

# Randomized Online Question Paper Generation through SQL query and JEE

Vinayak Hegde, Sharanya T D, Likhitha S

**Abstract:** An examination plays a vital role in evaluating the competent level of the student in an educational sector. It determines the quality of the student. Preparing the question paper is a time-consuming process for every question paper setter. So preparation of question paper in aligning with the requirement of the university is a challenging task. In a conventional university setting the question, the paper has been manual. This method becomes ineffective if the question paper is set become bias, repetition, and lack of uniform distribution within the assigned syllabus of the university. This problem we addressed by developing the software on Online Question Paper setter using random algorithmic function using SQL query and Java Enterprise Edition. The system is designed with an admin module, Teacher module, and exam staff module. Inner processes are designed with question entry by different types of difficulty level and approval is done by the department head, using question selection module question paper generator can generate question paper for any defined requirement of question paper as per the template of the university examination procedure. Using the random function in SQL query and server-side programming JSP and Servlet the system generates the random questions in the defined subject and question paper is generated in .docx format or .PDF format. The software is designed with software engineering principles; it is user-friendly, robust in operation, secure in maintenance and good reliability. The application serves the purpose of the university examination question paper preparation, in turn; it reduces the workload of the faculty members of the institution.

**Index Terms** Randomization, Generate Question Paper, Question Pattern, Word Formate, JEE.

## I. INTRODUCTION

Online question paper system places a very important role the education sector. The main challenging task is to generate a test paper. The main purpose of developing this application is to develop an online question paper generator instead of an existing desktop application. Thus there is a vast development in the student's population as well as new additions to the courses which are mainly offered by the government universities. So in order to prepare test papers for the whole government and private universities can be a quiet hectic task so to make the system more simple we are developing the online question paper generator. This system mainly works on the bases of an algorithm known as a

**Revised Manuscript Received on June 08, 2019.**

**Vinayak Hegde**, Department of Computer Science, Amrita School of Arts and Sciences Mysuru, Amrita Vishwa Vidyapeetham Mysuru campus, Mysuru, India.

**Sharanya T D**, Department of Computer Science, Amrita School of Arts and Sciences Mysuru, Amrita Vishwa Vidyapeetham Mysuru campus, Mysuru, India.

**Likhitha S**, Department of Computer Science, Amrita School of Arts and Sciences Mysuru, Amrita Vishwa Vidyapeetham Mysuru campus, Mysuru, India.

random query. The application allows the user or the administrators to log in the page as soon as the user gets a login to the page they can create a question bank for various semester, course, subject names and store the data in an organized way in the database. The main use of this system is to decrease the time complication and workload. In our system, we allow the user to input the data or the set of questions which will be stored in the database and this system has a QP set pattern module where the user can choose the levels of the question. Then the questions are picked randomly from the database to generate the paper as per the requirement of the university. Then finally the paper will be generated in the Word Format.

## II. LITERATURE SURVEY

Mojitha Mohandas, Aishwarya Chavan, Rasika Manjarekar, Divya Karekar4 An automated question paper generated a system that can mainly use to reduce the time consumption by replacing the conventional method of the question paper generated system. This paper mainly uses fuzzy logic Algorithm. By Comparison with the classical method, this shows that the proposed system is more reliable in terms of duplicity removal and lesser man power[1].

Kapil Naik, Shreyas Sule, Shruti Jadhav, Surya Pandey[2]Automatic question paper generation system enables the institutions to automatically generate the out of the existing question bank in the database. This paper mainly concentrates on the practice of shuffling Algorithm as a Randomized technique to overcome the problem. These results show the potential proof of employment of such an algorithm for this type of system.[2]

Lim Teck Heng, Rasaya Marimuthu, Liaw Shun Chone3 and Hoe Foo Terng The main key of this paper is to deliver the method of limitation structure for the examination paper setters. The systems are developed as question banks which can generate a paper as per required. As a result test papers will be too difficult to read due to unsuitable uses of items such as font type, size, and spacing. This in return may have a great effect of students performance as well.[4]

Anirudh Joshi, Prathamesh Kudnekar, Mayur Joshi, Sidhesh Doiphode[5]The developed system mainly generates the test papers which are based on a database such that all these types of questions are stored in a database which will be randomly chosen from the database to produce the paper. The main resolution of this paper is to present different scheme to create an actual level of questions to

# Randomized Online Question Paper Generation through SQL query and JEE

Automate the whole process of the query in the question paper. Most of the system uses a searching algorithm as a technique to generate the relevant syllabus to generate the paper according to the weight of each chapter.

Rohan Bhirangi, Smita Bhoir[10] In this paper they have mainly proposed an integrated system to store the questions which are related to the particular subject and generate the paper based on the requirement. It is mainly used to allow the university to generate to the test paper within a fraction of seconds the generated question paper can be mailed to colleges instantly.

## PROPOSED SYSTEM

Randomized Question Paper Generator system is considered as the software which are mainly used in colleges, Institutions, etc, to produce and test the paper setters who mainly want to have a huge record of questions in the question paper and also creates comfort. It primarily supplies the assembly, classification and organization of a huge quantity of queries about unlike levels of toughness from methodical as well as nonscientific subjects related to several classes. This mainly presents the practices of procedures in Randomized Generator Question Paper System (RGQS) to overcome the above-mentioned problem. The Main part of the procedures is to deliver random method in the group of Systems, thus different sets of questions could be mainly generated without replication and duplication.

### A. Purpose of preparing Question prepare

- Prepare the Question paper set pattern required by the users.
- In this web application, we add and remove questions from the pool of questions in the bank.
- We can segregate different levels of Questions by Generating question paper using Randomized Algorithm.
- Print or Generated the Question paper in Word format so that we can send through the mail.

### B. The objective of the project

Involuntary Query Broadsheet Producer Scheme which brands usage of the algorithm as a randomization method. These schemes mainly contain some workings like the user management, topic selections of different levels of specifications related to question entries, query organization, paper generation, and paper administration. The main plan of this process is to make sure of the Examination and establishes to scrutiny broadsheet by means of the capable process with the very high rate of success. With this scheme, the operator needs to demand the power and to type the query and threatening the level as well.

### C. Working of Randomized Algorithm

A randomized process is a system that services a grade of uncertainty as a wedge of its sense. The process naturally habits unbroken casual moments as a support effort to manage its comportment in the courage of attaining decent routine in the “usual event” completed all probable varieties of casual morsels

### D. Steps associated with Random Question creation

For ‘n’ number of queries the nearby questions in the database, here there is some of the steps which has to be followed:

Step 1: To Generate a list ‘L’ and the number of N elements.

Step 2: To Generate a random letter ‘n’ such that  $1 \leq n$

Step 3: If n goes to L then GOTO Step 2 else reserve the n in the list L elements

Step 4: select the questions from the question bank where the corresponding database of the ‘n’ whose

Standard should be = true

Step 5: then move to the next step, else set flag = false.

- The algorithm takes four constraints i.e., Course, Subjects, Semester, TestType, Maximum Marks, Types of questions required.
- The algorithm checks the constraints.
- Sorts the instructions based on the fractions of the difference between obligatory query types and current question types.
- If possible Check the fraction of all questions which are currently can be used to meet the needs and also test the paper completely.
- If it is not in the case then sort the order based on the fraction difference between the required chapters and current chapters.
- Again check the needs that have to meet the requirements of the end users.

### E. Proposed Model

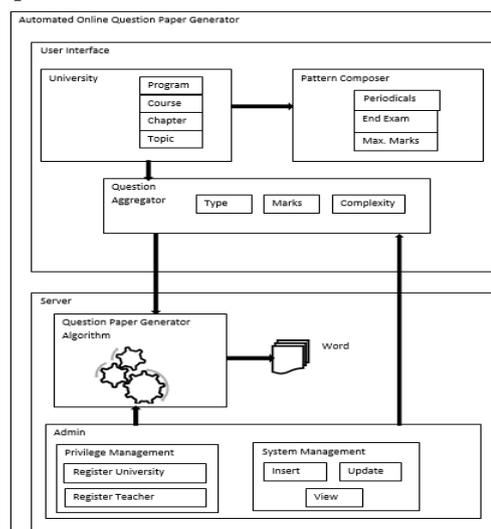


Fig.1. The architecture of generating QP [15]



### III. SYSTEM DESIGN

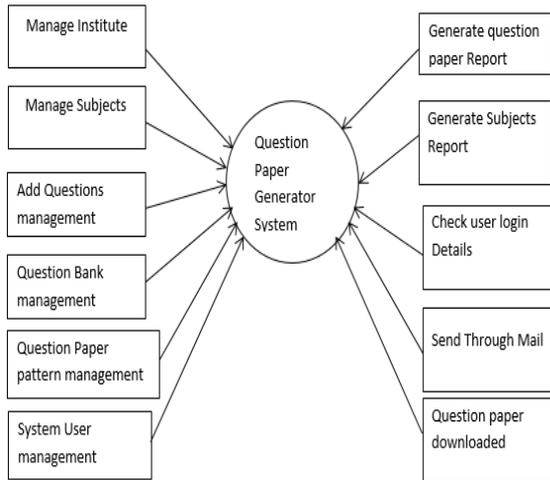


Fig.2. Design of DFD Diagram

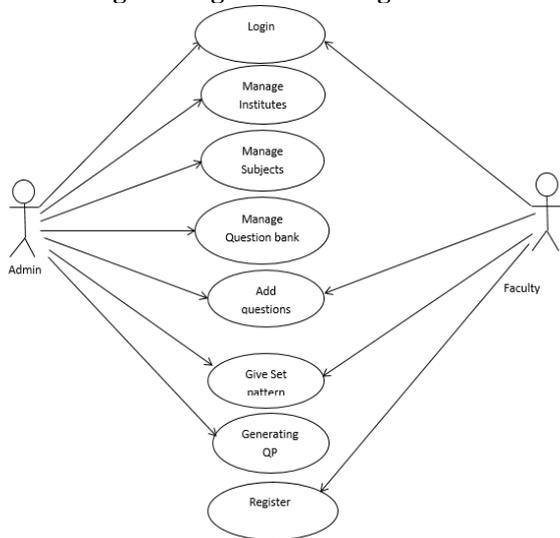


Fig.3. USE CASE Diagram

### IV. SYSTEM ANALYSIS

#### A. The drawback of the Existing system

- The existing system of Online Question paper is not in the proper format.
- Question paper generator system is not up to the university requirements.
- Duplication of questions occurs in this system.
- Repitation of questions may also occur by Generating question paper.
- The current system of the desktop application where only admin can access the system.

### B. Project Methodology

#### C.

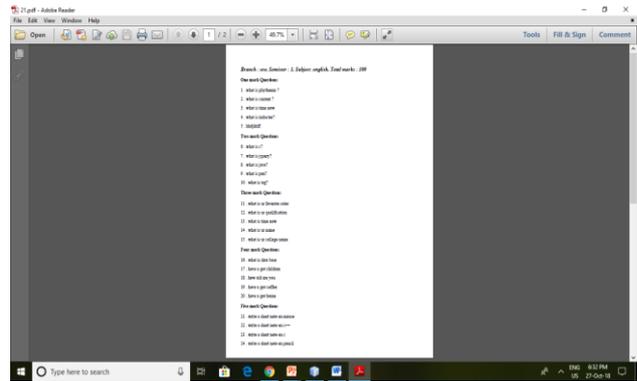


Fig.4. Pool of questions in QuestionBank

#### D. Working of the Current Web application system

- Faculty will register to their respective user id, then they will hand over the questions to the question band which will be stored in the database.
- Chairperson will criticize the questions and give approval to the next process.
- Faculty will check the question paper once.
- Then the Question paper will be generated according to the required format.
- The final question paper will be in a word format and it can also be sent through the mail to the print.

### V. IMPLEMENTATION AND SCREENSHOTS

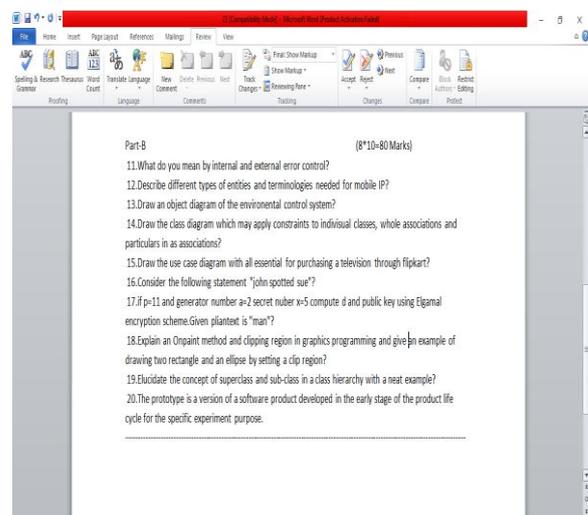


Fig.5. Paper Generated in word formate

# Randomized Online Question Paper Generation through SQL query and JEE



Fig.6.Home page

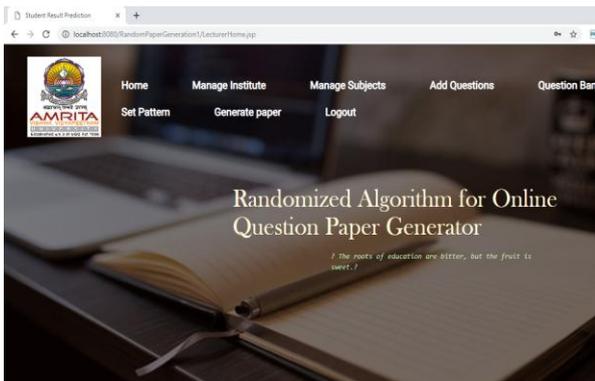


Fig.7.After Admin login page

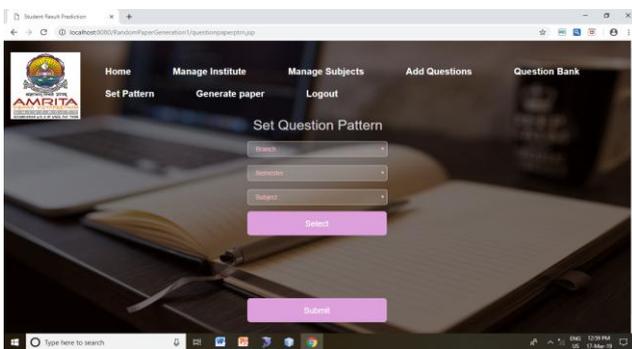


Fig.8.Set Question Paper pattern

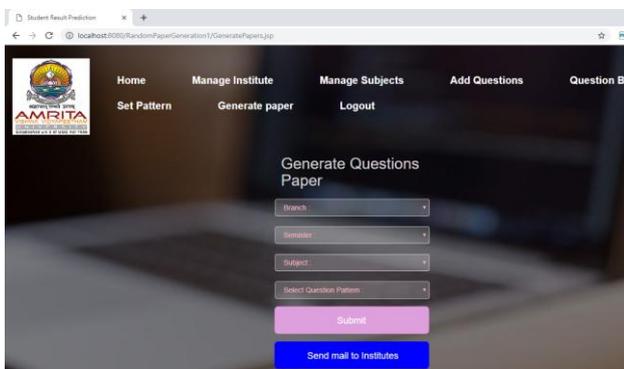


Fig.9.Generating Question paper according to the paper formate and also paper can be mailed to get a copy of the question paper.

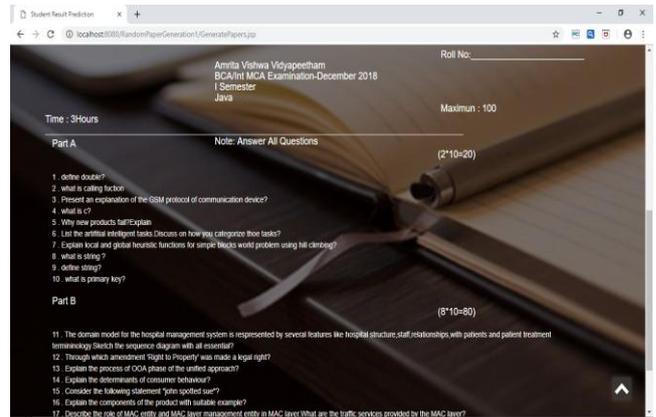


Fig.10.Paper will be generated according to the set pattern

## A. SQL Query to generate a Question Paper using Random Algorithm

```
PreparedStatement pstmt =
con.prepareStatement("SELECT questions FROM
questions WHERE Branch = '"+br+"' AND Semester =
 '"+sem+"' AND SUBJECT = '"+sub+"' AND Qtype =
 '"+10+"' ORDER BY RAND() LIMIT 3");
```

## B. Code Snippet

```
Protected void processRequest(HttpServletRequest request,
HttpServletResponse response) throws ServletException, IOException {
    response.setContentType("text/html;charset=UTF-8");
    PrintWriter out = response.getWriter();
    JSONArray array = new JSONArray()
    try {
        String branch = request.getParameter("branch");
        String semester = request.getParameter("semester");
        String subject = request.getParameter("subject");
        System.out.println(branch + " " + semester + " " + subject);
        DBSingleton db = DBSingleton.getDbSingleton();
        Connection con = db.getConnection();
        PreparedStatement pstmt = con.prepareStatement("SELECT * FROM
qpattern WHERE branch = '" + branch + "' AND semester = '" + semester + "'
AND SUBJECT = '" + subject + "'");
        ResultSet rs = pstmt.executeQuery();
        // System.out.println("iiiiiiii");
        while (rs.next()) {
            JSONObject obj = new JSONObject();
            obj.put("pid", rs.getString("pid"));
            obj.put("qtype", rs.getString("qtype"));
            obj.put("qptrn", rs.getString("qptrn"));
            array.put(obj);
            System.out.println(obj);
        }
    } catch (NullPointerException | SQLException e) {
        out.print(array);
    }
```

## VI. CONCLUSION

It is decided that the presentation works well and content users. The presentation is verified very well and errors are acceptably corrected. The position is instantaneously recovered from more than one system. Instantaneously login from more than one place is tested. The presentation works accordingly to the limits provided in their respective system. Further can be made to the presentation so that the application functions.



## REFERENCES

1. Mojitha Mohandas, Aishwarya Chavan, Rashika Manjarekar, Divya Karekar, "Automated Question Paper Generator System", International Journal of Advance Research Computer And Communication Engineering (IJARCCCE) ISSN-2278-1021, Vol-4, Issue-12, 676 to 678.
2. Kapil Naik, Shreyas Sule, Shurti Jadhav, Surya Pandey, "Automated Question Paper Generation System using Randomization Algorithm", International Journal of Engineering and Technical Research (IJETR) ISSN-2321-0869, Vol-2, Issue-12, 192 to 194.
3. Mr. Amit Sanjay Khairnar, Mr. Bhagwat Chintama Jadhav, Mr. Rahul Birhade, Mr. Pramod Patil, "Automatic Question Paper Generator", International Journal for Technological Research in Engineering, ISSN-2347-4718, Vol-4, Issue-9, 1837 to 1840.
4. Lim Tech Heng, Rasaya Marimuthu, Liaw Shun Chone and Hoe Foo Terng, "Smart Exam Setting with QuickSet \_Exam", International Academic Research Journal of Social Science ISSN-2289-8441, Vol-3, Issue-1, 48 to 52.
5. Anirudh Joshi, Prathamesh Kudnekar, Mayur Joshi, Siddhesh Doiphode, "A Survey on Question Paper Generation System", International Journal of Computer Application, 0975 to 8887.
6. Ashok Immanuel, Tulasi B., "Framework for Automatic Examination Paper Generator System", ISSN-2229-4333, Vol.6, Issue.1, 128 to 130.
7. Nor Shahida but Mohd Jamail and Abu Bakar Md Sultan, "Shuffling Algorithm for Automatic Generator Question Paper", 244 to 248.
8. Mrs. Asha Rawat, Priyesh Solanki, Manish Patil, Sharadha Mhetre, "Question Paper Generator System", International Journal of Technical Research and Application, ISSN:2420-8163, Vol.5, Issue.3, pg.50 to 52.
9. Mr. Mihir Joisher, Mr. Swapnil Ghagare, Ms. Mittal Patel, Mr. Ritesh Rathi, "Automatic Question Paper Generator", International Journal on Recent and Innovation Trends in Computing and Communication, Volume:4 Issue:1
10. Rohan Bhirangi, Smita Bhoir, "Automated Question Paper Generation System", International Journal of Emerging Research in Management and Technology, Volume:5, Issue-4.
11. Kah Ming Boon, and Lian Tze Lim, Jalan Anson, Georgetown, Penang, Malaysia "An Examination Question Paper Preparation System with Content-Style Separation and Bloom's Taxonomy Categorisation" ISBN: 978-0-9891305-4-7 ©2014 SDIWC
12. Fenil Kiran Gangar, Hital Gopal Gori, Ashwini Dalvi "Automatic Question Paper Generator System" International Journal of Computer Applications (0975 – 8887) Volume 166 – No.10, May 2017
13. Surbhi Choudhary, Abdul Rais Abdul Waheed, Shrutika Gawandi, Kavita Joshi "Automatic Question Paper Generator System" International Journal of Computer Science Trends and Technology (IJCSST) – Volume 3 Issue 5, Sep-Oct 2015
14. Sulieman Bani-Ahmad "Question banks software to support partially computerized exams" International Journal of Computer Applications (0977 – 8842)
15. Vinayak Hedge, Lavanya V Rao, Shivali B S "The Framework for the web based Automated Online Question paper Generator through JEE" International Journal of Engineering and Technology, 7(3)(2018)1415-1419.

## AUTHORS PROFILE



**Vinayak Hegde**, M.Sc. in Software and Information System Currently serves as Assistant Professor in the Department of Computer Science, Amrita School of Arts and Sciences Mysuru Campus Karnataka India. He has published his works in Learning Analytics, Educational Data Mining. Guided many UG and PG projects.



**Sharanya T D**, BCA, Amrita School of Arts and Sciences Amrita Vishwa Vidyapeetham, Mysuru



**Likhitha S**, BCA, Amrita School of Arts and Sciences Amrita Vishwa Vidyapeetham, Mysuru