ONTOLOGY BASED ALGORITHM AND LIFE CYCLE FOR SUBJECTIVE ANSWER ASSESSMENT SYSTEM

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ABSTRACT

This paper is about the implementation of a system that would evaluate subjective answers. The past decade has witnessed much advancement in the technical domain, including the educational sector. Not only have the developed economies adopted the said means as the prime mode of education but the developing nations like ours are also rapidly catching up to them. Today the World Wide Web caters to almost all the requirements of the education system, save a few. As it is already known how internet today has become the biggest encyclopaedia of all times, consisting of information on almost all the topics existing. So imparting knowledge in this manner is not a novelty in the current era. Hence the system would be a step forward in the same direction.

Keywords: Ontology, Life Cycle, Subjective Answer Assessment

I. INTRODUCTION

Besides imparting knowledge the internet also facilitates us with the evaluation of the knowledge gained by the learner. Many online education courses have modules for evaluation of the objective question-answers like fill in the blanks, one word answers and the most popular of all the multiple choice questions. These modules on one hand are proving to be very efficient in testing the student's aptitude, on the other hand fail to measure the conceptual knowledge a student or learner possess and in today's world where there is such a massive competition, the knowledge alone is not enough, the student must also have the ability to express that knowledge in a structured format. This is where our system comes in to picture.

The proposed system: Subjective Answer Assessment System is a system that seeks to implement an application which will be able to evaluate the subjective answer to a question, up to six lines. It will also allot the marks according to the percentage of accuracy present in the answer. The proposed system will provide some relief to the examiners as it will be able to evaluate short subjective answers.

II. ISSUES IN SUBJECTIVE ANSWER ASSESSMENT SYSTEM

The proposed system when implemented will no doubt be a very helpful tool but there are certain issues that need to be addressed before the final implementation of the system. These issues are worth mentioning as they are the ones that have been delaying the full fledged development and usage of the proposed system.

They are enumerated as follows:

- No standard, fixed answer by student .i.e. no unanimity.

- Evaluation should be based on meaning and not the keywords alone.

- No definite size or length of the answer

- Provision of context along with the question becomes necessary to narrow down the target answer.

III. MODULES OF THE SYSTEM

The proposed system will have the following modules in its final implementation:

- Generation of questions from question bank.
- Storage of the answer to be evaluated.
- Categorizing the answer into two broad groups: Stopwords and Keywords.
- Stemming
- Evaluation: evaluating the percent of match between the expected keywords and the keywords typed by the examinee.
- Display results

IV. TOOLS AND TECHNOLOGY TO BE USED

Proposed system is to be developed using JAVA and SQLplus.
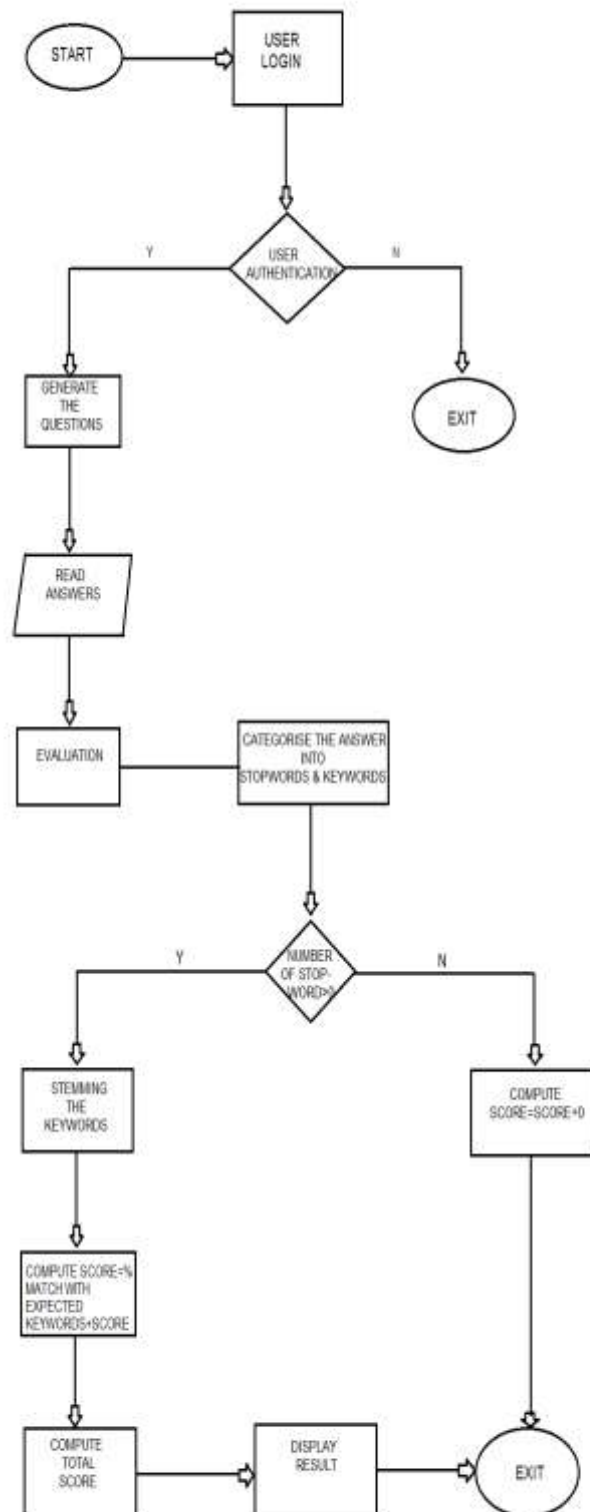
The proposed system will be implemented using Java. It will seek to evaluate a maximum of six line answer to a given question. The important question still remains, how; the modules stated in the previous segment are to be put to use in order to design and implement the said system. The system will need to have a database compromising of Questions, Answers, Keywords and Stopwords.

V. SYSTEM SCOPE

- For experiments, questions which are answered in english are taken in to consideration.
- For experiments, answers of Computer Science domain are taken in to consideration.
- Answers of 3 to 5 sentences are taken in to consideration.
- It will be useful for faculties in quickly assessing the answers.

VI. PROPOSED ALGORITHM FOR THE SYSTEM

Step 1: Start

Step 2: User Login

Step 3: Login Authentication

Step 4: Generation of random questions

Step 5: Read answers from the users

Step 6: Store answers in the database

Step 7: Categorize the answers into **Stopwords** and **Keywords**

Step 8: if stopwords<0 = true then Score=0

     Goto Step 12

    else

     Goto Step 8

Step 9: Stemming of keywords

Step 10: Compute score = score + %match between keywords found and expected

Step 11: Repeat Step 10 for all the answers

Step 12: Compute Total Score

Step 13: Display Total Score

Step 14: End

VII. CONCLUSION

The proposed system is not the final product; it still lacks a lot of constraints without which students could easily get away with not following the proper structure while typing their answers. We would also need to incorporate a tool that would also differentiate between the wrongly spelled keywords and the wrong keywords and deduct marks accordingly.

Hence the said system could be of great utility to the educators whenever they need to take a quick test for revision purpose, as it saves them the trouble of evaluating the a bundle of papers. Also this system totally evacuates any circumstance of biasness.

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