



## Student Performance Analyzer

<sup>1</sup>Jaifin Wilson, <sup>2</sup>Joel Wilson, <sup>3</sup>Joydeep Biswas, <sup>4</sup>Taresh Ayaspure, <sup>5</sup>Nidhi Nigam

<sup>1,2,3</sup>Student, <sup>4,5</sup>Asst Professor

<sup>1</sup>Department of Computer Engineering

<sup>1,2,3,4,5</sup>Acropolis Institute of Technology and Research, Indore-453771, Madhya Pradesh

### ABSTRACT:

*Student Performance Analysis System is a software or tool that is used to evaluate and analyze the academic performance of students. It typically includes the collection, storage, and analysis of student data such as grades, test scores, and other relevant information. The system can generate reports, visualizations, and other forms of analysis to provide insights into student performance and identify areas for improvement. It is used by educators, administrators, and other stakeholders to monitor student progress and make informed decisions about student support and learning.*

*A student performance analyzer is a software system designed to help teachers, administrators, and other stakeholders analyze student performance data and make informed decisions about instruction, curriculum, and support services. The system typically collects data from various sources, such as assessments, attendance records, and demographic information, and uses data analytics techniques to provide insights and analysis on student performance. The system can identify areas of strength and weakness, provide predictive analytics, generate customizable reports, and help teachers and administrators make data-driven decisions to improve student outcomes. The development of a student performance analyzer system typically follows a software development lifecycle, with phases such as planning, analysis, design, implementation, testing, deployment, and maintenance. The system can be developed using a variety of software engineering paradigms, such as object-oriented programming, agile development, model-driven engineering, or test-driven development, depending on the specific needs of the project. The ultimate goal of a student performance analyzer is to provide actionable insights and recommendations that can help improve student performance and success.*

**Keywords – Performance, Prediction, Student, Analysis System, Student performance, Data analytics, Educational data mining, Predictive analytics, Assessment analysis, Reporting and visualization, Data-driven decision-making, Curriculum analysis, Academic progress tracking, Educational technology, Learning analytics, Classroom management, Student achievement, Academic intervention, Educational outcomes**

### I. INTRODUCTION

Student performance analysis is the process of evaluating and analyzing the academic performance of students to identify strengths, weaknesses, and areas for improvement. The goal of this analysis is to provide insights and feedback to students, teachers, and administrators in order to promote academic growth and success. The analysis can involve various metrics such as grades, test scores, and feedback from teachers and peers. By analyzing student performance, schools and educational institutions can create targeted strategies to support student learning and development. Student performance analysis involves evaluating and measuring students' academic progress and achievement. This process typically involves collecting and analyzing data such as grades, test scores, and other relevant information to gain insights into individual and group performance and identify areas for improvement. The ultimate goal is to support student learning and enhance their overall educational experience.

The need for a student performance analyzer arises from the growing demand for data-driven decision making in education. Schools and districts need a way to collect, analyze, and interpret student data in order to identify areas of strength and weakness, make informed decisions about curriculum and instruction, and provide targeted support to students who need it most.

A student performance analyzer can help schools and districts achieve these goals by providing a comprehensive view of student performance across multiple academic areas, tracking progress over time, and identifying areas for improvement. It can also help teachers and administrators identify students who may need additional support and track the effectiveness of interventions.

The scope of a student performance analyzer can vary depending on the needs of the school or district. At a minimum, it should be able to collect data from multiple sources, including standardized tests, classroom assessments, attendance records, and grades. It should also be able to generate reports and visualizations that present the data in a clear and concise manner, making it easier for teachers and administrators to interpret the data and identify trends.

In addition, a student performance analyzer may include features such as real-time tracking, predictive analytics, and collaboration tools to support ongoing improvement in student performance. It may also be integrated with other education technology systems, such as learning management systems

and student information systems, to provide a comprehensive view of student performance and support data-driven decision making at all levels of the organization.

Overall, the scope of a student performance analyzer is to provide schools and districts with a comprehensive view of student performance, support data-driven decision making, and ultimately improve academic outcomes for all students.

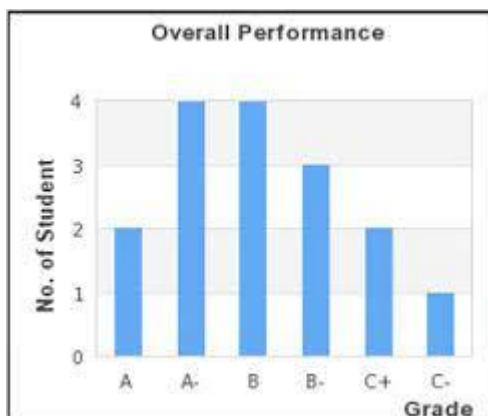


Figure 1. Overall Performance

## II. Literature Survey

### A Faculty Support System (FSS)

Faculty support system is a system which is low in cost as it uses cost effective open source analysis software. WEKA to analyze the student's performance in a course offered by Coimbatore Institute of Technology of Anna University. FSS can dynamically update and analyze student data to add or remove new rules with the flow of the time. Data mining techniques, such as classification techniques, are used to determine the new rule with the help of domain experts. Data mining techniques, such as classification techniques, are used to determine the new rule with the help of domain experts.

### B. Student Performance Analyser (SPA)

SPA is existing secure online web-based software that enables educators to view the student's performance and keep track of schools' data. The SPA is a tool designed for analyzing, storing displaying and getting feedback of student assessment data. It is a powerful analyzer tool used by schools worldwide to perform the analysis and display the analysis data once raw student data is uploaded to the system. The analysis is done by tracking the student or class to get the overall performance of student or class. This would allow the educators or staff to identify the current student Performance easily. Other than that, it enables various kinds of student performance reports such as progress report and achievement report to be generated.

### C. Intelligent Mining and Decision Support System(InMinds)

InMinds helps Universiti Malaysia Sarawak (UNIMAS) to monitor the performance of various areas in every UNIMAS's departments [2]. The system enables top and mid-management in UNIMAS to have a clear look on the areas that needed attention by looking at the figures, revenues and risks. The features, ease of use and flexibility provided by the system makes the performance analysis in UNIMAS to be performed in an ideal solution.

Charts are provided by the system for ease of student performance's interpretation. From the reviews on these existing systems, useful techniques and features could be applied into the proposed system for a better system's performance. The WEKA is chosen as a tool for data mining because it is open source software.

## III. Result

The result of a student performance analyzer system would be the analysis and reporting of student performance data. This data can be presented in a variety of formats, such as charts, graphs, tables, or summary reports, depending on the needs of the users.

The system would enable teachers, administrators, and other stakeholders to monitor and evaluate student progress over time, identify areas of strength and weakness, and take appropriate actions to improve student outcomes. For example, teachers may use the system to identify struggling students and provide additional support or resources to help them succeed, while administrators may use the system to assess the effectiveness of teaching methods and curricula.

The analysis and reporting capabilities of the student performance analyzer system can help to improve student learning outcomes, enhance teaching effectiveness, and support data-driven decision-making in education.

**Individual student performance:** The system should be able to provide information about how well each student is performing in various subjects, topics, and assessments. It should be able to identify areas where a student is struggling and provide suggestions for improvement.

**Class performance:** The system should be able to provide information about the overall performance of a class or group of students, including average scores, grades, and trends over time.

**Comparative analysis:** The system should be able to compare the performance of different students or groups of students, identifying areas of strength and weakness, and providing insights into factors that may be influencing performance.

**Predictive analytics:** The system should be able to use data to make predictions about future performance, such as identifying students who are at risk of falling behind or who may need additional support.

**Customizable reports:** The system should be able to generate customizable reports that provide actionable insights for teachers, administrators, and other stakeholders.

---

## IV. Conclusion and Future

### Enhancement

In conclusion, the Student Performance Analysis System is a critical tool for supporting student success and improving educational outcomes. By collecting, storing, and analyzing student performance data in real-time, the system can provide a comprehensive understanding of student progress, strengths, and weaknesses, and help educators and administrators make informed decisions about student support and learning.

The system can also help identify areas where students are struggling and provide actionable insights into what can be done to improve their performance. The implementation of the system using HTML, CSS, and Java provides a user-friendly and efficient solution for monitoring and analyzing student performance data.

Overall, the future enhancements of a student performance analyzer system can help provide even more value to educators, administrators, and other stakeholders by improving the accuracy, timeliness, and comprehensiveness of the system's insights and recommendations.

## V. References

- 
- [1] J. Shana, and T. Venkatalalam, "A framework for dynamic Faculty Support System to analyse student course data", *International Journal of Emerging Technology and Advanced Engineering*, Vol. 2, No. 7, 2012, pp.478-482.
- [2] Quality Assurance Division (2010). InMinds: Intelligent Mining and Decision Support System. *Universiti Malaysia Sarawak, UNIMAS* [Online]. Available: <http://www.qad.unimas.my/Function/ICTCompliance/inminds.html>
- [3] SPA (2013). What is SPA Standard? *SPA Student Performance Analyser* [Online]. Available: <https://www.studentperformanceanalyser.com.au/spa/about.html>