

Student Performance Prediction

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Abstract - Nowadays many associations require future prediction data to overcome the risks. In perspective of this project we are going to predict the student development and examine the greater result through machine learning algorithm. We foresee the student performance by scanning their previous academic marks. To execute this prediction we have created a dataset, by using this we can predict student marks. This project is developed to justify the capabilities of students in various subjects.

Key Words: Student Performance, Machine learning, Prediction, Dataset

1. INTRODUCTION

Students are the major strength for numerous universities. Universities and students play a significant part in producing graduates of superior calibers with its academic performance accomplishment. However, academic performance achievement changes as various sort of students may have diverse degree of performance achievement. Machine learning is the ability of a system to consequently gain from past experience and improve performance. Nowadays machine learning for education gains more attention. Machine learning is used for analyzing information based on past experience and predicting future performance.

2. LITERATURE REVIEW

A background study is done to review comparable existing systems used to perform student performance analysis. five existing systems are picked because these systems are similar to the proposed system.

A. Faculty Support System (FSS)

Shana and Venkatacalam has proposed a structure named Faculty Support System (FSS) which is low in cost as it utilizes cost effective open source analysis software, WEKA to examine the students performance in a course offered by Coimbatore Institute of Technology of Anna University. FSS is able to analyse the students data dynamically as it is able to update of students data dynamically with the flow of time to create or add a new rule. The update of new standard is conceivable with the assistance from domain expert and the rule is determined by data mining technique such as classification technique. Classification technique is used to predict the students' performance. Besides, FSS focuses on the identification of

factors that contribute to performance of students in a particular course.

B. Student Performance Analyser (SPA)

SPA is existing secure online web based software that empowers instructors to see the students performance and monitor the school's information. The SPA is an tool intended for examining, displaying, saving, and getting criticism of student assessment data. It is an incredible analyser tool utilized by schools worldwide to perform analysis and showcases 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. It assists with recognizing students performance which is beneath the expected level, at expected level or over the expected level. This would permit the educators or staffs to recognize the current students performance without any problem. Other than that, it empowers different sorts of performance report, for example, progress report and achievement report to be produced.

C. Intelligent Mining and Decision Support System (InMinds)

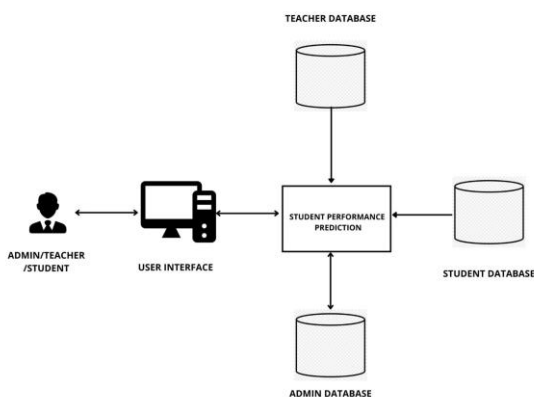
InMinds helps Universiti Malaysia Sarawak (UNIMAS) to monitor the performance of different areas in every UNIMAS's department. The system empowers top and mid-administration in UNIMAS to have a reasonable look on the spaces that required consideration by taking a gander at the figures, incomes and dangers. The highlights, usability and adaptability given by the system makes the performance analysis in UNIMAS to be acted in an ideal solution. Charts are given by the system to simplicity of student performance's interpretation. From the reviews on these current systems, helpful methods and highlights could be applied into the proposed framework for a superior framework's performance. The WEKA is picked as a device for data mining since it is open source software.

D. In the research paper by J. K. JyothiKalpana and K. VenkataLakshmi researched the improved educational area of data mining study the graduate students information gathered from the Engineering college and, Technology, Villupuram. The information contains five a long time period [2008-2013]. The procedures they have utilized are centroid based, density based and distribution based clustering. The software utilized is matlab to apply the strategies on the Engineering student's data set. They have learned about the centroid based, density based and distribution based clustering algorithms. They applied these algorithms cluster students and made an attempt to

raise their performance. They have utilized basic k-means algorithm to break down the performance of students.

3. METHODOLOGY

This Framework will employ an easy to use interface for students and education institution for predicting performance. This study contributes like, provide overview of existing students educational standards, provide an overview of future action by management of the institution and students and also it becomes an initial framework for future study in the institution. This system works on website which will be made from ASP.NET and Microsoft SQL server is used for handling the database.



Student prediction will be done with the help of a machine learning algorithm called ID3. It is a classification algorithm that follows a greedy approach by selecting a best attribute that yields maximum Information Gain(IG) or minimum Entropy(H).

There will be 3 module:

- a. Admin
- b. Student
- c. Teacher

a. Admin :-

- Login
- Manage Students
- Add/Manage Subjects
- Add/Manage Marks
- Upload Notices, QB, Timetable, etc.
- Perform prediction
- Generate Results
- Logout

b. Student :-

- Give Test
- Download Notices
- Download Timetable
- Download Question banks

c. Teacher :-

- View Student Branch wise
- Add Time-Table & Updates
- Add Question Bank Subject Wise

The students will register themselves and login into the Framework. They can give a test based on their academics subjects. In addition to that they can download notices, timetables, questions banks which will be uploaded by the faculty.

The faculty will insert the students details like his semester marks based on this the students performance will be predicted along with that the faculty can also upload notices, timetables, Question bank etc.

4. CONCLUSION

The survey of existing frameworks, insightful calculations and requirements gathered by discussion with top management have been done. In this manner in the wake of looking over existing systems and algorithms we have proposed a system that centers around student performance prediction and student monitoring. This framework plans to control students in the spaces where they are lacking and where improvement is required. We have created a large amount of dataset in order to get accurate results. The proposed framework will help students to perform good in exams with the help of machine learning.

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