Automatic Ques0tion Paper Generation

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Abstract: *Generation of question papers through a question bank is an important activity in learning management systems and educational institutions. The quality of question paper is based on various design constraints such as whether a question paper assesses different problem solving skills, whether it covers all units from the syllabus of a course and whether it covers various difficulty levels. The basic idea is by using some constraints namely question paper format, coverage of syllabus, coverage of difficulty levels and also it is extensible to support any number of user defined constraints. Also, with the help of Microsoft Excel it becomes easier to upload bulk data. Preparing the exam questions is very challenging, tedious and time consuming for the instructors. Thus we put a solution to this problem as an Automatic Question Paper Generation. From the above constraints the question paper will be generated automatically . The final paper will be stored as Word file. The generated question paper will be then mailed to the respected institutes before the exam in PDF format.*
Keywords: *Data Mining, Knapsack Algorithm, Question Paper Format, Question Paper Generation.*

I.   Introduction

        In today's current ambitious world, an examination plays a crucial role in checking the by productive application of the technology. So producing utility from knowledge is crucial for development of society into an "Information Society". For various examinations conducted in a year in any academic course, teachers need to create variation of question papers as per the college guidelines and assessment requirements. It is very difficult for the teachers to cover all features of the course outcomes and evade duplication of questions in the succeeding exams. There is no systematic procedure and hence the quality of the question paper relies entirely on anindividual teacher's experience and proficiency. At times, this entire element may degrade standard othe question paper. Automatic creation of examination paper yields a stage to create a well-organized examination paper and also the automation would smooth in incorporating many elements determining quality of a question paper. The structure presented in the next module is to automate the activity of examination paper generation. The system would be comprised of a cluster of questions upon which regulation would be implemented to create question paper. The structure is general and is not for any specific branch of learning. Itseeks to furnish a generic procedure to the diverse requirement of distinct fields of study. This generic structure can be

        redesigned to all departments in colleges thus ease the assessment needs. Li-Chun Sung, Yi-Chien Lin and Meng Chang Chen[8]has design an automatic quiz generation system for a given English text, to test learner comprehension of text content and English skills. The quiz generating process generates the quiz from the text, on the bases of the userscomprehensive skills and according to the users learning needs. In the system, the relationship between a vocabulary and its context is represented by a semantic network, which constitutes of players, actions, attributes, and relationships between them. Rohan Bhirangi and SmitaBhoir[6] have posed a system of Question Paper Generation Using Randomization. In this paper, they have proposed an integrated automated system that stores questions related to a particular course and prints a question paper based on its syllabus and curriculum. They implemented a role-based hierarchy which restricts access to any unauthorized users. They have proposed an Automated process of Question Paper Generation which is fast, randomized and secure. Every task performed by this system is automated. After the generation of question paper, the paper is sent to the respected institutes. In 2006 IttezarAldabe[7] made an attempt to create automatic questions called ArikIturri, the procedure was based on Corpora and NLP methods, and the information source for the system was the linguistically inspected real corpora, depicted in XML mark-up language.Ariklturri makes use of NLP tools. They included various types of questions such as MCQs, fill in the blanks The benefit of the system was its capacity to exclude the ill developed questions. SheetalRakangor and Dr. Y. R. Ghodasara[3] has studied and

proposed a system of Automatic Question Generation System. In this paper, they have used NLP for automatic question generation system. This paper presents review of work to generate questions automatically from inputted text. This paper represents the study of automatic objective question generation through NLP or Statistical pattern and review of research work carried out so far in this area. Suraj Kamya, Madhuri Sachdeva, Navdeep Dhaliwa and Sonit Singh proposed a system[11] based on Fuzzy Logic in which all parameters where categorized based upon some logic so that the system can be easily acquainted with them. Drawback of this system was that it could only provide results on the basis of analytical and descriptive format; it could not provide Multiple Choice Questions.

II. Methodology

A) Login Module: The login module is divided in two parts Admin Login and Staff Login.

1) Admin Login: Here the admin is provided with the credentials i.e. Username and password. After entering the correct credentials the admin can access the system and has the full authority of the system.

2)Staff Login: In this the staff enters the two credentials to get access to the system.

B) Staff Management: The admin can add or delete the staff members.

C) Questions Management: The staff can insert, delete or update as many questions as he needs according to the syllabus requirement.

D) Difficulty Level: The staff will decide and assign the difficulty levels to each and every questions i.e. Easy, Medium, Hard.

E) Question Generation: The question paper will be generated with the help of Knapsack Algorithm.

F) PDF Format: The generated question paper will then be converted into pdf format before the exam.

III. Architechture

To resolve the problems of existing work we propose a new approach, which would be helpful to remove the unnecessary use of any software and the cost of the project will be reduced. The proposed work will solve the problems of manually generation of examination papers and also will eliminate the risk of question paper leakage along with other risks. This work will majorly describe the flow of the process.
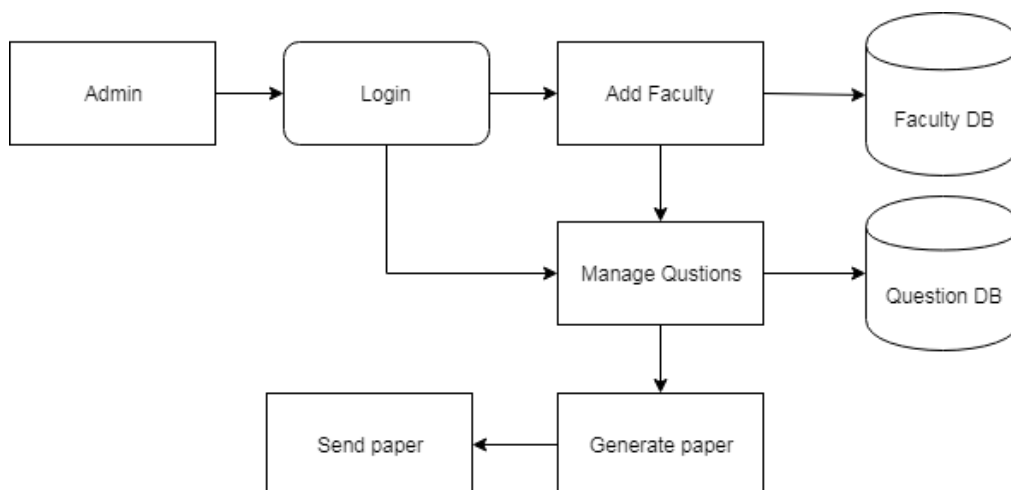
In the previous systems the question paper generated is based on shuffling algorithm in this algorithm there are basic constraints i.e. difficulty level, coverage of syllabus, etc, but then if the selected constraint is difficulty (eg. Easy) then the overall question in the question paper could contain easy questions and no medium or hard questions will be included in the question paper.

IV. Expected Result

Autonomous paper generation has been proposed with the help of Knapsack Algorithm. Our system has deployed an efficient algorithm which is totally randomized and avoids repetition of questions in consequent question papers. The admin will have the entire control over the software. He will be able to manage as well as

alter the staff details along with the questions to be inserted into the database. The staff module is for the adding and updating the questions which is done under the supervision of the admin. The final question paper is generated in pdf format which is supposed to be emailed to the respective examination authority of the institute.Therefore, the resultant automated system for question paper generation provides improvement in terms of controlled access to the resources, random generation of question paper and a secure platform with the facility of unique paper generation within few seconds and avoidance of paper leakage.

V. Conclusion

Assessment plays a vital role in teaching learning process and aligning assessment to the learning outcomes of the course is an important aspect. Hence we conclude that our system aims at generating question papers by fulfilling the basic constraints such as difficulty level, paper format, coverage of the syllabus. And if the difficulty of the paper is set to medium then the algorithm would not only select the medium questions from the database but the overall difficulty of the question paper will be medium. Our system has used a logical algorithm which is absolutely randomized in nature and avoids duplication of questions. Here we use crystal reports so that the question paper is in regular format.The generated question paper will be converted into the pdf format and and then send to the respected institute.

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