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STUDENTS ANSWER SCRIPT EVALUATOR

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ABSTRACT

Evaluation of answer scripts automatically has been found very useful from our experiments, and often the assigned marks is the same as manually scored marks. Now this system propose a new model using advanced machine learning techniques and natural language processing-based method is shown for automatic answer script evaluation. The answer script evaluation is an important part of assessing students' performance. The evaluation depends on various factors like mood swing of the evaluator, the inter-relation between the student and evaluator. It is also a time-consuming task. Our experiment consists of text extraction from answer script, i.e. scanning the answer scripts of students, then handwritten words are recognized using Tesseract OCR with Python, then match the handwritten words with the keywords in python code, measuring various attributes between summarized extracted text and stored correct answers, and then assign a value to calculated attributes to score the answer script.

For summary generation from the extracted text, we have used keyword-based summarization techniques used for generating the final mark.. The process of generating new model for evaluation involves supervised learning method.

Keywords: OCR(Optical Character Recognition), Tesseract in Python, Natural Language Processing, Summary Generation,Automated Evaluator.

1. INTRODUCTION

There are various assessment strategies that are used to evaluate a student's performance. The most widely used technique is a descriptive question answering. In this technique, a student expresses his/her opinion in response to the question in a long textual way. The automatic answer evaluation system will be very cooperative for various universities and educational institutions to assess a student's performance very effectively.

A student may answer a question by following different grammatical styles, and chooses different wordssimilar to the actual

answer. The motivation behind the automated answer script evaluation comes from less time consuming, less manpower involvement, prohibiting human evaluator's psychological changes, and very easy to keep record and extraction. It also assures that mood swings or change in perspective of human assessor will not affect the evaluation process.

Time delay that is involved in current evaluation system. Manual evaluation by the evaluator takes longer time for evaluation. There are also chances of having biasness among different students in the evaluation system. Manual Evaluation is more prone for totalling error, wrong marking of mistake. Lot of time and money is spent for evaluation process.

The summary generation is a process of creating a short, accurate summary of the text. It is very time wasting task to generate a summary of longer article manually. Hence an NLP-based automatic summary generation technique is used to facilitate and speed up the text processing. Two types of text summary generation techniques are used for generating the summary.

The extractive summary generation technique is used to select phrases and sentences from the source document, and generates a new summary . The abstractive summary generation technique is the opposite of extractive method. It generates entirely newphrases . The NLP-based strategies are verywell suited for generating summary. The summarized text will be fed as input to compute various similarity measures.

2. OBJECTIVES

This article provides the information on following topics

- ❖ Building an efficient system that will evaluate broad question answer script automatically.
- ❖ Providing the facility of open and close domain question Answer keys.
- ❖ Providing an improved system for evaluation.

3. AUTOMATIC EVALUATION

Automatic evaluation focuses on analysing text b tokenizing the text into words and remove un necessary words such as stop words. Lemmatizing the words and removing duplicate words. Then, comparing the answer key with the answer script of the student.

4. AUTOMATIC EVALUATION VERSUS MANUAL EVALUATION

The automatic descriptive answer evaluation system will be very cooperative for various universities and educational institutions to assess a student's performance very effectively . A student may answer a question in different grammatical styles, and chooses different words similar to the actual answer. Manual Evaluation assures that mood swings

orchange in perspective of the human assessor will not affect the evaluation process.

4. RECOGNISE TEXT FROMTHE HANDWRITTEN DOCUMENT

OCR technology that enables us to convert different types of documents such as scanned paper documents, PDF files or images captured by a camera into editable and searchable data.

Here, Tesseract has been chosen because of its extensibility and flexibility, its community of active developers, and the fact that it works for all. To perform the character recognition, our application has to go through three important steps. The first is Segmentation. The second step is feature extraction. The final task is classification.

5. PREPROCESSING ANSWER KEY AND ANSWER SCRIPTS

Data pre-processing is a significant advance in the data mining process. The expression "trash in, trash out" is especially relevant to data mining.

Data gathering strategies are regularly almost controlled. On the chance that there is many unimportant and excess data present in the text document, at that point data disclosure during the preparation stage. Data readiness and shifting steps can take several handling times. Data pre-processing incorporates instancedetermination, cleaning, highlight extraction, standardization, change, and choice, and so on. The result of data pre-processing is the last preparing set. Data pre-processing may influence how the results of the last data preparation can be done.

5.1. LINGUISTIC ANALYSIS

Linguistic analysis checks spelling and grammar in our projects. These are powerful grammatical correction tools which understands the meaning and context accurately of text.

6. ANALYZING THE ANSWER TEXT WITH THE ANSWER KEY

Our proposed system will focus on open domain and closed domain system after extracting the keyword from the question then the system will parse data from the open domain like Google.

System has the immensely built-in function to deals the text pre-processing by typing fewer commands. An NLTK built-in function word tokenize is used to split the text into word and store in a list. The most important text analysing step is filter out the useless word.

7. ASSIGNING MARKS

Our evaluation system proposes marks based on the analysis of both answer key and answer text.

Here, we consider some attributes for marks scoring such as spelling mistakes and grammatical mistakes.

8. SURVEY ANALYSIS

Table.1 Answer Script Evaluator

PARTICULARS	TOTAL NUMBER OF RESPONDENTS	%
Highly Satisfactory	5	25%
Satisfactory	12	65%
Averagely Satisfactory	3	10%
Dissatisfactory	0	0
Highly Dissatisfactory	0	0
Total	20	100

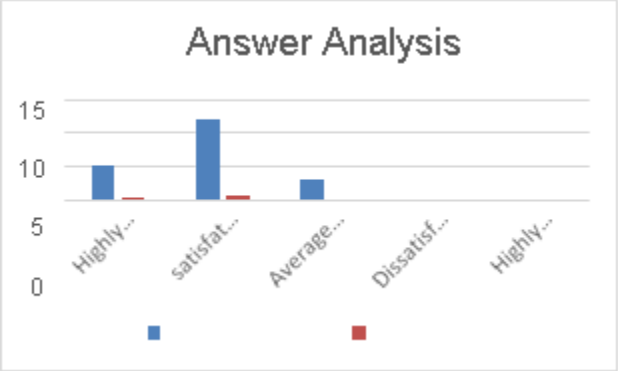

Figure 1: Answer Script Evaluator Results

The total sample size of 20 as been taken for this study. The samples are selected on the basis of convenient.Inference: From the above table 25%of the students are highly satisfied, 65% of thestudents are satisfied, 10% of the students are averagely satisfied.

9. RESULT

65% of the respondents are satisfied with the Automatic answer Script Evaluator.

10. CONCLUSION

In this experiment, a method is used for Automatic Answer Script Evaluator. Initially, Handwritten document is recognised by OCR(Tesseract).Then, Answer script is analysed with the answer key.

Based on the measures of similarity marks is assigned for answer scripts.

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