QUESTION PAPER CHECKING USING GENERATIVE AI

*Divekar Nikhil, **Kakade Komal, ***Karale Sumit, ****Pandarkar Sakshi, *****Prof. Bhosale S. S.
Department of Computer Engineering, HSBPVT's Faculty Engineering, Kashti.

Abstract: In the present era, the world is moving towards computerization. Everything is made easy so, automatic answer sheet checker is required. Checking the answer sheet manually takes a lot of time and energy. The application in this project is based on verification or evaluation of answer sheet using ML and AI. The main objective of this project will be to save time and manpower. An automated answer checker app that checks and marks answers just like a human. This software application is designed to check the answers in the exam and allocate marks to the students after verifying the answers. The system requires teachers to store the original answer for the system. This facility is provided to teachers. Teachers can enter questions and related subjective answers into the system. These responses are stored as database files. The first answer is captured in PDF form and then compares this answer with the original answer written in the database and allocates marks accordingly. The total marks are calculated and the result is finally shown. The system allocates marks according to how good a student is.

Keywords: *Automatic Answer Checker, ML, AI, Java, My SQL.*

I INTRODUCTION

There are many ways of conducting exams in today's world. Every day, various examinations are carried out all over the world. The most important aspect of any exam is checking the student's answer sheet. This is usually done by the teacher manually, so it is very tedious work if the number of students is very large. Traditional methods of marking and grading written questions can be time-consuming, error-prone, and subject to bias. In such a case, automating the response checking process would definitely prove to be very useful. Automating the answer checking process would not only make it easier for the examiner but the checking process would also become much more transparent and fair as there would be no possibility of bias on the part of the teacher. Currently, there are various online tools available for reviewing multiple choice questions, but there are very few tools for reviewing long answer type exams. This project aims to review long answer type exams by implementing machine learning and artificial intelligence. This application can be used in various educational institutions to check subjective answer type exams. This project aims to change the assessment process, making it more efficient, accurate and unbiased.

II LITERATURE REVIEW

Automatic answer checking based on machine learning that mimics the human way of checking answers:
In today's world, the competition between people has increased significantly. With the growing population of the wo rld, competition among people is seen everywhere as everyone wants to live the life of their dreams. Everyone wants to be better than others. Another big reason for this increased competition is limited resources, especially jobs if we l imit the focus of our studies to the professional world. This competition starts in a person's life from schools and coll eges. The criteria for deciding who is academically better than others is decided by examinations in schools and coll eges. The person who achieves the highest marks is considered the most intelligent student, as simple as that. There are a number of types of examinations that are carried out around the world. Some types are online exam, mcq type exam, omr based exam. Another part of the exam, and it can also be called the most important part of the exam, is its evaluation process. All the above examinations are evaluated either manually or in an automated form. Another imp ortant type of examination is subjective examination. Subjective exams are those that consist mostly of theory. Gradi ng such exams can be tedious and boring for the examiner, especially when the number of students is quite large. Th e presented application intends to solve this problem by automatically checking the student's answer sheet.

Automatic response check:

An auto answer checking app that checks and marks answers like a human being. This software application is design ed to check the subjective answers in the exam and assign marks to the user after the answer is verified. The system requires saving the original response for the system. This option is provided by the administrator. Admin can enter q uestions and relevant subjective answers into the system. These responses are stored as database files. When a user t akes a test that is equipped with questions and an area to mark the answers. Once the user enters the answers, the sys tem compares that answer with the original answer entered in the database and assigns marks accordingly. The syste m assigns marks accordingly as good as a human.

An online system for verifying subjective answers using artificial intelligence:

Online Subjective Answer Verification System Using AI:
Authors: Jagadamba G, Chaya Shree G.
Organizations/Educational Institutes are always dependent on the system of evaluation through examinations. Howe ver, most examinations are objective. These systems or any other such system is preferable in terms of saving resour ces but it has faild
include subjective questions [1, 9, 10]. This article attempted to evaluate the descriptive response. The evaluation is done by means of a graphical comparison with the standard response

Evaluating subjective responses using machine learning and natural language processing (2021):
Authors: Hamza Arshad, Abdul Rehman Javed.
In the past, various methods were used for the subjective evaluation of answers and their shortcomings were observe d. In this paper, we propose a new approach to solve this problem, which is to train a machine learning classification model using the results obtained from our result prediction module, and then use our trained model to reinforce the r esults from the prediction model, which can lead to a fully trained machine learning.
Tool for Subjective Response Evaluation Using AI(TESA):
Authors: Shreya Singh, Omkar Manchekar, Ambar Patwardhan All studies reviewed show that there are
various different techniques for scoring subjective answer sheets. The advantage of the system is that it uses a weigh ted average of the techniques closest to the exact ones
to provide the most optimal result. TESA is systematic and
a reliable system that facilitates the role of evaluators and provides faster and more efficient outputs.
ASSESS – Automated subjective evaluation of answers using
Semantic learning:
Authors: Nidhi Dedhia, Kunal Bohra, Prem Chandak
This automated approach is convenient when students need it
be judged online for yourself, improvement. This system places special emphasis on the specially-abled by providin g various speech-based usability features where the gaps are filled by providing audio devices such as listening to qu estions and oral answering. The advantage of this system is that it is almost complete, has improved performance an d caters to a very wide audience.

Automatic response check:
Authors: Vasu Bansal, M.L. Sharma,Krishna Chandra Tripathi
The proposed system could be very useful for educators whenever they need to conduct a quick test for revision pur poses as it saves time and effort to evaluate the packet
documents. This system would be beneficial for universities,
schools and colleges for academic purposes by providing ease
faculties and examination assessment cell.
Online check of subjective answers:
Authors: Merien Mathew, Ankit Chavan, Siddharth Baikar
The project report titled “Online Subjective Check of Answers” has been prepared with great care to make it error-fr ee and at the same time efficient and less time-consuming. The important thing is that the system is robust. A reserv e is also provided for future development of the system. The entire system is secured. This online system will be app roved and implemented soon.

III WORKING OF PROJECT

An automatic answer checker is an application that helps in checking the answer sheets submitted by the student in a similar manner as a human being. This application has been built with an aim to check the long answer type questions and then allot marks to the students after performing the verification of the answers. To carry out the whole operation, it is required by the user to store the answers of the questions so that the application can cross verify the answers from the answer sheet.

Fig. Working of Project

Answer sheets are collected and digitized. The AI system processes the data, mapping answers to questions. Scoring criteria is used to understand and evaluate responses. Machine learning models assign scores based on criteria. Scores are generated. Reports are generated and data is stored for analysis.
The AI system learns and improves over time.

IV PROPOSED SYSTEM

An automatic answer sheet checking system is a software that can evaluate and grade answer sheets from exams without the need for a human to do it manually .
Answers written on the paper, comparing them to the correct answers, and then assigning a score to each question or the entire test.
This system can save time and reduce the potential for human error in the grading process.

The process of checking answer sheets using generative AI involves the following steps:
1. Data Collection: Gather a large dataset of annotated answer sheets, including both correct and incorrect answers. This dataset is used to train the generative AI model.
2. Model Training: Train a generative AI model, such as a language model, using the collected dataset. The model learns to generate answers based on the patterns and information in the training data.
3. Answer Generation: When an answer sheet is submitted for checking, the generative AI model takes the questions and answers as input and generates a response. It can also provide explanations for its generated answers.
4. Comparison: The generated answers are compared to the expected correct answers. This step may involve natural language processing techniques to assess the similarity and correctness of the generated responses.
5. Evaluation: The system evaluates the accuracy of the generated answers and assigns a score based on how well they match the correct answers. Additionally, it can provide feedback on the student's performance.
6. Feedback and Reporting: The system can generate a report or feedback for each student, indicating the correctness of their answers, areas of improvement, and overall performance.
7. Continuous Improvement: The generative AI model can be fine-tuned and improved over time with additional data and feedback from educators to enhance its accuracy and effectiveness.

V ALGORITHM

Step 1: Start
Step 2: Main window opens
Step 3: Login as Teacher or a Student If user logins as a Student, go to step 4 If user logins as a Teacher, go to step 8
Step 4: Student window opens

Step 5: View / download question paper
Step 6: Upload the question paper
Step 7: Click see marks button
Step 8: Teacher window opens
Step 9: Upload answer sheet.
Step 10: See responses of students

VI TECHNOLOGY

We are using MY SQL as our database and for backend scripting. We use Java for developing this Application.
1)My SQL is a open source relational database management system (RDBMS). It uses the My SQL (Structured Query Language) queries for data accessing. It is the famous language for accessing and managing the data in the relational database.
2) My SQL Structured query language (My SQL) is a language used to get the data from the database.
3) Programing language Java using web application.
4) HTML, CSS, JS.

VII FLOWCHART

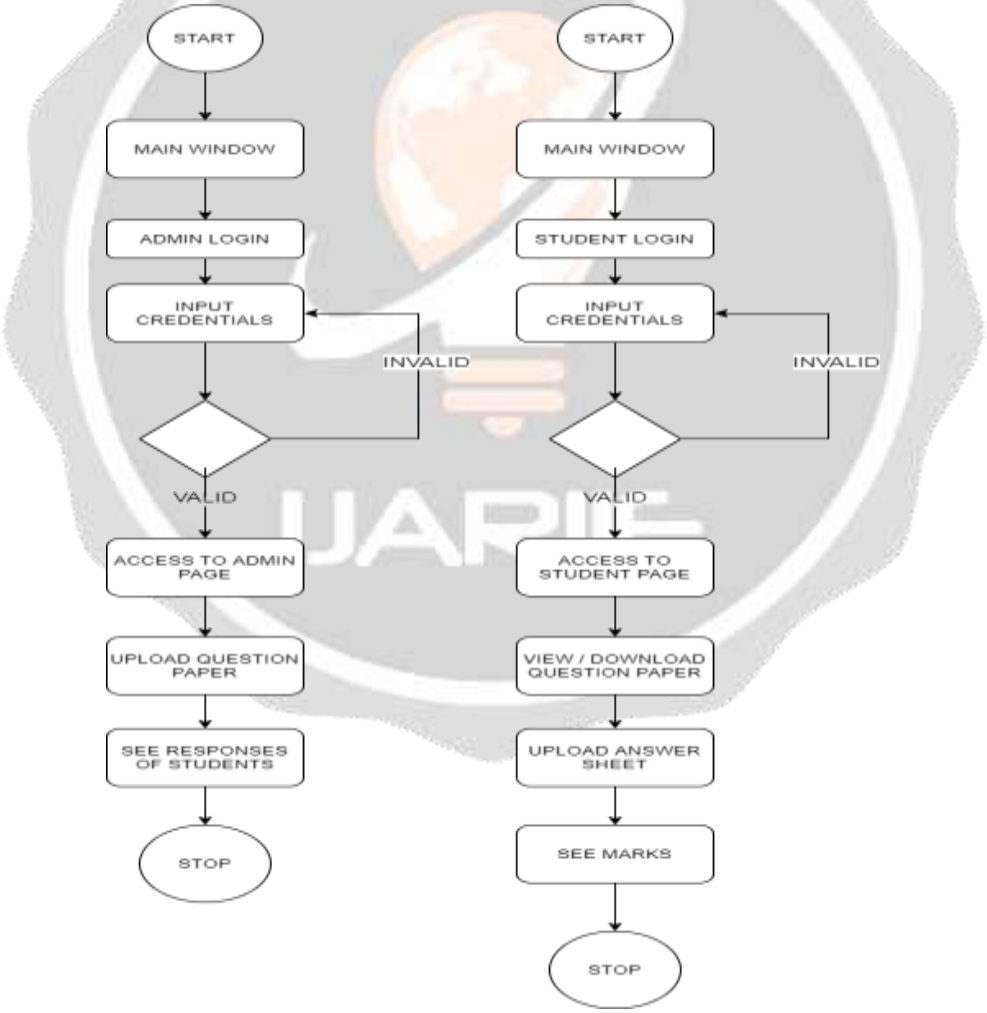

Fig. Flowchart

VIII ADVANTAGES

Using generative AI for question paper checking can offer several advantages, potentially revolutionizing the

traditional assessment process in education. Here are some of the key advantages:

Time Efficiency: AI-based systems can quickly analyze and evaluate a large volume of answer sheets, significantly reducing the time required for grading compared to manual assessment.

Consistency and Standardization: AI-based systems provide a consistent and standardized approach to grading, minimizing the potential for subjective biases often encountered in human-based evaluations.

Scalability: Generative AI allows for the scalability of the assessment process, enabling educational institutions to handle a large number of assessments efficiently, especially in cases of mass examinations.

Immediate Feedback: AI-powered systems can offer immediate feedback to students, enabling them to identify their mistakes and areas for improvement promptly, facilitating a more dynamic learning process.

Objective Evaluation: AI-based systems assess answers based on predefined criteria, ensuring an objective evaluation that adheres strictly to the grading rubric and eliminates any potential favoritism or personal biases.

Enhanced Learning Analytics: By analyzing the data collected during the assessment process, AI systems can provide valuable insights into student performance, identifying common areas of difficulty and helping educators tailor their teaching strategies accordingly.

Reduced Workload for Educators: Automating the grading process can alleviate the burden on educators, allowing them to focus more on developing innovative teaching methodologies and providing personalized guidance to students.

Adaptive Testing and Personalization: Generative AI can facilitate adaptive testing, tailoring the assessment to individual student capabilities and learning styles, thereby promoting a more personalized learning experience.

Cost-Effectiveness: While the initial investment in implementing AI systems might be substantial, the long-term cost savings resulting from reduced manual grading and increased efficiency can be significant for educational institutions.

Evolving Educational Practices: Integrating AI in question paper checking encourages the integration of technology in education, fostering an environment that promotes digital literacy and prepares students for a tech-driven future.

IX CONCLUSION

We concluded that while generative AI can offer various applications in the context of question paper checking, it is important to recognize its limitations and use it as a complementary tool rather than a complete substitute for human judgment. Its potential lies in automating routine tasks, providing standardized assessments, detecting plagiarism, and offering personalized feedback to students. However, it may struggle with subjective evaluations, lack contextual understanding, and exhibit biases present in the training data. Integrating generative AI into the education system can enhance efficiency, provide valuable insights, and support educators in offering a more personalized learning experience. Yet, the role of human expertise remains indispensable in ensuring fairness, contextual understanding, and holistic evaluation, emphasizing the importance of a balanced approach that combines the strengths of both AI and human educators.

X REFERENCES

[1] Vishwas Tanwar, Machine Learning based Automatic Answer Checker Imitating Human Way of Answer Checking, International Journal of Engineering Research & Technology (IJERT) ISSN: 2278-0181 Vol. 10 Issue 12, December-2021.
[2] Ronika Shrestha, Raj Gupta, Priya Kumari, Automatic AnswerSheet Checker.
[3] Prof. Priyadarshani Doke, Priyanka Gangane, Kesia S Babu, Pratiksha Lagad, Neha Vaidya, Online Subjective Answer Verifying System Using Artificial Intelligence, Ijraset Journal for Research in Applied Science and Engineering Technology.

[4] Yang-Yen Ou∗, Shu-Wei Chuang, Wei-Chun Wang, and Jhing-Fa Wang Automatic Multimedia-based Question-Answer Pairs Generation in Computer Assisted Healthy Education System 2022 10th International Conference on Orange Technology (ICOT).
[5] Jinmeng Wu, Fulin Ge, Pengcheng Sh, Lei Ma, Yanbin Hao Question-Driven Multiple Attention (DQMA) Model for Visual Question Answer 2022 International Conference on Artificial Intelligence and Computer Information Technology (AICIT).
[6] S.Lakshmipriya, Automatic Answer Checker, IJSRD - International Journal for Scientific Research & Development| Vol. 8, Issue 3, 2020.
[7] S.Nahida, Automatic Answer Evaluation Using Machine
Learning, Dogo Rangsang Research Journal, Issn : 2347-7180
[8] Piyush Patil, Sachin Patil, Vaibhav Miniyar ,Amol Bandal, Subjective Answer Evaluation Using Machine Learning, International Journal of Pure and Applied Mathematics
[9] Merien Mathew, Ankit Chavan, Siddharth Baikar, Online Subjective Answer Checker, International Journal of Scientific & Engineering Research.
[10] Vasu Bansal, M. L. Sharma, Krishna Chandra Tripathi, Automated Answer-Checker, International Journal for Modern Trends in Science and Technology.