Automatic Answer Sheet Checker

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ABSTRACT

An automating the task of scoring subjective answer is considered. The goal is to assign score which are comparable to those of human score by coupling AI technologies . In this process involves many image level operation i.e. removal of pre-printed matter , extraction and segmentation of words. Scoring is based on machine learning of parameter and natural language processing. System checks answer and score as good as human being. We present an Answer Sheet Checker based on Textual Entailment and Question Answering. The important features used to develop the Answer Sheet Checker System are named Entity Recognition, Textual Entailment, Question-Answer type Analysis and Chunk Boundary and Dependency relations. Separate Answer Sheet Checker modules have been developed for each of these features. We first combine the question and the supporting text to check the entailment relations as either "VALIDATED" or "REJECTED". Once the user enters his/her answers the system then compares this answer to original answer written in database and allocates marks accordingly. The system requires you to store the original answer for the system. This facility is provided by the Admin. The admin may insert questions and respective subjective answers in the system. When a user takes the test he/she is provided with questions and areas to type his answers. The purpose of this system is to automate the old fashioned manual system and introduce automatic evaluation of marks in much faster and accurate way.

Keywords - Data-mining, Stop word Selection, Text Classification, Stemming Algorithm and Stripping Algorithm.

I. INTRODUCTION

The answer sheet is widely used for student performance in exam in school and college .The main approach is to evaluation is efficient and reliable. An automatic answer sheet checker checks the answer sheet and written mark as similar to human being .This software is built to check the subjective answer. The system consist of in build artificial sensor that verify answer and allocate marks according as good as human being accessing large number of handwritten answer sheet is relatively time consuming task there is an intense need of speed up and enhance a process of rating handwritten words while maintaining cost effectiveness .It is relatively inexpensive answer written by hand .The primary means of testing the student on state assessment of reading compression motivation of these system is

mainly always we have seen the online OMR sheet checker or objective answer sheet checker but the main goal is to develop subjective answer checker. Artificial Intelligence is an ability to design smart machines or to develop self- learning software applications that imitate the traits of the human mind like reasoning, problem-solving, planning, optimal decision making, sensory perceptions etc.

Contribution:

In this paper, we proposed the method in which the Examiners get bored by checking many answer sheets, hence the system reduces their workload by automating the manual checking process accurately. The system calculates the score and provides results instantly. It removes human errors that commonly occur during manual checking. The purpose of this system is to automate the old fashioned manual system and introduce automatic evaluation of marks in much faster and accurate way.

Structure:

This paper is organized as follows: Section 2 presents Related Work. Section 3 summarizes our Proposed Work which consists of our base algorithm which presented in [1],[2],[3]. We will evaluate our methods and compare with existing work in Section 4 as Experimental Setup and Results. Finally, in Section 5 we conclude and present suggestion for future work.

II. RELATED WORK

1] "Case Based Modeling of Answer Points to Expedite Semi-Automated Evaluation of Subjective Papers" paper is proposed by Chhanda Roy , Chitrita Chaudhuri. In this paper the primary goal of this paper is to propose a framework, where textual papers set for subjective questions, are supplemented with model answer points to facilitate the evaluation procedure in a semi-automated manner. The proposed framework also accommodates provisions for reward and penalty schemes. In the reward scheme, additional valid points provided by the examinees would earn them bonus marks as rewards.

2] "Automatic answer sheet checker" paper is proposed by Gunjal M.S , Sanap K.N , Sable R.G , Nannaware P.S, Ghuge R.B. In the paper an automating the task of scoring subjective answer is considered. The goal is to assign score which are comparable to those of human score by coupling AI technologies .In this process involves many image level operation i.e. removal of pre printed matter , extraction and segmentation of words. Scoring is based on machine learning of parameter and natural language processing. System checks answer and score as good as human being.

3] "Automatic Answer Validation System on English Language" paper is proposed by Partha Pakray, Santanu Pal, Sivaji Bandyopadhyay. In this paper an Answer Validation System (A V) based on Textual Entailment and Question Answering. The important features used to develop the A V system are Named Entity Recognition, Textual Entailment, Question-Answer type Analysis and Chunk Boundary and Dependency relations. Separate A V modules have been developed for each of these features. We first combine the question and the answer into Hypothesis (H) and the Supporting Text as Text (T) to check the entailment relation as either "VALIDA TED" or "REJECTED". The important lexical features used for the Textual Entailment Module in the present system are: WordNet based unigram match, bigram match and skip-gram. The results obtained from the four answer validation modules are integrated using a voting technique. Evaluation scores obtained on the AVE 2008 test set show 67% precision for "VALIDATED" decisions.

III. PROPOSED WORK

Working:

Online examination is the use of the Internet for examination activities, or we can say, it is the process by which a student learns via the Internet with the help of a subject expert or an examination. How it works? This examination technique involves use of several web- based programs to achieve its goals. Some of these programs or applications are email, an instant messaging, online whiteboards, etc. An automatic answer checker application that checks and marks written answers similar to a human being. This software application is built to check subjective answers in an online examination and allocate marks to the user after verifying the answer. The system requires you to store the original answer for the system. This facility is provided to the admin. The admin may insert questions and respective subjective answers in the system. These answers are stored as notepad files. When a user takes the test he is provided with questions and area to type his answers. Once the user enters his/her answers the system then compares this answer to original answer written in database and allocates marks accordingly. Both the answers need not be exactly same, word to word. The system consists of in built artificial intelligence sensors that verify answers and allocate marks accordingly as good as a human being. The system will consist of the following elements: Login: The proposed system will have two login facility: User login: The user login is the login allocated for the students. As soon as you click the student login button you will be asked to enter login id and password. The system will check for the id and automatically display students name, email id and phone num for verification. The user login will be able to write answers with respect to the question uploaded. The system will show marks scored as soon as you enter the next button Admin login: The admin

login will let the teacher's login. The admin login's each user will have his own password and id through which they can login in. The admin can add subtract questions, check for students marks and so on. Just like the teachers can do manually. Answer checking: Suppose the question is "who is hitler?" Case 1: Was a cruel ruler found the narzi party. In this case the anwer will get 10 points for correct answer Case 2: Was a cruel ruler. Found the BJP. In this case the statement 1 is right and 2 is wrong so will be given 5 points out of 10 as only half of the answer is correct. Thus depending on answers the points of the answers will be set by the admin.

Fig 1. Activity Diagram for Admin and Student.

Proposed Algorithm:

1] Key word search algorithm: A search algorithm is an algorithm that retrieves information stored within some data structure. Data structure can include linked list, array, search tree, hash table or various other storage methods the appropriate search algorithm often depends on the data structure being searched. Searching also encompasses algorithm that query the data structure such as SQL SELECT command. Search algorithm can be classified based on their mechanism of searching. Linear search algorithm

check every record for the one associated with target key in a linear fashion. Binary search repeat target the center of the search structure and divide the search & digital search algorithm. Hashing directly maps keys to record based on a hash function. searches outside of a linear search require that the data be sorted in some way. Search functions are also evaluated on the basis of their complexity or maximum theoretical runtime. Keyword search: Keyword search is the most popular information discovery method because the user does not need to know either a query language or the underlying structure of the data. The search engine are available today provide keyword search on top of sets of document when a set of keyword is provided by the user search engine return all document that are associated with these keywords. Typically two keyword & a documents are of associated with keywords are contained in the document & their degree of associatively is often distance from each other. Keyword research is a practices search engine optimization professionals use to find & research actual search terms that people enter into search engine optimization professional research keyword which they use to achieve better ranking in search engines.

2] Stemming Algorithm: It is the process for removing the commoner morphological & in flexional ending from words in English. It is main use is as part of a term normalization process that is usually done when setting up information retrieval system. Stemming refers to the process of removing affixes (prefixes & suffixes) from words. In the information retrieval context, stemming is used to conflate word from to avoid mismatches that may undermine recall. As a simple example consider searching for a document entitled "How to write" if the user issues the query "writing " there will be no match

with the title .however if the query is stemmed so that "writing "becomes "write" then retrieval will be successful. Stemming is the process of finding the route word.

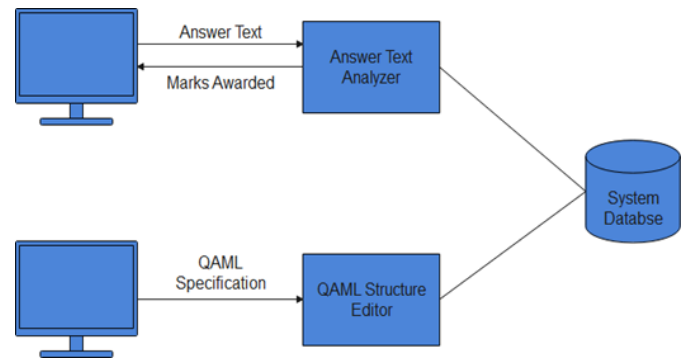Given below is the System Architecture of this Automatic Answer Sheet Checker:

Fig 2. System Architecture
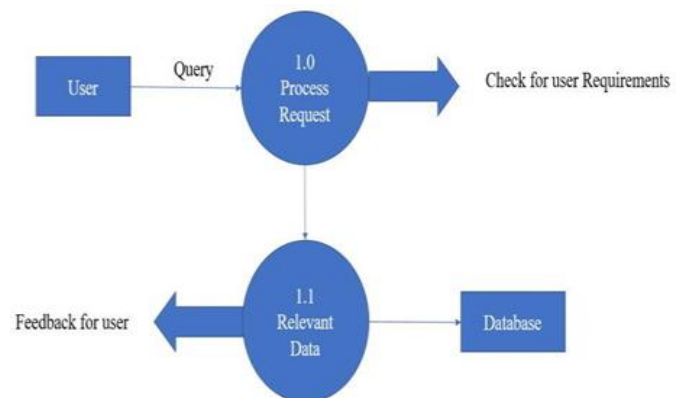
DATA FLOW DIAGRAM
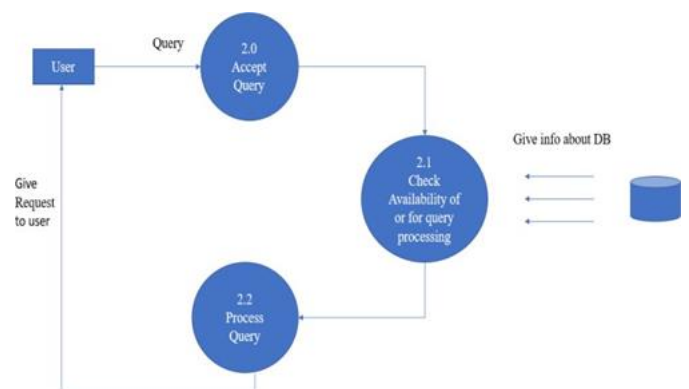

Fig 3. DFD Level 1

Fig 4. DFD Level 2

IV. Experimental Evaluation

Based on the databases, Artificial Intelligence needs to be installed. Incorporating AI into complex systems poses numerous challenges to traditional test and evaluation methods. As AI handles varying decision levels, it needs conference to ensure testable, repeatable and auditable decisions. Additionally, we need to understand failure modes and failure mitigation techniques. The key challenges embedded-AI exacerbates, the themes based for how traditional and evaluation will evolve to provide AI system assurance.

Result:

The current manual evaluation takes about 60 seconds to evaluate an answer whereas the proposed system takes about 15 seconds to evaluate an answer. The proposed system is 300% more time efficient as compared to manual answer evaluation system. The proposed system is about 75 - 87.5% accurate with comparison to manual system. The proposed system completely eliminates the human effort and time to evaluate an answer.

Proposed system can evaluate 5760 answers in a day where as a human working for 8 hours can evaluate 480 answers a day . Hence, proposed system can evaluate 1100% more answers compared to that of manual evaluation system.

V. CONCLUSION

In this paper an attempt has been taken to present an analysis and survey on AUTOMATIC ANSWER CHECKER and important protocols proposed by researchers with their Answer sheet checking. This System calculates the score and provides results instantly for descriptive answers. This System is design to reduce the burden of checking the papers manually.

VI. REFERENCES

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