

Machine Learning based an Adaptive Approach for Subjective Answer Evaluation

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ABSTRACT

In the current context, examinations can be categorized into two distinct types: objective and subjective. Competitive exams typically fall under the multiple-choice question format, necessitating their administration and evaluation on computer screens. Presently, the majority of competitive exams are conducted online due to the substantial number of students participating in them. However, subjective exams, such as board exams, cannot be effectively conducted using computers. Consequently, the integration of Artificial Intelligence (AI) into our online examination systems becomes imperative. By implementing AI in the conduction of online exams, the assessment of subjective answers would be greatly facilitated. Additionally, this approach would yield results with enhanced speed and accuracy. Our proposed system would be meticulously designed to emulate the marking process employed by human evaluators. Consequently, this system would prove invaluable to educational institutions.

Keywords - Automated response verifier, response verifier, theory responses checker, matching responses.

I. INTRODUCTION

In the contemporary era, numerous methods are employed for conducting examinations, encompassing online, MCQ type, and OMR sheet exams. These diverse assessment formats are administered on a daily basis worldwide. The pivotal element of any examination lies in the evaluation of students' answer sheets. Traditionally, this task is performed manually by teachers, which can become arduous when dealing with a substantial number of students. Consequently, automating the answer checking process would undoubtedly yield significant benefits.

Automating the process of checking answers would not only alleviate the burden on the examiner, but it would also enhance the transparency and fairness of the evaluation process by eliminating any potential biases from

the teacher's perspective. In the present era, numerous virtual tools are accessible for evaluating multiple-choice questions; however, there is a scarcity of tools designed to evaluate subjective answer-based examinations.

This project endeavors to utilize machine learning to facilitate the adaptive approach for subjective answer evaluation. The resulting product can be implemented in various educational institutions to streamline the grading process. With further enhancements, the product can even be utilized for conducting online theory examinations. Upon launching the product, the user will be presented with two options: to login as an admin/College faculty member or a student. After selecting their preferred option, the application user will be prompted to enter their correct login credentials. The college Faculty member will be granted access to features such as to upload question paper and reviewing student answer sheet, while the student will be provided to upload their answer sheet and view their allotted marks in real-time.

II. LITERATURE SURVEY

SCENARIO

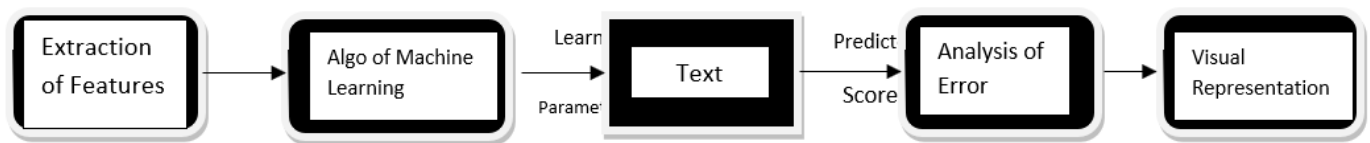
Competition among individuals has significantly intensified in contemporary society. The escalating global population has contributed to the prevalence of competition, as individuals aspire to achieve their desired lifestyles. The desire to outperform others has become a common aspiration. Limited resources, particularly job opportunities within the professional realm, further fuel this heightened competition. The journey of competition commences during one's educational years, spanning from schools to colleges. Academic superiority is determined by examination results, serving as the benchmark to distinguish the most intellectually accomplished student. Various forms of examinations are conducted worldwide, including online examinations, multiple-choice question (MCQ) examinations, and optical mark recognition (OMR) based examinations.

The subsequent segment of the examination, commonly referred to as the pivotal phase, encompasses the evaluation process. The aforementioned examinations are assessed through either manual or automated means. Another significant form of examination is subjective in nature, predominantly comprising theoretical components. The evaluation of such examinations can prove to be arduous and monotonous for the examiner, particularly when confronted with a substantial number of students. The proposed application aims to address this predicament by automatically scrutinizing the students' answer sheets.

III. DATA COLLECTION

Data collection refers to the systematic procedure of acquiring and subsequently quantifying information in relation to the desired modifications within a firmly established framework. This process enables individuals to assess the prevailing circumstances and seek solutions to specific pertinent inquiries. Data collection is an integral component of research, permeating various fields of study, including the physical and social sciences, business, and humanities. The primary objective of this practice is to amass reliable and substantial evidence, thereby facilitating the development of definitive responses to the posed questions. It is noteworthy that the data utilized in this project has been generated from inception.

SYSTEM ARCHITECTURE



ALGORITHM

Step I : Start

Step II : Primary Window/Page Opens

Step III : Login into the project as Admin/Faculty Member or a User/Student. If client login as Student go to the step IV , if client login as an Admin/Faculty Member go to step VIII.

Step IV : Student window page opens.

Step V : download the available subject question paper or can also view.

Step VI : upload the sheet of answers.

StepVII : submit to view the marks.

Step VIII : Admin/Faculty window page opens.

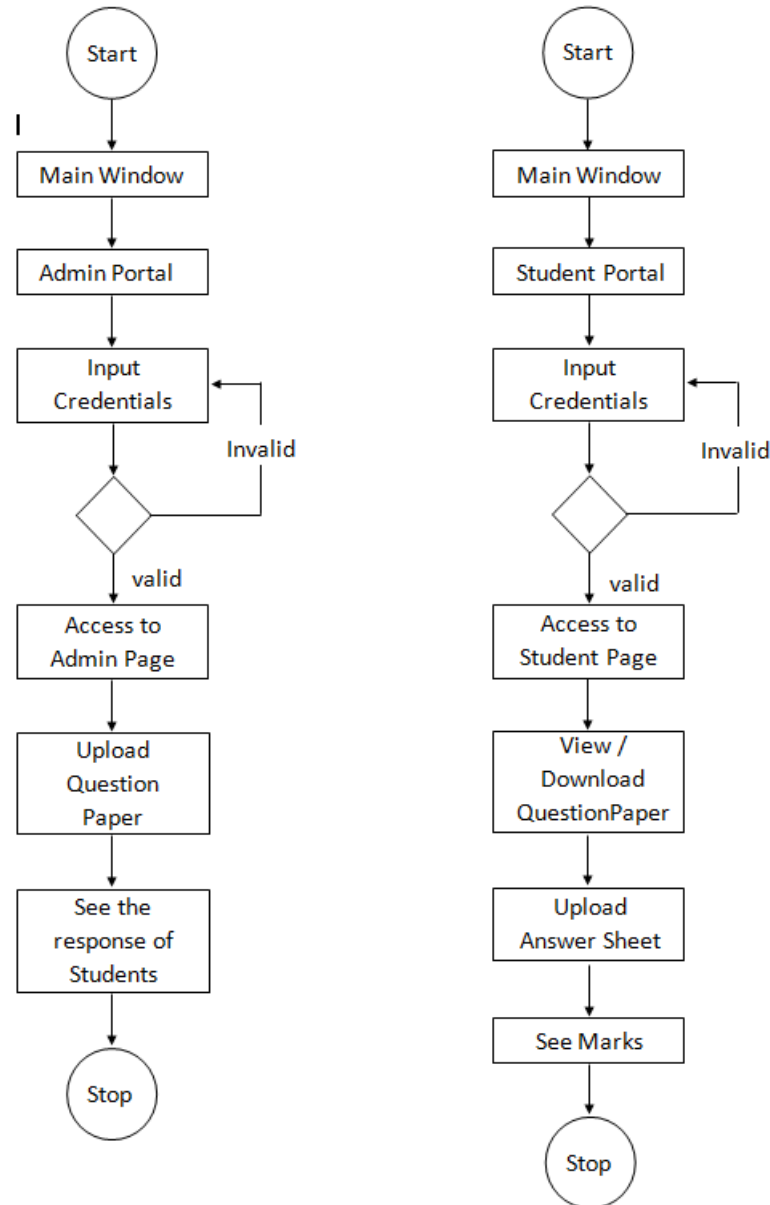
Step IX : upload the question sheet for student.

Step X : View student reponses.

IV.FUTURE SCOPE

In this system, the removal of notations and symbols during pre-processing facilitates the overlapping of text. However, this pre-processing also eliminates crucial symbols and features in the context of mathematical problems. Consequently, the system's performance is subpar when it comes to mathematical questions compared to textual format questions. This system can be effectively employed by educational institutions to evaluate students' term work, alleviating the arduous task of manually checking each student's work for teachers. In future developments, it is imperative for the system to possess the capability to assess mathematical content and provide corresponding scores.

FLOW CHART



V. CONCLUSION

The project, titled "Machine Learningbased on an adaptive approach for subjective answer evaluation", is a virtual platform that will be used for theory-based question examinations. The application possesses a distinctive characteristic of robustness, which allows for numerous possibilities for enhancing its functionality in the foreseeable future. Subsequent efforts will involve the development of an algorithm aimed at assessing and identifying syntax errors within our keywords. Further investigation will be conducted to ensure optimal performance and equality in addressing these errors.

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