

Automated Question Paper Generator System

Mojitha Mohandas¹, Aishwarya Chavan², Rasika Manjarekar³, Divya Karekar⁴

Student, Information Technology, Atharva College of Engineering, Mumbai, India^{1,2,3,4}

Abstract: This is a challenging era due to the growth in the field of computer science and demand we are facing today. Hence examinations play a vital role in testing student's performance. And that is why it is important to have a smart development question model for growth of students as well as to test their learning skills thereby keeping a check on student performance. Generating an effective question paper is a task of great importance for any educational institute. The traditional method, where lecturers manually prepare question paper, it is very tedious and challenging. Hence, with the help of this technical paper we present the solution in form of Automated Question Paper Generator System (AQPGS) which makes use of Fuzzy algorithm. It is made to allow universities to generate question papers with random but even questions to cover most chapters of subject with difficulty level within seconds and mail them to colleges instantly.

Keywords: Fuzzy logic, question paper generator, classical method, ASP.NET, SQL, Examination.

I. INTRODUCTION

In today's world, time is a major concern. Any product that can effectively reduce time and power consumption is accepted and appreciated. Thus we are presenting an Automated Question Paper Generator System that can reduce time consumption by replacing the conventional method of question paper generation system. It also needs lesser man power. In our system we allow administrator to input a set of questions. We also allow admin to provide weight age and complexity for each of these questions. After this the questions are stored in database along with their weight age. During the time of question paper generation, the admin just has to select the percentage of difficulty. On this selection the system selects questions randomly according to the difficulty that admin chose. The questions are chosen based on their complexity level. The project also has an option of adding multiple choice questions which can be used to create a question paper for aptitude exams which are conducted by companies during placements. The system automatically generates paper, prepares doc file as per selected paper format. Also emails it to other colleges. After this question paper is converted to pdf file and emailed to colleges on button click. This proposed system aims at an unbiased selection of questions in a question paper as well reducing the man power and time required for the same.

II. LITERATURE SURVEY

Suraj Kanya, Madhuri Sachdeva, Navdeep Dhaliwa and Sonit Singh proposed a system[1] based on Fuzzy Logic in which all parameters were 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.

Noor Hasimah Ibrahim Teo, Nordin Abu Bakar, Mohamad Rezduan Abd Rashid proposed a system "Representing Examination Question Knowledge into Genetic Algorithm" [2] in which text matching and question sorting was done by the system itself but one of the major

limitations of this system was the total number of questions that could be added.

Vijay Krishan Purohit', Abhijeet Kumar', Asma Jabeen, Saurabh Srivastava, R H Goudar ,Shivanagowda proposed a system "Design of Adaptive Question Bank Development and Management System" [3] that was an adaptive system but the data entered is assumed to be error free which could affect the overall accuracy of the system.

III. PROPOSED SYSTEM

Considering the short coming of conventional system, an eager need was felt to redesign the whole system. To develop a new examination system, system was closely observed. Some qualities and capabilities which the system should carry are, developing the question bank automatically, limiting the human intervention to raise the secrecy standards, providing more flexibility in logical selection of questions for skeleton framing and handling multiple attributes containing imprecise data to perform human-like reasoning effectively.

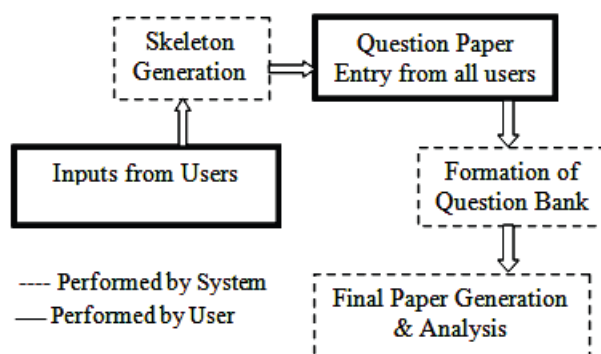


Fig1: Block Diagram

To generate the question paper we can divide the proposed system into phases such as:

1. Selection of Parameters.
2. Question Bank Formation.
3. Final Question Paper Generation.

Working of the system:

1. Admin makes the skeleton of the question paper which consists of various questions and sub-questions.
2. Faculties are made to enter questions into the database along with their respective difficulty level and priorities.
3. This question bank is then sent for paper generation. Question paper is prepared on the basis of the difficulty level set by the admin. Question chosen will be unbiased and based on the fuzzy logic algorithm.
4. This question paper is then analyzed by the admin.
5. After analysis, the generated question paper can be mailed to different colleges by the university.

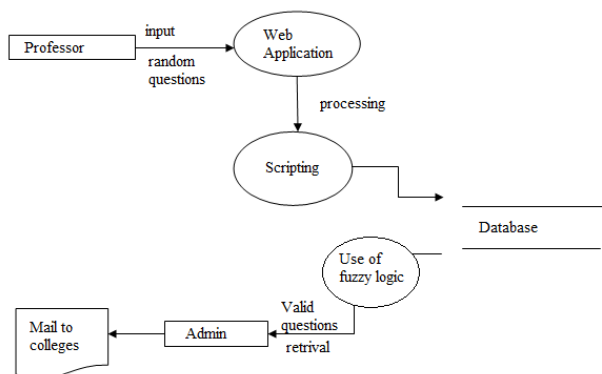


Fig 2: DFD level 1 diagram of Proposed System

The technologies and algorithms to be used in achieving this goal are explained in the next section.

IV. METHODOLOGIES

A. SQL Server:

Microsoft SQL Server 2005 is comprehensive, integrated data management and analysis software that enables organizations to reliably manage mission-critical information and confidently run today's increasingly complex business applications. SQL Server 2005 allows companies to gain greater insight from their business information and achieve faster results for a competitive advantage.

B. Visual Studio:

The Microsoft Visual Studio development system is a suite of development tools designed to aid software developers whether they are novices or seasoned professionals—face complex challenges and create innovative solutions. Every day, software developers break through tough problems to create software that makes a difference in the lives of others. Visual Studio's role is to improve the process of development to make the work of achieving those breakthroughs easier and more satisfying.

C. The Water Fall Model:

Initially there was a time when software development started, the model is mainly useful where the process models the linear approach to develop the software was used. Now days there are situations when the software comes with new versions and fulfills the current requirement and tries to manage the change management.

The water fall model is also called the classic life cycle, suggests a systematic sequential approach to software development. This process begins with customer specification of requirements and progress through different activities like planning, modeling, construction, and deployment and ends in completed software. The waterfall model is a sequential model and even called a linear model which is not suitable for changing nature work. In this model work is done in a linear manner.

D. Fuzzy logic algorithm:

The fuzzy logic algorithm works on the degrees of truth rather than the conventional binary system consisting of only 2 values. Boolean logic is biased unlike the fuzzy logic. Fuzzy logic gives an unbiased result. Fuzzy logic works more like a human brain but with much faster response time. The idea of fuzzy logic was first introduced by Dr. Lotfi Zadeh of the University of California at Berkeley in the 1960s.

V. CONCLUSION

In this paper a new fuzzy logic based IQPGS system for autonomous paper generation has been proposed. Comparison with classical method shows that the proposed system is more reliable in terms of duplicity removal, uncompromised issues, and lesser man power, logical in terms of unbiased selection and faster as the use of fuzzy logics in machines both approximate and precise reasoning are considered very well. In future, to make the system more enhanced adaptability by using feedbacks to make the system improve itself via self learning mechanism and detection of vague data entry will further be introduced.

ACKNOWLEDGMENT

It gives us great pleasure in presenting this project report titled "Automated Question Paper Generator System" and we wish to express our immense gratitude to the people who provided invaluable knowledge and support in the completion of this project. Their guidance and motivation has helped in making this project a great success. We express our gratitude to our project guide **Prof. Supriya Mandhare**, who provided us with all the guidance and encouragement throughout the project development. We would also like to express our sincere gratitude to the respective Project coordinators. We are eager and glad to express our gratitude to the Head of the Information Technology Dept. **Prof. Neelima Pathak**, for her approval of this project. We are also thankful to her for providing us the needed assistance, detailed suggestions and also encouragement to do the project. We would like to deeply express our sincere gratitude to our respected principal **Prof. Dr. Shrikant Kallurkar** and the management of Atharva College of Engineering for providing such an ideal atmosphere to build up this project with well-equipped library with all the utmost necessary reference materials and up to date IT Laboratories. We are extremely thankful to all staff and the management of the college for providing us all the facilities and resources required.

REFERENCES

- [1] Suraj Kanya, Madhuri Sachdeva, Navdeep Dhaliwal and Sonit Singh, "Fuzzy Logic Based Intelligent Question Paper Generator" IEEE International Advance Computing Conference (IACC), 2014.
- [2] Noor Hasimah Ibrahim Teo, Nordin Abu Bakar and Moamed Rezduan Abd Rashid, "Representing Examination Question Knowledge into Genetic Algorithm", IEEE Global Engineering Education Conference (EDUCON), 2014.
- [3] Vijay Krishan Purohit', Abhijeet Kumar', Asma Jabeen, Saurabh Srivastava, R H Goudar, Shivanagowda, "Design of Adaptive Question Bank Development and Management System", 2nd IEEE International Conference on Parallel, Distributed and Grid Computing, 2012.
- [4] A Kang Haiyan, Zhang Yangsen, Yang Lei and Liu Wenhua, "Study on Key Technologies of Generator of Q/A System", IEEE Pacific-Asia Workshop on Computational Intelligence and Industrial Application, 2008.