Automatic Question Paper Generator

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Abstract **- Examination process is an important activity for educational institutions to assess student performance. Preparing the exam questions manually is very challenging, tedious and time consuming for the instructors. Thus, we have proposed an Automatic Question Paper Generator system to override the problems prevailing in the practicing manual system.**
This system includes several modules like admin module, add user, subject selection, difficulty level specification, question entry, question management, paper generation, and paper management in the admin module. project is totally built at administrative end and thus only the administrator is guaranteed the access. All these data are stored in the database while the teacher can select the difficulty level, number of questions and subject name and then download the automatically generated question paper retrieved from the database in pdf form to circulate to students.
This system randomly selects question in categorized manner from the database and generates the question paper. The system shows characteristics like simple operation, a great interface, good usability, immense security, and high stability along with reliability.

Index Terms **- Automatic, Generator, Paper, Question.**

I.INTRODUCTION

In any educational field main goal is improve the standard of student. As Beforehand question papers are generated manually where teachers require longer time and energy to make examination paper by writer's knowledge and experience therefore, we introduce new advanced technology that is the automatic question paper generation system. This requires less manpower using this technique to process different uncommon sets of papers automatically. The system takes over the whole difficult task and paperwork swiftly and efficiently. Question bank is stored in a database based on branch, difficulty level, course, subject and semester. The automatic paper generator technique performs all work related to paper creation. Example work ranging from choosing subject, difficulty level and number of questions to generate a paper this method is useful for both small and huge institutes.

After these questions are stored in the database along with their difficulty level during the time of question paper generation the teacher just has to select the subject, level of difficulty. And number of questions. On this selection, the system selects questions randomly according to the difficulty level and subject that teacher chooses. We do not have to collect the papers as inbuilt ready to use question bank generated. Duplication of questions is avoided. There are three levels of difficulty is provided is Beginner, Intermediate and Expert. The question paper is generated in less time and more accuracy. we also can view the record of developed question paper. In this system, security is provided through the password. Only admin can manage and generate the question paper while the teacher can download it.

II. ANALYSIS OF EXISTING PAPER BASED SYSTEMS AND ITS LIMITATIONS

The existing test paper generation system needs to manually paint the questions that appear in the test paper, and these teachers or professors choose the test questions according to the course setting and the mode of the course regulations. The questionnaire can then be forwarded to the higher authority that has the final decision on these issues. Like most human workflows, this system is also biased. There may be recurring questions in many test papers because the teacher has a personal preference for them. Therefore, randomly generated questionnaires cannot be guaranteed. Other issues that may affect the system are the lack of personnel and resources, natural disasters and accidents. In addition, if you gain influence on, the person responsible for generating the problem document, system security can easily be compromised.

Other limitations include:

a. Damage prone.
b. Storage space issues.
c. File transfer efficiency is low.
d. High supply cost and maintenance.
e. Problems related to editing
f. Question repetition issues.
g. Tedios and time consuming.
h. Security issues.

Manual Paper Generation System	Automated Paper Generation System
Manual Process	Automation process
Not Secure	Security is high.
Repetitions of Questions can occur	Repetitions cannot occur due to automated processes
Slow and tedious process.	Faster and eased process.

Table 2.1. Manual Paper Generation System vs Automated Paper Generation System

III. LITERATURE SURVEY

1. CQG (Cloze question generation):

This is a system that generated list of cloze questions given in English article. CQG system is split into three main module, Sentence selection, key selection and distractor selection. In the first stage, informative and relevant sentences are selected and within the second stage, keywords (or words/phrases to be questioned on) are identified within the selected sentence key selection won't be noun or adjective it would find on the basis of NER. Distractors (or answer alternatives) for the keyword within the question sentence are chosen within the final stage. First two stage do not seem to be domain specific. third stage is domain specific, because quality of distractor depends on domain so distractor are going to be selected on the idea of the key selected and through web, list of distractors are going to be generated and knowledge based distractor list will generated. And evaluation of the system is completed manually through three phases.

1). Evaluation of the chosen sentence
2). Evaluation of selected keyword and
3). Evaluation of selected distractor.

2. Automatic Question Generation system called GAsk:

This is a system which generates particular questions as a sort of guidance for student learning. A case study was conducted on a large range which involved 24 supervisors and 33 students which resulted on comparing question generated from the software and human generated questions, which proved software generated most efficient. Compared and Citation Classification performance is completed through precision and recall, and Question Quality evaluation is completed through Cohen's Kappa coefficient. For generating question syntactic category Labeller and NER (Named Entity Recognizer) is employed to spot whether its Name, Location or Name of Organization. Once Question sentence is ready, then measures the similarity between the Question sentence and every sentences from the Question knowledge based. Sort the obtained similarity values from other sentences and find three keyword from three different sentences as an distractor values. The results of research was nearly 145 parsed sentences, there have been 109 considered better for the keywords obtained from them.

3. Automatic question paper generator system:

This system used a randomized technique. this method has modules like user administration, subject selection, difficulty level specification, question entry, question management, paper generation, and paper management. The system uses attributes like storing question in database, admin selected complexity level of questions, maintenance of the database.

4. Framework for Automatic examination Generation System:

This system provided the method to generate automatic question paper. Manually generation of question paper is sort of a difficult task. This system provided a straightforward and efficient way for an examination paper generations. A three-tier model is provided during this framework. Generation of Examination Papers is managed by the Syllabus Engine, Pattern Composer, and Question Aggregator. The system relies on the pattern or skeleton of the course. within the system, questions are entered through the Question Aggregator. Weight age, the issue level of question and marks these are the attributes of question paper.

5. Automatic Multiple Choice Question Generation System:

The provided system selects the informative sentence and the keyword to be requested primarily based totally at the semantic labels and named entities that exist withinside the sentence, the distractors are

selected primarily based totally on a similarity degree among sentences within the records set. In this paper, multiple choice questions are generated automatically which asks about words in a given sentence, the phrase can be an adverb, adjective, vocabulary, etc. For producing questions Semantic Role Labeler and NER (Named Entity Recognizer) is used to pick out its Name, Location or Name of Organization. Once Question sentence is prepared, then measures the similarity among the Knowledge based questions and question sentences. Sort the acquired similarity values from different sentences and Get 3 keyword from 3 special sentences as a distractor values. In these studies out of almost a hundred forty five parsed sentences, there had been 109 taken into consideration accurate in step with the key phrases that are extracted from them.

6. Automatic Question Generation Using Software Agents for Technical Institutions:

This is a developed system during which take an input in sort of the document from user which contains of the text upon which the user desires to fetch questions; the output is produced in sort of a document containing questions supported Bloom's taxonomy. The advantage of generating questions based on Bloom's taxonomy enables get to the questions that help to assess brain of the scholars. The proposed framework helps in question generation by deploying agents, the agents will perform various operations like document processing, information classification and question generation. Thus system may also be termed as a multi agent system. In Document processing tree tagger tool and stemming process is finished to eliminate the process. Information classification takes an list of keyword generated by processing and finds the Bloom's category of these words, by searching appropriate action verb within the repository which inserts with the given keyword. question generation module takes the output of data classification as input to come up with questions. the method could be a template based approach, which inserts the chosen keywords within the question template in line with the Bloom's levels.

7.Automatic Multiple Choice Question Generation System:

The gadget furnished selects the informative sentence and the key-word to be requested primarily based totally at the semantic labels and named entities that exist withinside the sentence, the distractors are selected primarily based totally on a similarity degree among sentences withinside the records set. In this paper, automated query generated like multiple choice questions which asks approximately a phrase in a given sentence, the phrase can be an adjective, adverb, vocabulary, etc. For producing query Semantic Role Labeler and NER (Named Entity Recognizer) is used to become aware of whether or not its Name, Location or Name of Organization. Once Question sentence is prepared, then measures the similarity among the Question sentence and every sentences from the Question information primarily based totally. Sort the received similarity values from different sentences and Get 3 key-word from 3 exceptional sentences as an distractor values. In these studies out of almost a hundred forty five parsed sentences, there had been 109 taken into consideration properly in keeping with the key phrases that are extracted from them.

8. Automatic Generation of Multiple-Choice Questions from Domain Ontologies:

The technique supplied on this paper is primarily based totally on area unique ontologies and it's far impartial of lexicons along with WordNet or different linguistic resources. System creates a couple of multiple-choice questions using the Semantic Web preferred technology OWL (Ontology Web Language). The proposed technique is impartial of the area in view that questions are generated in step with unique ontology-primarily based techniques. class based, assets based, terminology-based techniques have been used to generate the a couple of multiple choice query. Property- based techniques can also additionally produce a massive quantity of multiple-choice questions however are very hard to control syntactically. Class and terminology-based techniques alternatively are tons less difficult to handle syntactically however generate fewer questions for ontologies of the equal intensity and population. The generated questionnaires have been evaluated in 3 dimensions: Pedagogical quality, linguistic/ syntactical correctness and quantity of questions produced.

9. Linguistic Considerations in Automatic Question Generation:

The technique includes a straightforward pipeline. First, the supply textual content is split into sentences which are processed via way of means of SENNA software, SENNA presents the tokenizing, pos tagging, syntactic constituency parsing and semantic

role labeling used within the system. For every predicate and its associated semantic arguments, a matcher characteristic is called which will return a listing of arguments that match sentence's predicate-argument structure. and paper specializes in evaluating generated questions in general in phrases in their linguistic quality. Evaluation carried out via means of one file, on chemistry which has 59 questions and 142 questions that are generated through this system
10. Mind the Gap: Learning to Choose Gaps for

Question Generation:
This system approaches, the hassle of producing true questions into parts: first, the choice of sentences question about, and second, the identity of which a part of the ensuing sentences the query must address. To attain the aim of choosing higher gap-fill questions, writer has cut down the process into stages 1) sentence selection, 2) question making, and 3) scoring. For making questions, Tokens are used i.e. Token count, lexical, syntactic, semantic and NER characteristic is used to generate the Gaps fill query. and generated query have been analyzed manually and then rated accordingly.

IV. PROPOSED SYSTEM

A] WORKING
1.STEPS:

- Start the application.
- Admin will add employee and generate its user id and password.
- Admin can add user, branch, difficulty level of question, course, subject, question, semester and manage its reports.
- The data added by admin gets stored in the database.
- The teacher can login to the system by id and password provided by the admin.
- The teacher can then generate the paper by entering subject name, difficulty level of the question and number of question needed and then print the generated paper.

2.MODULES IN AUTOMATIC QUESTION PAPER GENERATOR:

- Login Module
- Admin Module
- Teacher Module

Login Module:
This module is subdivided into Teacher and Admin. In this admin as well as teacher enters their id and password to access the system.

Admin Module:
This module has Two Subparts:- Add Module and Manage Module.
• Add Module:
In this module Admin can add user, branch, difficulty level of questions, course, subject, questions and semester.
• Manage Module:
In the module Admin can view/update existing users, branch, difficulty level of questions, course, subject, questions, semester and can also change their password.

Teacher Module:
In this module Teacher can generate the question paper by entering the subject name, difficulty level of question and number of questions needed and then download the generated paper.
The question paper gets generated by fetching the data that is already stored in the database by the admin.

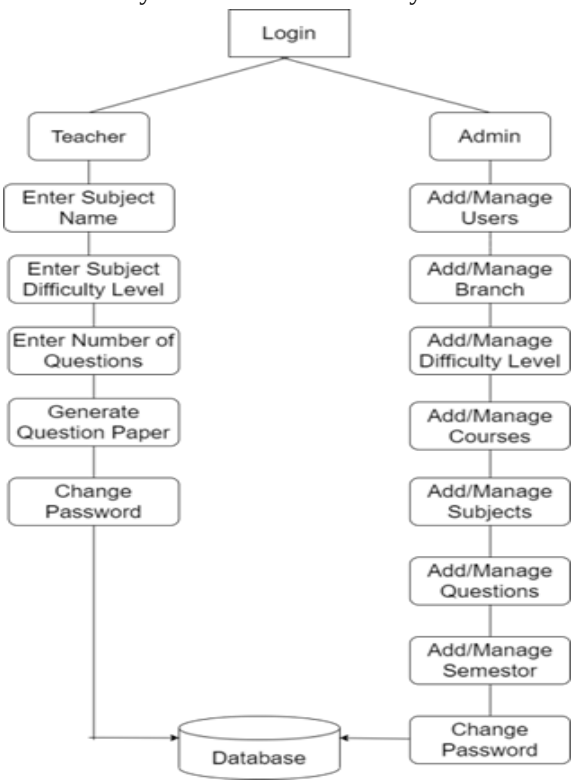

Fig.4.1 Displays working of Automatic Question Paper Generator

V. SCOPE OF THESIS

Examination process is an important activity for educational institutions to assess student performance. Preparing the exam questions manually is very challenging, tedious and time consuming for the instructors. Thus we have proposed an Automatic Question Paper Generator system to override the problems prevailing in the practicing manual system.

This system includes several modules like admin module, add user, subject selection, difficulty level specification, question entry, question management, paper generation, and paper management in the admin module . project is totally built at administrative end and thus only the administrator is guaranteed the access. All these data are stored in the database while the teacher can select the difficulty level, number of questions and subject name and then download the automatically generated question paper retrieved from the database in pdf form to circulate to students.

This system randomly selects question in categorized manner from the database and generates the question paper. The system shows characteristics like simple operation, a great interface, good usability, immense security, and high stability along with reliability. It will also reduce the cost of collection, generation and management of manual paper generation process.

Our project aims at Business process automation, i.e. we have tried to computerize various processes of Automatic Question Paper Generator.

- In computer system the person has to fill the various forms & number of copies of the forms can be easily generated at a time.
- In computer system, it is not necessary to create the manifest but we can directly print it, which saves our time.
- To assist the staff in capturing the effort spent on their respective working areas.
- To utilize resources in an efficient manner by increasing their productivity through automation.
- The system generates types of information that can be used for various purposes.
- It satisfy the user requirement
- Be easy to understand by the user and operator
- Be easy to operate
- Have a good user interface
- Be expandable

VI. CONCLUSION

In this paper, we propose automatic generation of questions from queries as a shared task.

The question selection difficulty has been formulated as a multi-constraint optimization issue. Which aims to produce question papers that meet several constraints stated by the paper setter.

Automatic Question Paper Generator will generate a well formatted question paper in a matter of a few seconds saving a lot of time when compared to traditional systems.

With the use of this system for question paper generation there are no chances of exam paper getting leaked as paper is generated just before the test.

It will save a lot of time for teachers and thus will improve efficiency.

The implemented work narrates an automated system that heads away from the traditional process of paper generation to an automated process, by giving controlled entry to the resources that is attained by involving users and their roles in the colleges.

This work is a system which establishes question exam paper, according to what the admin chooses to start with from managing the department, semester and the subject. After that, he chooses the kind of questions and the degree of difficulty without questions duplication. Also, he can edit some questions, and then generate the paper. This web-based system aims to save time and efforts of instructors, as writing the questions take long time and efforts.

REFERENCES

[1] Automatic Cloze-Questions Generation by Annamaneni Narendra, Manish Agarwal and Rakshit shah LTRC, IIIT-Hyderabad, India.

[2] G-Asks: An Intelligent Automatic Question Generation System for Academic Writing Support by Ming Liu and Rafael A. Calvo.

[3] Kapil Naik, Shreyas Sule, Shruti Jadhav and Surya Pandey, “Automatic Question paper Generation System using randomization algorithm” IJETR, Vol.2, Issue 12, pp.1-3, Dec.

[4] Ashok Immanuel and Tulasi. B, “Framework for Automatic Examination Paper Generation System,” International Journal of Computer Science Trends and Technology, vol. 6, issue 1, Jan - March 2015.

[5] Automatic Multiple Choice Question Generation System for Semantic Attributes Using String Similarity Measures by Ibrahim Eldesoky Fattoh in journal Computer Engineering and Intelligent Systems www.iiste.org ISSN 2222-1719 (Paper) ISSN 2222-2863 (Online) Vol.5, No.8, 2014.

[6] Automatic Question Generation Using Software Agents for Technical Institutions by Shivank Pandey1, K.C. Rajeswari International Journal of Advanced Computer Research (ISSN (print): 2249-7277 ISSN (online): 2277-7970) Volume-3 Number-4 Issue-13 December-2013.

[7] Semantic Based Automatic Question Generation using Artificial Immune System by Ibrahim Eldesoky Fattoh in Computer Engineering and Intelligent Systems www.iiste.org ISSN 2222-1719 (Paper) ISSN 2222- 2863 (Online) Vol.5, No.8, 2014.

[8] AUTOMATIC GENERATION OF MULTIPLE-CHOICE QUESTIONS FROM DOMAIN ONTOLOGIES by Andreas Papasalouros, Konstantinos Kanaris, Konstantinos Kotis.

[9] Linguistic Considerations in Automatic Question Generation by Karen Mazidi and Rodney D Nielsen.

[10] Mind the Gap: Learning to Choose Gaps for Question Generation by Lee Becker, sumit basu and lucy vanderwende.