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Abstract- The 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. 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 Automatic Question Paper Generator System (QGS). The design process performs and composes the examination paper using an efficient algorithm with a high rate of success. From the entered input files, the examination paper will be generated automatically. The final paper may be stored as 'PDF' files. The system shows characteristics like simple operation, a great interface, good usability, immense security, and high stability along with reliability.

## 1. INTRODUCTION

In the realm of educational institutions, the demand for a proficient and adaptable automated system for question paper generation and data management has never been more pressing. Our project introduces a comprehensive solution to this challenge, offering a streamlined process for creating and managing question papers while catering to various educational needs. By harnessing this system, educators can store and organize a vast repository of questions aligned with specific courses, providing a valuable resource for designing assessments that closely adhere to syllabi and curricula. The project goes beyond mere question storage; it implements a role-based hierarchy to ensure controlled access for different users, safeguarding sensitive data and ensuring that only authorized personnel can manipulate or retrieve questions. In a landscape where academic integrity is paramount, the system's robust security mechanisms prevent the illicit duplication of question papers, preserving the integrity of examinations. One of the project's most compelling features is its adaptability.

Educational organizations have the freedom to input and modify crucial data, including course details, semesters, syllabi, and question patterns.

This flexibility makes the system an indispensable tool, particularly for institutions with limited staffing and resources, as it streamlines operations, optimizes data storage, and upholds the highest standards of security in all its functionalities. In a rapidly evolving educational landscape, where efficiency, data integrity, and resource optimization are paramount, our project seeks to bridge the gap between traditional question paper generation methods and modern, technology-driven solutions. It offers educators a powerful tool to enhance the quality and security of assessments, ultimately improving the learning experience for students and simplifying the workload for instructors and administrators.

### 2. PROBLEM OF THE STATEMENT:

The generation of question papers through a question bank is a crucial task in learning management systems and educational institutions. However, ensuring the quality of a question paper involves multiple design constraints. These include assessing different problem-solving skills, covering all units from the course syllabus, and incorporating questions of varying difficulty levels.Manually preparing exam question papers is a challenging, tedious, and time-consuming process for instructors. It requires extensive effort to balance content distribution, difficulty levels, and syllabus coverage while maintaining fairness and quality in assessment. To address these challenges, we propose an Automatic Question Paper Generator System (OGS). This system utilizes an efficient algorithm to design and generate examination papers automatically with a high success rate. By processing input files, the system creates a wellstructured question paper that meets predefined constraints. The generated question paper can be stored in a PDF format, ensuring easy accessibility and distribution. Additionally, the system is designed with simplicity, a user-friendly interface,

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enhanced usability, robust security, high stability, and reliability. This automated approach significantly reduces the manual workload for instructors while improving the efficiency and fairness of the question paper generation process.

## **3.MOTIVATION OF THE PROJECT:**

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 .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 user can give the keyword.

### 4. METHODOLOGY:

## EXISTING SYSTEM

The existing system groundbreaking study, the authors introduce an algorithm named CLOZER that harnesses the power of a masked language AI model and the Gini coefficient to revolutionize English language learning assessment. CLOZER generates open cloze questions (OCQs) automatically, alleviating teachers from the time-consuming task of creating OCQs and providing learners with a selfstudy platform. The algorithm's efficacy is demonstrated through quantitative experiments, showcasing its statistically significant effectiveness in improving learners' English skills. Notably, CLOZER-generated OCQs even outperform those crafted by the average non-native English teacher. The study extends to a real-world application in a high school, uncovering both benefits and challenges, leading to proposed design enhancements. This work marks a significant leap in language education by merging cutting-edge technology with pedagogical practice.

Disadvantages in accessibility, Limited flexibility, Lengthy process, Time consuming.

Advantages- Wide portion coverage and efficient question paper generation, No chance of paper leaks, The system provides an unbiased result, Thus the system excludes human efforts and saves time and resources.

## 5. PROPOSED SYSTEM :

The proposed system represents a cutting-edge solution that harnesses the power of natural language processing (NLP) for question generation and data management in educational institutions. It boasts an

expansive database, enriched by deep learning algorithms, capable of storing and curating a diverse range of questions meticulously crafted for specific courses, thereby facilitating the effortless generation of examination papers intricately linked with syllabi and curricula. This sophisticated system incorporates a role-based hierarchy to govern access, bolstered by NLP-driven security mechanisms, ensuring that only authorized users can engage with the system. Furthermore, it leverages deep learning models to create questions that exhibit a nuanced understanding of the subject matter, enhancing the quality and diversity of assessments.

Its adaptability empowers educational institutions to define and modify crucial data, such as course details, semesters, syllabi, and question patterns, making it a transformative asset, particularly for resource-constrained organizations. By seamlessly integrating deep learning and NLP technologies, the proposed system represents a paradigm shift in educational technology, promising unparalleled efficiency, data security, and adaptability, thereby elevating the standard of assessments while simplifying administrative tasks for educators.

## 6. ARCHITECTURE DIAGRAM:



### **MODULES NAME:**

**1.TEXT INPUT:** The Text File Input Module plays a pivotal role in your Automatic Question Paper Generator System by facilitating the seamless integration of external textual content into the question generation process. Its primary objective is

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to enable users, typically educators or administrators, to upload text files containing various forms of textual information, such as paragraphs, passages, or any relevant educational content. These uploaded text files serve as the fundamental building blocks for the system's question generation capabilities.

## **3.TEXT PARSING USING NLP TECHNIQUES:**

Once a text file is uploaded, the system parses the content to identify relevant paragraphs, sections, or units. It may use NLP techniques for text analysis to understand the structure and content of the file better.

**3.QUESTION PAPER GENERATION**: Following the text parsing stage, the system employs advanced deep learning and natural language processing (NLP) algorithms to autonomously generate questions from the extracted content. These algorithms excel in recognizing essential elements such as key concepts, factual details, and relevant topics embedded within the text. Leveraging this understanding, the system formulates questions tailored to the content, ensuring their contextuality and alignment with educational objectives. In essence, this phase harnesses the power of deep learning and NLP to transform raw text into a valuable resource for educational assessments, enriching the learning experience within the educational institution.

**OUTPUT AS PDF:** The final question papers generated by the system can be saved and exported in PDF format, making them easily accessible and distributable for exams.

### 7. PROPOSED SYSTEM ALGORITHM:

#### NATURAL LANGUAGE PROCESSING (NLP):

Natural language processing (NLP) is a subfield of Artificial Intelligence (AI). This is a widely used technology for personal assistants that are used in various business fields/areas. This technology works on the speech provided by the user breaks it down for proper understanding and processes it accordingly. This is a very recent and effective approach due to which it has a really high demand in today's market. Natural Language Processing is an upcoming field where already many transitions such as compatibility with smart devices, and interactive talks with a human have been made Knowledge representation, possible. logical reasoning, and constraint satisfaction were the emphasis of AI applications in NLP. Here first it was applied to semantics and later to grammar. In the last decade, a significant change in NLP research has resulted in the widespread use of statistical approaches such as machine learning and data

mining on a massive scale. The need for automation is never-ending courtesy of the amount of work required to be done these days. NLP is a very favorable, but aspect when it comes to automated applications. The applications of NLP have led it to be one of the most sought-after methods of implementing machine learning. Natural Language Processing (NLP) is a field that combines computer science, linguistics, and machine learning to study how computers and humans communicate in natural language. The goal of NLP is for computers to be able to interpret and generate human language. This not only improves the efficiency of work done by humans but also helps in interacting with the machine. NLP bridges the gap of interaction between humans and electronic devices.

Natural Language Processing (NLP) is a subfield of artificial intelligence that deals with the interaction between computers and humans in natural language. It involves the use of computational techniques to process and analyze natural language data, such as text and speech, with the goal of understanding the meaning behind the language.

NLP is used in a wide range of applications, including machine translation, sentiment analysis, speech recognition, chatbots, and text classification.

#### Working of Natural Language Processing:

Working in natural language processing (NLP) typically involves using computational techniques to analyze and understand human language. This can include tasks such as language understanding, language generation, and language interaction.

The field is divided into three different parts: Speech Recognition—The translation of spoken language into text.

Natural Language Understanding (NLU) — The computer's ability to understand what we say.

Natural Language Generation (NLG) — The generation of natural language by a computer.

NLU and NLG are the key aspects depicting the working of NLP devices. These 2 aspects are very different from each other and are achieved using different methods.

Individuals working in NLP may have a background in computer science, linguistics, or a related field. They may also have experience with programming languages such as Python, and C++ and be familiar with various NLP libraries and frameworks such as NLTK, spaCy, and OpenNLP.

Role of NLP techniques in Question Paper Generating system:

The role of NLP (Natural Language

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Processing) algorithms in question paper generation is crucial for automating the process of creating questions from text. NLP algorithms enable the system to understand, analyze, and generate natural language content, which is essential for generating questions that are coherent, contextually relevant, and grammatically correct. Below are the key roles that NLP algorithms play in question paper generation:

**Text Summarization**: NLP algorithms are used to summarize the given text into a concise and coherent form. This summarization helps in distilling the most important information from the text, making it easier to generate questions that capture the essence of the content.

**Keyword Extraction**: NLP techniques are employed to extract relevant keywords and phrases from the text. These keywords serve as potential topics or subjects for generating questions. Keyword extraction helps in identifying the key concepts that should be covered in the questions.

**Question Generation:** NLP algorithms, particularly question generation models, are used to create questions based on the summarized text and extracted keywords. These models understand the structure of questions and generate questions that are contextually relevant. They consider the type of question (e.g., multiple-choice, open-ended) and generate questions accordingly.

**Contextual Understanding**: NLP algorithms ensure that generated questions are contextually appropriate. They take into account the context provided by the summarized text and aim to generate questions that are meaningful and coherent within that context.

**Language Fluency and Grammar**: NLP algorithms are responsible for ensuring that the generated questions are grammatically correct and fluently written. They handle language fluency, punctuation, and grammar rules to produce high-quality questions.

Question Paper Formatting: NLP can also be used to format the question paper, including arranging questions, adding instructions, and creating a visually appealing layout for the final document.

**Language Variability**: NLP algorithms can adapt to different languages and language variations, allowing for question paper generation in multiple languages.

**Scalability**: NLP algorithms make question paper generation scalable. They can generate a large number of questions quickly and efficiently, saving time and effort for educators and test creators.



#### Applications of NLP: • Spam filters

- Algorithmic Trading
- Questions Answering
- Summarizing Information

#### 8. UML DIAGRAMS:

#### USE CASES





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## Fig.8.3.overall diagram





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#### 9 EXPERIMENTAL RESULTS

This result discusses about the system for automatic generation of question papers: simplifying assessment and evaluation by prompting program values from user and is being database for question paper generation of mcq and fill in blanks and question paper generator are provided below as Fig. 9.1., Fig. 9.2. and Fig. 9.3.



Fig.9.1. shows the starting coding



Fig.9.2.login page



Fig.9.3. Question paper generator register page



Fig.9.4.login page information filled

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Question Paper Generator																							
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Fig.9.5.Question paper generator page



Fig.9.6 Mcq question paper generator page in upload files



Fig.9.7. generator page saved files

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Fig.9.9.Mcq question paper generator in question paper viewed

#### **10 CONCLUSION&FUTURE WORK**

The Automatic Question Paper Generator System (QGS) can be further enhanced to improve its functionality, adaptability, and efficiency. One of the key future enhancements is integrating Artificial Intelligence (AI) and Machine Learning (ML) to analyze past exam performance and recommend optimal question distributions based on student learning patterns. Additionally, Natural Language Processing (NLP) can be incorporated to generate dynamic questions, automatically rephrase questions, and detect duplicate or redundant content in the question bank.

Another enhancement is enabling adaptive question paper generation, where the system can create personalized question sets for different students based on their proficiency levels. This would be particularly beneficial for conducting adaptive testing and customized assessments. Moreover, the system can be integrated with Learning Management Systems (LMS) to fetch course-related data, track student progress, and generate question papers aligned with real-time performance metrics. To ensure greater accessibility and usability, the system can be developed as a educators to access and generate question papers remotely. Enhancing security measures through blockchain technology can also ensure the authenticity and integrity of question papers, preventing unauthorized modifications and leaks.Furthermore, the system can be upgraded to support multiple languages, enabling its use in diverse educational environments globally.

Advanced formatting features for question paper generation, including automatic diagrams, equations, and multimedia integration, would further enhance the quality of assessments. These future enhancements will make the QGSmore intelligent, flexible, and efficient in addressing the evolving needs of modern education.

In conclusion, the Automatic Question Paper Generator System (QGS) represents a transformative leap in the realm of educational assessment. By seamlessly integrating deep learning and natural language processing (NLP) technologies, this system has not only automated the arduous task of question paper creation but also elevated the quality and relevance of assessments. Its adaptability and user-friendly interface empower educational institutions to efficiently generate question papers aligned with syllabi and curricula, while its robust security mechanisms safeguard the integrity of examinations. QGS is a testament to the potential of cutting-edge technology in enhancing educational processes, promising streamlined operations, data security, and a more enriching learning experience for students and educators alike.

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