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Automated Project Evaluation System

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***Abstract*— In colleges, project evaluation is an important part of academics because it helps in checking students' practical knowledge, skills, and understanding of the subject. But in many cases, project checking is done manually, which takes a lot of time and sometimes creates confusion in marking. Different evaluators may give different marks for similar work, so the process may not always be fully fair and consistent. To reduce these problems, we developed an Automated Project Evaluation System. This system helps students to submit their projects online and allows evaluators to check them in a proper and organized way. The projects are evaluated on different parameters such as functionality, code quality, documentation, innovation, and performance. After evaluation, the system automatically calculates the marks and shows the result. The main purpose of this system is to make the project evaluation process easy, fast, and systematic. It also helps in reducing manual work and storing all project details in one place. This system can be useful for colleges and educational institutes where a large number of student projects need to be managed and evaluated properly.**

Keywords*— *Automated project evaluation, online project submission, project assessment, evaluation system, code quality, documentation, fair evaluation, result management.

I. Introduction

Evaluating student projects can take a lot of time in many colleges, and the results are not always consistent because different evaluators may give different marks for similar work. This can make the process slow and sometimes unfair for students. An Automated Project Evaluation System is designed to solve these problems by making the submission and evaluation process faster, easier, and more organized. With this system, students can submit their projects online, which reduces errors and makes it easier to manage a large number of submissions. The administrator can assign projects to evaluators based on their subject or availability, ensuring that the workload is balanced. Evaluators then check each project using specific criteria such as functionality, code quality, documentation, creativity, and innovation. Marks are calculated automatically, which helps make the evaluation fair and consistent for all students. Some parts of the evaluation, such as project demonstrations, complex reports, or additional tables, still need to be handled by the evaluators manually. However, the system provides all the necessary formats and structures to make this easier. All project submissions, evaluation details, and results are stored in a single, centralized database. This allows students to see their results quickly and helps administrators manage the evaluation process more efficiently. By using this system, institutions can save time, reduce mistakes, and make the evaluation process more organized and transparent. Students receive feedback faster, evaluators have clear criteria for assessment, and administrators can maintain proper records. Overall, the Automated Project Evaluation System helps educational institutions manage project evaluations more effectively while ensuring fairness, accuracy, and efficiency.

II. Literature Survey

The evaluation of student projects is an essential component of educational assessment, but traditional manual grading is often time-consuming and prone to inconsistencies. To address these challenges, several studies have explored automated project evaluation systems.

Patel and Desai [1] proposed an Automated Project Evaluation System for educational institutions, which streamlines project submission and assessment by providing a structured digital platform. This system reduces manual workload and improves grading consistency, though it primarily focuses on basic project metrics without incorporating advanced analytics.

Sharma and Dixit [2] developed an online project assessment system that allows students to submit work digitally and receive automated feedback. While effective in improving accessibility and record-keeping, the system does not integrate advanced AI-based evaluation or realtime reporting features.

Song and Wahid [3] introduced a web-based platform for automated evaluation of student projects. Their system emphasizes usability and scalability, enabling instructors to manage large volumes of submissions efficiently. However, it still relies on predefined scoring criteria and does not incorporate intelligent analysis of project quality.

Fleckenstein, Keller, and Braun [4] investigated digital platforms for automated academic assessment, highlighting the importance of integrating analytics and reporting tools to provide actionable insights for educators. Their work emphasizes the potential of automation to enhance decision making in academic evaluation but is largely conceptual and less focused on practical deployment.

Ogorodova, Ivanov, and Petrov [5] presented automated systems for project evaluation in higher education, emphasizing the role of AI and algorithm-driven scoring to improve fairness and consistency in grading. Their research demonstrates how intelligent evaluation can handle diverse

project types but requires careful system calibration and validation. time municipal alerts into a single production eady platform. The proposed system addresses this gap comprehensively.

III. Proposed Methodology

A. System Architecture

The proposed system follows a three-tier client-server architecture: (i) User Application Layer— Developed using JavaScript, this layer provides a web interface for students to submit projects, upload files, and enter project details such as title, description, and tags. It ensures ease of use and accessibility across devices (ii) Backend Processing Layer— Implemented in Java, the backend handles project storage, automated evaluation, and scoring. This layer incorporates modules for plagiarism detection, AI-based assessment, and data management to maintain accuracy and consistency in evaluation. and (iii) Administrative Dashboard Layer— A secure dashboard enables administrators and evaluators to manage submissions, assign projects, monitor progress, and review results. The interface also provides analytics and performance summaries for informed decision-making.

B. Working of the System

The working process of the system is explained below: Step 1: Registration and Login— First, users register themselves in the system. After registration, they can log in using their credentials. Step 2: Project Submission— After logging in, students can submit their project by uploading the necessary files and entering project details such as project title, description, and category. Step 3: Project Assignment— The administrator checks the submitted projects and assigns them to the evaluators. Step 4: Project Evaluation— The evaluator checks the project and gives marks on the basis of: Functionality, Code Quality, Documentation, Innovation, Performance. Step 5: Mark Calculation— Once the evaluator enters the marks, the system automatically calculates the total score. Step 6: Result Display— Finally, the result is shown to the student through the system dashboard.

IV. Experiment Result

After implementing the system, it was tested using sample student projects to check how it performs. The system was able to handle project submission, assignment, and evaluation without any major problems. Students were able to upload their projects easily, and the data was stored correctly in the database. The admin could manage the submissions and assign them to evaluators without confusion. On the evaluator side, the projects were displayed properly. The evaluator was able to check the projects and give marks based on parameters like functionality, code quality, documentation, and innovation. The marks were entered without any issue. Once the evaluation was completed, the system calculated the final score automatically. The result was generated quickly, and students were able to view it through their login. While testing, I noticed that the system reduces manual work and saves time. It also helps in keeping the evaluation process more organized since everything is done in one place. At the same time, there are a few things that can be improved. For example, the system can be enhanced by adding more evaluation parameters or using advanced techniques for better accuracy. It can also be improved by making the interface more user-friendly.

TABLE 1

Parameter	Description	Max marks
Functionality	How well the project meets the requirement	20
Code quality	Readability, structure, and maintainability of code	20
Documentation	Completeness and clarity of report	15
Innovation	Originality and uniqueness of ideas	15
Performance	Efficiency and correctness of Project execution	20

V. Scope and Application

The Automated Project Evaluation System (APES) is designed to provide a systematic and standardized framework for academic project assessment. The system covers the entire evaluation process, including project submission, evaluation, automated score calculation, and feedback generation. It is applicable to a wide range of projects, including individual and group submissions, coding assignments, research reports, and presentations. APES applies predefined evaluation criteria such as functionality, innovation, documentation quality, code performance, and overall effectiveness to ensure consistent and objective assessment. The system is scalable, capable of managing large volumes of submissions without compromising accuracy or efficiency. Integration with institutional learning management systems enables streamlined administrative operations, while historical recordkeeping supports longitudinal analysis of student performance and institutional evaluation trends.

VI. Conclusion

In this project, an Automated Project Evaluation System was developed to make the evaluation process easier and more organized. The system helps in managing project submission, assignment, and evaluation in a single platform. Through this system, students can upload their projects, and evaluators can check them based on different parameters like functionality, code quality, documentation, and innovation. The system then calculates the final result automatically, which reduces manual effort and saves time. While working on this project, I understood how automation can improve the evaluation process and make it more consistent. It also helps in reducing errors that may happen during manual checking. The system works properly and meets the basic requirements of project evaluation. It can be further improved by adding more features and making it more advanced.

Future Scope

The future of an Automated Project Evaluation System is very bright and full of possibilities. In simple

terms, this system can become much smarter, faster, and more helpful for both students and teachers. In the coming years, it can use advanced AI to understand projects more deeply, not just checking basic things but also analysing logic, creativity, and overall quality. This will make the evaluation more accurate and fairer. The system can also improve its plagiarism checking by comparing student work with a large number of online sources and research papers, which will help maintain originality.

In the future, the system will not be limited only to coding or technical projects. It can be expanded to support different subjects like management, science, and even arts by changing the evaluation criteria according to the subject. Another important improvement is real-time feedback. This means students can get suggestions and corrections while they are still working on their project, helping them improve before final submission. The system can also be connected with learning platforms like Moodle and Google Classroom, so everything from submission to evaluation can be done in one place. With the help of cloud technology, it can handle a large number of students at the same time without slowing down, which is very useful for colleges and universities.

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