions, small questions, and lengthy questions. Accordingly, relative weightage should be carried out.
5. Testing of paper for final approval.

### V. PROPOSED MODEL

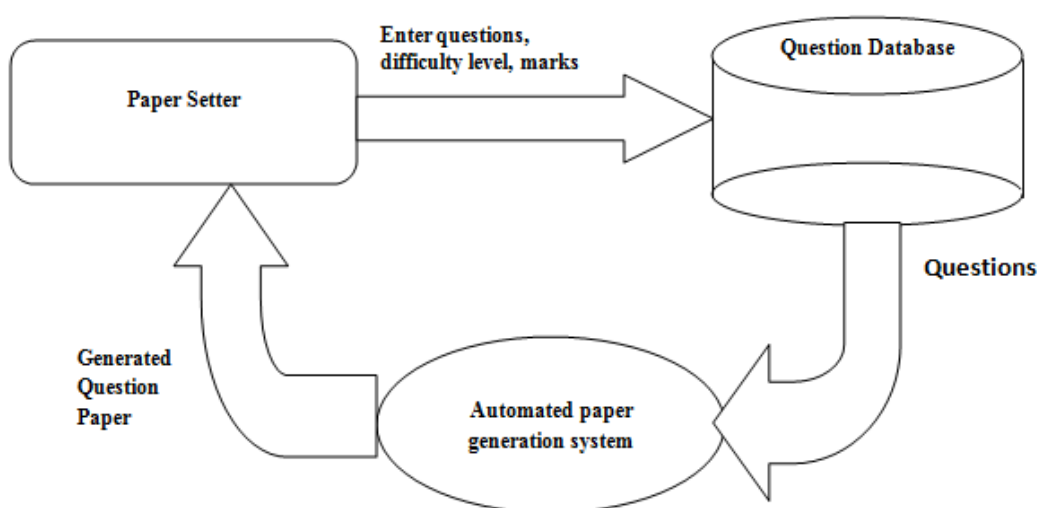


Figure1: Working of the application

## VI. WORKING:

Firstly, the application must be installed on the paper setter's computer authentic user (paper setter) needs to login in first in order to process further. To generate a paper setter initially prepare a question bank strictly based upon syllabus, nature of questions and weight age. Here, the application stores the entered questions in the database of the system. At the same time answer key should be provided for each question according to the standards of answer key. Each question should be categorized according to their weight age. Once the question bank is generated further 'n' number of paper scan be generated according to the requirements. The examiner requests the questions to be generated to the application. The system gives the query to the database to generate random questions which is granted. The generated questions are given to the system in a proper format. The examiner receives these questions as desired. This software package will keep track of questions included in previous papers. Previous papers can be used for reference for generating future question papers. User can specify chapters to be incorporated, number of questions from each unit while preparing the question bank. Paper setter can generate questions randomly or can manually select questions as he/she wants. Resulting document file will include header and footer specifying the course name, time limit etc. This resulting document can be modified if needed by the paper setter. Document must be saved for future reference. This application provides facility to handle equations and images. After the final generation of paper document can be printed.

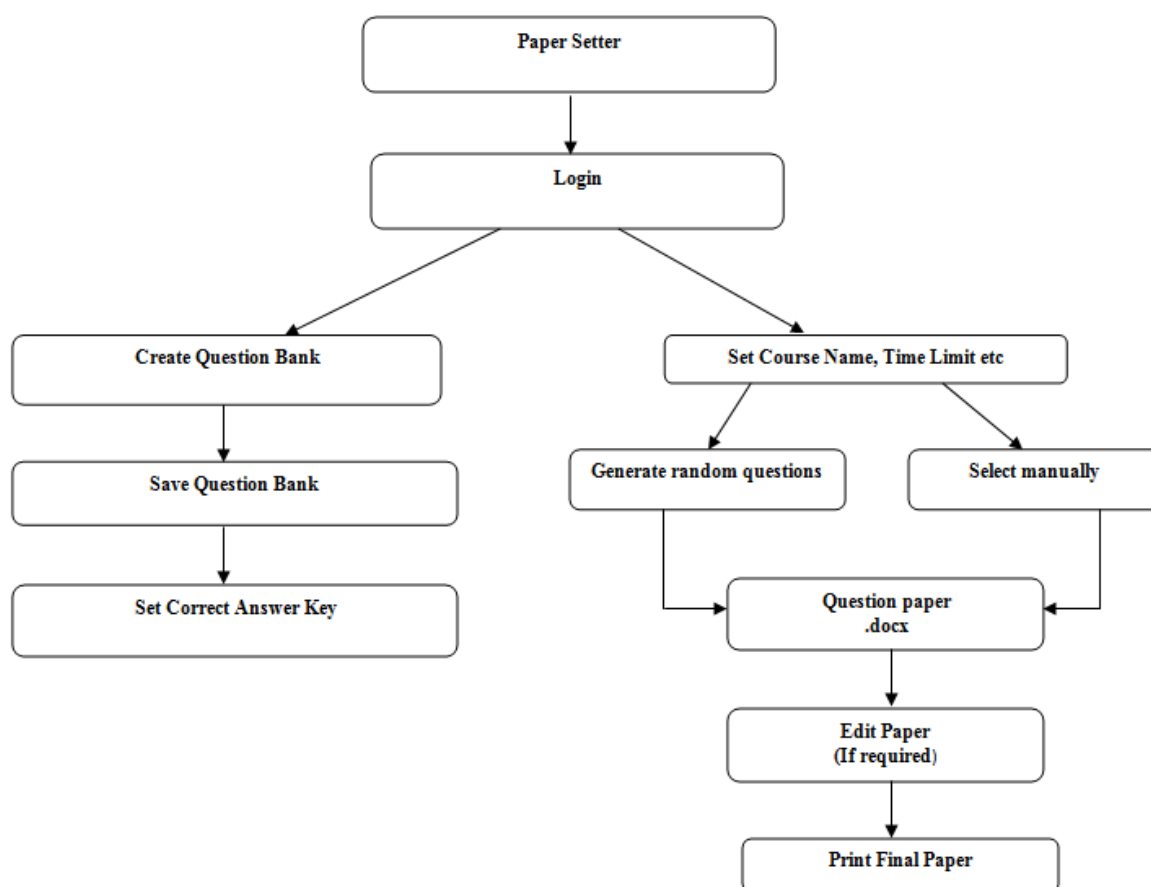


Figure 2: Flow of the system

## VII. FEATURES AND BENEFITS

- ✓ Reduces manual work
- ✓ Generates paper within few seconds on demand
- ✓ Unbiased process
- ✓ Question type can be Single option, Multiple Option, MCQs, Short questions and Long questions.
- ✓ Questions having rich text, algebraic/chemical formula, systematic diagrams, and graphics can also be included.
- ✓ Formatting can be done for the generated Questions.
- ✓ The application will reduce the efforts of an examiner by about more than 80%. For generating question papers examiner needs to press hardly any buttons on the screen.

- ✓ Randomized process for choosing questions in the database thus preventing duplication and repetition of the question
- ✓ A new question can be added to the question bank at any case. Different sets of test papers can be generated without any restriction.
- ✓ Formatting can be done for the generated Questions.

### VIII. CONCLUSION:

While preparing a question paper set using traditional manual entry system, it will take more time and efforts which also may cause human errors. It affects on the reliability as well as quality of the paper. To overcome it, automation of the system will help. It will require only single time efforts to prepare question bank. Since then n number of papers can be generated on a single click. It will minimize the human errors, repetition and related problems. Trouble free question paper generation makes easy to conduct daily/weekly/monthly tests to save valuable time of teachers. This solution package reduces complications the paper setter faces while preparing a question paper.

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