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# CRITERION BASED AUTOMATIC GENERATION OF QUESTION PAPER

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**Abstract :** In any educational course curriculum, the courses are defined with learning objectives. Teachers conduct assessments to know if students have achieved certain learning objectives or not. The Proposed System provides a solution to choose challenging, well framed questions and make it easy for the user to generate it within a short period of time. The existing tools are rigid and support very basic or limited parameters. In our system we allow admin and user to input a set of questions and mark them with parameters such as difficulty level, complexity, type of question, module, min and max weightage. It contains two modules namely admin module and user module and the question management makes it an effortless task. From the entered input the paper is generated and saved as a .pdf file which can be kept for own or distributed as per the user or admin requirements. The required software and hardware are easily available and easy to work with. The goal is to simplify its current manual method, by means of computerised equipment and complete computer applications, in order to meet its needs, so that its important data/information can be stored for a longer period of time with easy access and manipulation. Basically the project describes how to manage for good performance and better services for the clients.

**Keywords** – Complexity, Examination, Question paper generation system, Web based Application, Web based Model.

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## I. INTRODUCTION

The "Criterion Based Automatic Generation of Question Paper" has been created to abrogate the issues winning in the rehearsing manual framework. This framework is upheld to help diminish the difficulties looked by this current framework. Alongside this framework is intended to do activities in a smooth and compelling way.

The principle objective of the undertaking on "Criterion Based Automatic Generation of Question Paper" is to deal with the subtleties of Paper, Class and Subject. It manages all the information about Paper, Question Generator, Subject. The project is totally built for administrative end and thus only the administrator is guaranteed the access or could be said as only designated people could access the system. The motivation behind the undertaking is to construct an application program to decrease the manual work for dealing with the Paper, Class, Question Generator

## II. RELATED WORK

Prof. Mrunal Fatangare [1] Exam Paper Generator provides a solution to choose challenging, well framed questions and it makes easy for the instructor to generate paper within a short period of time. This can be done in a few taps of the hand as it is an Android application, therefore very easy accessible at any time and place. It contains several modules which enables the system to deal with all questions easily. The modules like admin

module, user module, and question entry and question management makes it an uncomplicated task. From the given input the paper is generated and saved as a .pdf file which can be kept for own or distributed as per the user or admin requirements.

Liancheng Guan [2] The plan of the programmed generative arrangement of assessment papers that depends on the web has become a vogue. In order to reduce the burden on teachers and avoid duplication of work, they design the system to automatically generate test papers. It depends on a persistently refreshed assessment question bank framework, as indicated by the instructors' requests, which can usually produce the test paper with an unmistakable level of trouble, the number and worth. The customer setup is basic and it tends to be liberated from geographic restriction. Clients just need to experience their own personality verification to enter the naturally created arrangement of test papers, and to oversee and keep up assessment questions, test and client data, etc. The test substance continually enhanced and improved and the information dividing between instructors can be handily performed. It will have important practical significance to increase work efficiency.

Surbhi Choudhary, Abdul Rais [3] In this contemporary world digital book has become an essential prerequisite for the understudies to show up and get ready for their serious tests inside school premises. In this paper, a model system for smart question paper generation of universities. The technique behind this system is that many random question papers are generated along with the difficulty level of the questions in terms of percentage.

After generation that specific question is then mailed to the respective university. In this system administration of the database inputs set of question paper with an option of check box to tick the correct answer. The weightage of the particular question in terms of marks and hours and the complexity of the question is determined. After this process complete question paper along with the weightage is stored in the database. In order to build question paper for 100 marks, admin sets all the weightage and difficulties to solve the problem. When the trouble and weightage is indicated a pre doc document according to chosen organization will be downloaded to the administrator and an electronic mail will be set off. Ranges of difficulty are from easy, medium and hard.

Mr. Shreyas R Chim, Dr. Geetanjali V Kale [4] The examination is a critical movement for every educational organization to evaluate student learning execution. It additionally checks the nature of the understudies and shows the possibility of the instructing learning process. Paper-setter needs to contribute a ton of time and energy in choosing legitimate questions for question papers. The issue is with the nature of the question set created on account of some human elements. Outcome- Based Education has moved the worldview of build up question papers and includes parameters multi-overlay alongside Blooms Taxonomy. To favour the condition for Outcome-Based Education, it is imperative to maintain the quality of questions placed in the question paper. (AQGS) through randomization using Parameterized Algorithm is one of the ways to work on this problem. The question-answers are categorized (e.g.:- question type, subject, unit, difficulty level, priority level, marks etc.) and appropriately maintain in database.

Kapil Naik, Shreyas Sule [5] Setting up the test questions is testing, monotonous and tedious for the educators. Consequently Automatic Question Paper Generator System (QGS) which utilizes rearranging calculation as a randomization method. This system includes many modules like user administration, subject selection, difficulty level specification, question entry, question management, paper generation, and paper management.

P. Prinetto, M. Rebaudengo et. al [6] This paper is worried about the subject of mechanized test design age for huge coordinated consecutive circuits and portrays a methodology dependent on Genetic Algorithms reasonable for even the biggest benchmark circuits, along with a model framework named GATTO. Its viability for circuits already unmanageable is outlined. The adaptability of the new methodology empowers clients to effectively compromise flaw inclusion and CPU time to suit their necessities.

Catherine Vafeiadou, Pantelis Vasiloudis et. al [7] In this paper, the development of a total online programmed assessment arrangement of advanced circuits is dissected. In particular, open source programming was utilized to build a powerful site for mechanized understudy assessment to help nonconcurrent e-learning, upheld by a RDBMS information base. The application development language is the dynamic programming language for web applications PHP, while the PDO extension is used for a safe and secure connection to the database.

Girish Kumar, Rafael E. Banchs et. al [8] The present instructive frameworks expect understudies to review and apply significant ideas from study material to perform capability in evaluations. Critical to achieving this is practice and self-assessment through questions. The crafting of such questions can be time consuming for teachers while questions from external sources, e.g. assessment books, might not be tailored to suit students' study materials. They proposed a robotized framework for Gap-Fill Question Generation (GFQG) from instructive writings.

Kanchan H. Pinjani, Renuka Y. Raut et. al [9] Intelligent agents are the software programs that perform certain tasks on behalf their users. They are particularly useful for automating tasks that are complex and repetitive. Setting of question paper is a too complex and tedious job which requires diverse range of constraints to be taken into consideration.

Itziar Aldabe, Maddalen Lopez de Lacalle et. al [10] In this article, ArikIturri, an Automatic Question Generator for Basque language test questions, which is liberated from the test evaluation application that uses it. The data hotspot for this inquiry generator comprises of phonetically examined genuine corpora, addressed in XML increase language. ArikIturri makes use of NLP tools. The impact of the heartiness of those devices and the pre-owned corpora is 6 featured in the article. The viability of ArikIturri is proved when constructing fill-in-the-blank, word formation, multiple choice, and error correction question types.

Guang Cena , Yuxiao Dong et. al [11] This article utilizes lightweight J2EE devices dependent on B/S engineering to plan an auto-produced paper the executive's framework. This framework incorporates a few modules, to be specific: client the executives, subject administration, grouping the board, question passage, question the board, paper age, and paper the board. The plan interaction plays out the investigation and forms the assessment paper utilizing an effective calculation with a high chance of progress. With this algorithm, the user needs to identify the subject, the question type and the difficulty level. From this information, the assessment paper will be created naturally. Utilization of JSP and Microsoft Word interface, the altering of inquiries and answers is performed utilizing Word and the last paper might be put away as ".doc" documents.

Miss. Priyanka Phulmogare et. al [12] In this paper, a necessity to have a framework which will consequently make the inquiry paper from educator entered portrayal inside couple of moments. In this paper, they have actualized an advanced developmental way that can oversee multi-requirements issue alongside making question papers for assessments in self-sufficient establishments from an exceptionally immense inquiry bank information base. This paper portrays the usage of randomization calculation in an Automatic Question paper Generator System which has been executed uncommonly for self-governing organizations.

Dan Liu, Jianmin Wang et. al [13] Customary strategy for test paper age is tedious, low productive and low achievement. In order to improve the success rate of test paper, the paper puts forward an ant colony algorithm of automatic sets method. Initial, a numerical model of imperative is worked by expects of papers, and by utilizing the insect province calculation, the ideal arrangement of collection is acquired. Recreation results show that, contrasted and the conventional sets calculation, the insect state calculation improves the productivity of collection, increment pace of collection, and fulfills the current organization on-line assessment the frameworks of ongoing higher necessities of collection.

Mr. Amit Sanjay Khairnar et. al. [14] The software produces random question paper set such that the question does not repeat in the same paper. The product will enable the school with an integral asset to create question papers in a limited capacity to focus time hence saving a ton of their valuable time.

Gauri Nalawade, Rekha Ramesh [15] In any educational course curriculum, the courses are defined with learning objectives. Teachers conduct assessments to know if students have achieved certain learning objectives or not.

### III. METHODOLOGY

The "Criterion Based Automatic Generation of Question Paper" is web based application. The framework utilizes Visual Studio Code is a source-code proofreader and MEAN stack that alludes to an assortment of JavaScript based advances used to create web applications. MEAN is an acronym for Mongo DB, Express JS, Angular JS and Node.js. The proposed system carries a two modules, user module and admin module. User can generate the paper by selecting particular subject and exam. Exam consists of End semester, Term test and others (user can customize the whole paper). In End semester and Term test user get default 80 marks and 20 marks question paper respectively. User can use templates for generating question paper or customize according to choice. User have certain authority like Add questions to database, view database, add tags, adjust parameters, and preview paper. Admin can able to manage the user. He/she has rights to add/delete new courses and streams. The system helps users generate question paper over just few clicks right from logging in into the system. The easy to use UI helps users immensely to understand the system better and getting used to the system. The UI is designed in such a way that even the new user would find it easy to use.

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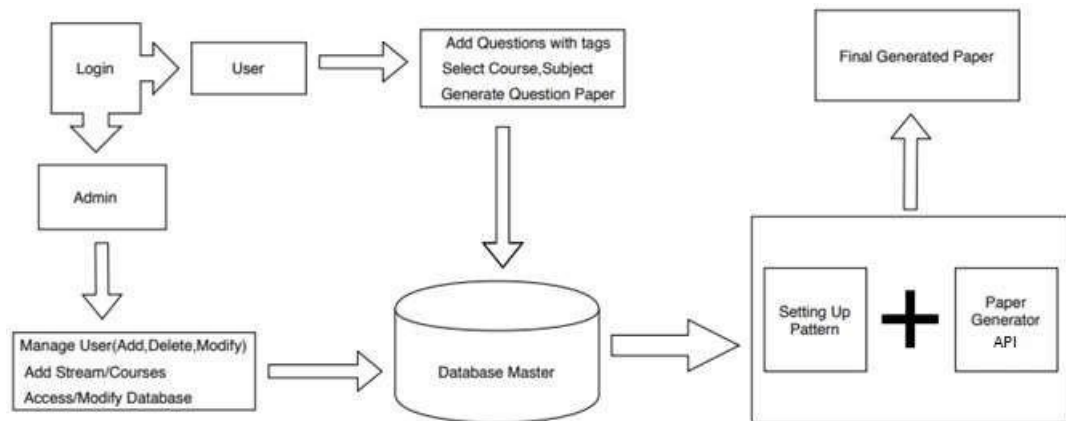


Fig 1: Block Diagram

Fig 1 depicts the block diagram of the proposed system. After the login, the system specifically checks the user and admin. Both having certain authorities like, add questions with tags, selection of course, selection of subject. Admin can able to manage user, add stream/courses, modify database. The all information is stored in database master. By setting up paper and using paper generator system, the final paper is generated.

#### IV. CONCLUSION

In the proposed system we overcome the limitations of current system and give the best user experience. Our system is web based system which can accessed from anywhere and anytime using web browser be it on Mobilephone or Desktop. The system will provide great aid to teachers and it is the need of the time to implement this technology. This would not only help the teachers or paper setters but it will also help to reduce the chances of papers getting leaked as paper could generate in minutes.

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