



AN ANDROID APPLICATION FOR EFFICIENT E-QUESTION BANK

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ABSTRACT

Normally people's actions are complicated being unplanned, planned in nature. The talent to organize all the activities without inconsistency is preferred by everyone, due to its time administration. Time management is a needed objective for successful people. In the same way examination [11] method is important for students and education institutions to evaluate the students' performance. Thereby the exam nature would identify the student's quality by institutions. Exam preparation is very important and challenging for every student. When students start preparing for their exams, they normally refer the existing year's question papers to discover the question pattern, get idea of question models and find the frequent questions etc. To make these work easier, we provide the solution by an android application using efficient e-question bank system particularly for Sathyabama University. Our suggested system [12] uses searching algorithm and frequent questions mining algorithm for the application. This application is mainly built for students of Sathyabama University to search and download the previous year question papers. This proposed system also provides options for identifying the frequently asked questions from previous year question papers. Here we use Lucene scoring algorithm to extract the students-requested question papers from e-question bank data base and Apriori algorithm is used to mine the frequent questions from the old question papers.

Keywords: e-question bank, lucene scoring algorithm, apriori algorithm, android.

INTRODUCTION

With the arrival of computer related technology there is more gradual development in professional environmental areas. Most extraordinarily e-learning and e-education are extremely influenced. This way, question bank system is very popular amongst the students. Now-a-days most work is transferred from manual to automatic system in various educational systems. In our proposed system, we develop the e-question bank system for students that assist to search and download the previous year question papers. E-question bank system provides more benefits to students by creating resource access and makes learning fast, relevant and just-in-time at any place. Before the development of the e-learning system, the main issue was that students had to gather the previous year question papers from library, friends and senior students. In this manual process students had to spend more time for gathering existing question papers and find the frequently occurring questions from the collection. Also, students used more paper when taking photo copies of the question papers. When the question papers are directly downloaded from the website, it consumes more memory and data. The downloaded data is not categorized efficiently and needs time to search the exact question paper. Hence, it creates anxiety. The establishment of e-question bank application is a necessarily needed for students, particularly now day's because mobile technology is improving rapidly. The main benefit of mobile is that it provides timely access to information from anywhere and help to provide fast result. Android is a popular and open source technology. It is a Linux based operating system that is largely used in gate way devices with brilliant performance. Therefore, it improvises the market share. Database and web services technology platform are steadily maturing, so we create

the e-question bank system on Android technology to fulfill the student requirements in an efficient and easy way.

BACKGROUND

In this section we have analyzed some existing work related on our system. In [1], that system defines the design [10], implementation and analysis of Question-bank application that permits the students to get the web-related exams and quizzes, to download reviews of courses [8] and previous year exams. This system eases automatic generation, different and balanced exam related sheets that have various question types, wrapping the whole curriculum and showing steadily from simplicity to complexity. This system permits the schools to develop a database for Question-Bank that keeps exam questions, model answers, previous exams, the reviews that are helpful for every course. In [2] this system suggested a learning to rank related system that automatically produces particular system to generate questions from records for significant review support. The process of suggesting question ranking system was estimated and generated and the question quality is reported. An analysis was conducted by qualitative way using information looking for question classification that arranges to examine the questions crafted by humans. The study exposed the details and connects the frequent types of questions and that question explanation is measured in valuables through student's writers. In [3] this system suggested a tool created for automatically generating exams by choosing questions. This question bank is developed as object-related knowledge type. The questions should highlight on structuring classification of all domains of the course. A clever manager will help in choosing questions. It



observes the examiner and studies their experience at creating exams and editing questions. The suggested tool can be used in courses and various educational levels. The main purpose of this system is to create online [7] [13] exams and offline exams. Also, it will generate the key for the created tests. [9] So this device can enlarge the e-learning concept and gives more achievement in distant learning system. In [4] Lucene is an indexing toolkit created in Java, needs more user supported access and fast visiting time of index. In [5] this paper analyzes Lucene searching and indexing three important modules from the architecture of the system and compares the search results by Lucene text with response time of String retrieval. The result of the experiment shows that Lucene search provides faster recovery speed. In [6] they measure the ranking issue on popular items and signifying them related on feedback of users. In this system, user feedback is acquired by repeatedly presenting suggested item sets and users choose items depending on their individual preferences either really popular item ranking or propose true famous items. The efficient advantage of this algorithm is that it minimizes the complexity and does database scans.

E-QUESTION BANK

Our aim of this project is to reduce time for students to search and download the previous year question papers. For that we propose an e-question bank system in android platform that will be accessed easily by students. The process is shown in figure1. Here we use Lucene scoring algorithm to search questions from the database based on the user input query. And using this system, students can get the frequently asked questions from the collection of the existing question papers.

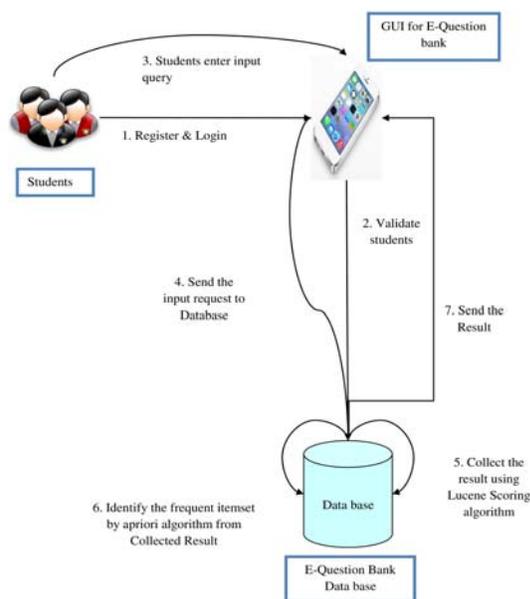


Figure-1. Model of the E-Question bank system.

A. Admin procedure

In our proposed system everyone is having some functionality to help this system work more efficiently. In the admin side, they have responsibility for collecting the previous year question papers and preprocessing the datasets before uploading them into the e-question bank data base. Admin is the authorized person for validating student details while registering them. Admin has the full authority to manage the e-question bank data base.

B. Student process

Student is the core person for this application because they are the output receiver. In this system, the students download the e-question bank application only from the Sathyabama university web [14] page. Once they download the application, they provide their details in the registration form. This registration details will be verified by the admin to validate the students. After successful registration, students can download previous year question papers in an efficient way. Our e-question bank application facilitates search options by subject name, subject code, department, year, etc. Here the main advantage of this system is that the students get frequently [15] [16] asked questions based on the students input query. This application can be accessed by students at any time and any place.

C. Efficient searching and finding frequent questions

Our system uses the Lucene scoring algorithm for increasing the searching speed and finding the exact result based on the user input query. The given input query is passed to e-question bank database. The Lucene scoring algorithm gets the query to find relevant documents based on the user query weightage and sends the results to the receiver side. If input query requests frequently asked item set, then Apriori algorithm also joins the process. It will find the frequently asked questions in the searching result of Lucene scoring algorithm.

D. Algorithm

Lucene scoring algorithm for efficient searching

Algorithm of lucene scoring utilizes a mixture of VSM (vector space model) of information obtain and Boolean process to conclude how related a specified information is to user input query. In this algorithm, user query is forward to searcher, starting the process of scoring. In inside the search, a collector is utilized for sorting and scoring of the seek results. These are essential things concerned in search:

- The query power object. The power object is inside symbol of query that permits the query to be use again by searcher.
- The call is initiated by searcher.
- A filter for preventing result set. Remainder the filter might be null.



- d) Sort object for mentioning how to arrange the results if the normal score related arrange method is not preferred.

Apriori algorithm for find frequent items

Process of data mining is analyzing and searching data in arrange to identify the important useful information. Even though data mining process contains wide computational algorithm and methods family, for this work, we have selected the apriori algorithm for data analysis framework. The aim of the algorithm is to find the frequent variable that take place synchronously in more databases.

Algorithm: FI = Apriori(MT, KI, $Supp_{min}$)

//Input: MT(Transaction), KI(l-itemset), $Supp_{min}$

//Output: FI(Frequent Itemsets)

$FL_1 = \{h|h \in KI, h.support \geq Supp_{min}\}$;

for (n=2; $FL_{k-1} \neq \emptyset$; n++) do

$G_k = Gen\ Candidate(FL_{k-1})$;

for every transaction $t \in MT$ do

for every candidate $g \in G_k$ do

if g is enclosed in t then

g.count++;

end

end

$FL_k = \{g \in G_k | g.support \geq Supp_{min}\}$

end

return FI = $\cup_k FL_k$;

RESULT AND DISCUSSIONS

The contribution of this e-question bank application is to minimize the student burden during exams and provide the exact results to students when they search previous year question papers. In this section, we have shown explanation graph wise. It will show better results of our proposed system.

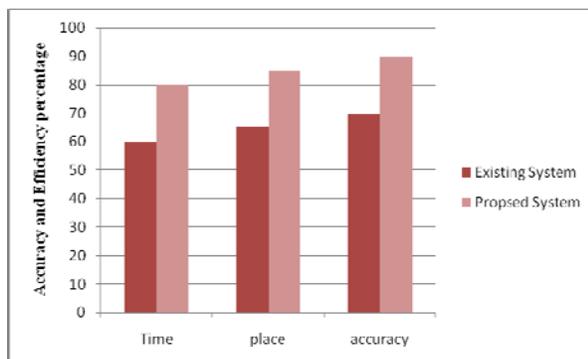


Figure-2. Process comparison between existing and proposed system.

The Figure-2 shows the accuracy and efficiency comparison between the proposed and the existing systems. Here we take time, place and accuracy attributes to show best results compared to the existing system. Using this application students can access e-question bank at any time and they can access from any place.

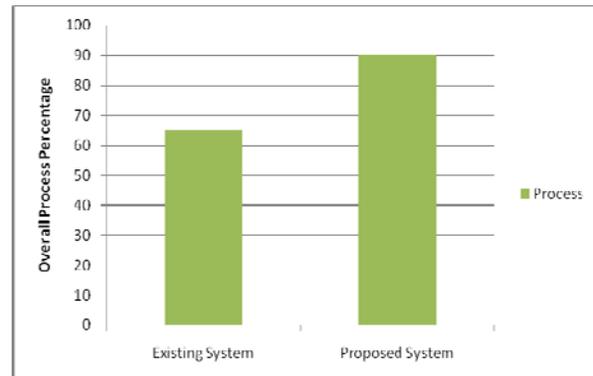


Figure-3. Overall performance percentage.

The Figure-3 explains that the performance of our proposed system is better than the existing system. Using this android application we achieve the above mentioned goals.

CONCLUSIONS

In the above discussion, it is obvious that android platform has an efficient mobile platform. Android was developed to allow the application creator to write inventive application and their individual source code. We take this environment to implement and design an e-question bank application that helps the students to find and download existing question papers in an easy way. This system helps Sathyabama University to create a question-bank database that keeps previous years dataset for students to access and reduce the burden to acquire the exact questions.

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