STUDENT PERFORMANCE PREDICTION USING ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

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Abstract: One of the foremost necessary aspects for each country's success is its instructional system.

Education has encountered varied issues over the years. To enhance the coaching quality, a range of teaching and learning methodologies are planned. Predicting tutorial performance could be an essential issue for university, college, and college students, among others. In today's society, computers and transportable devices are utilized in each side of life, and a large vary of resources are accessible on-line at any time and from any location.

Machine learning and applied science are samples of technologies that are utilized in the past. Stunning changes in a very type of fields, notably within the areas of tutorial teaching and learning Education establishments have begun to use technology into their ancient teaching strategies.

For the forecast, Etime, Goout, Dac, Walc, Health, and Absence are thought-about.3 machine learning techniques are accustomed classify student performance in multiple ways that are Random forest, Decision tree and Statistical method have all been accustomed predict the end result. To predict tutorials, a prediction-based model was made. The examination of demographic Attributes demonstrates that they're potential markers of a student's tutorial success or failure, which they're the foremost important for predicting, the end of the year tutorial outcomes of student performance. The findings of these case studies give insight into approaches for with success statement student performance yet as a comparison of cubic centimeter algorithms' accuracy.

Index Terms - **Machine Learning, Artificial intelligence, applied science, statistical method, Random Forest and decision Tree, and Prediction are a number of the terms utilized in this paper.**

I. INTRODUCTION: The academic achievement of students can be a critical component of a school's success.

This is frequently regarded as one of the most important criteria for a number of prestigious universities. Learning evaluation and co-curriculum activities, according to some academics, will be used to assess the student's tutorial performance. Though, according to the majority of researchers, a student's previous performances, achievements, and grades will all play a role in predicting their success rate. Most higher education institutions utilize grades as the primary means of evaluating students' performance. Course structure, assignment grades, exam scores, and extracurricular activities can all influence a student's academic achievement.

The educational curriculum of a student may be strategically monitored during their sophomore year of study in an Associate in nursing degree to assess student success.

I. Machine learning techniques, which have been widely used in education, are now favored to assess student tutorial performance.

II. Regular analysis not solely improves the performance of the student conjointly it helps in understanding wherever the student is lacking.

III. It takes a ton of manual effort to complete the analysis method as even one school might contain thousands of scholars. This paper planned Associate in nursing automatic answer for the performance analysis of the student's victimization machine learning.

IV. We tend to use a machine learning algorithmic rule and descriptive datasets attribute /factor embrace college, Sex, Age, Address, Famsize, Pstatus, Medu, Fedu, Mjob, Fjob, Reason, Gaurdian, Travel time, Study time, Failures, Schoolsup, Famsup, Paid Activities, Nursery, Higher, Interne, Romantic, Farmel, Freetime, Goout,Dac, Walc, Health, Absence have been thought of for the prediction and classification of student performance severally victimization 3 machine learning algorithms as well as Random forest, call Tree, regression are enforced to predict the student's tutorial performance.

The attributes may be divided into 5 classes that are personal and fashion, finding out vogue, family connected, academic atmosphere satisfaction, and student's grades.

The attributes utilized in order to construct the dataset. Every student has been tagged as Weak or smart supported his/her final grade. The weak student is that the student who incorporates a final grade but sixty out of hundred. On the opposite hand, the nice student is that the student who incorporates a final grade equal or bigger than sixty. Distinguishing the weak standing

students is a lot of vital than distinguishing the nice standing students, so the weak standing is taken into account a positive price of the target attribute.

II. OBJECTIVE

- Develop a user-friendly web interface for the systems Implementation.
- To be able to improve the efficiency and accuracy of the   prediction process.
- To be able to use MI algorithms to forecast student performance.
- The primary goal of this research is to examine students' performance in courses using MI techniques. The classification   problem is utilized to evaluate students' performance in this study, and the decision tree method is used because there are numerous approaches to data classification.

III. LITERATURE SURVEY.

Table 1. literature survey

| PAPER	FEATURES	DATASET	ALGORITHM
	Grades	700	KNN, Logistic Regression, SVM
Guleria et al, 2014(9)	Class Performance, Attendance , Assignment, Lab Work	120	Decision Tree
XU et al, 2017(5)	Grades, Background,	1169	Linear Regression, Logistic Regression, RF, KNN
Altabrawee et al, 2019(7)	Grades, Background, Demographic	161	Naive Bayes, ANN, Logistic Regression, Decision Tree
Huang et al, 2011(6)	GPA and Grades	239	Linear Regression, ANN, SVM

I.SYSTEM ARCHITECHTURE
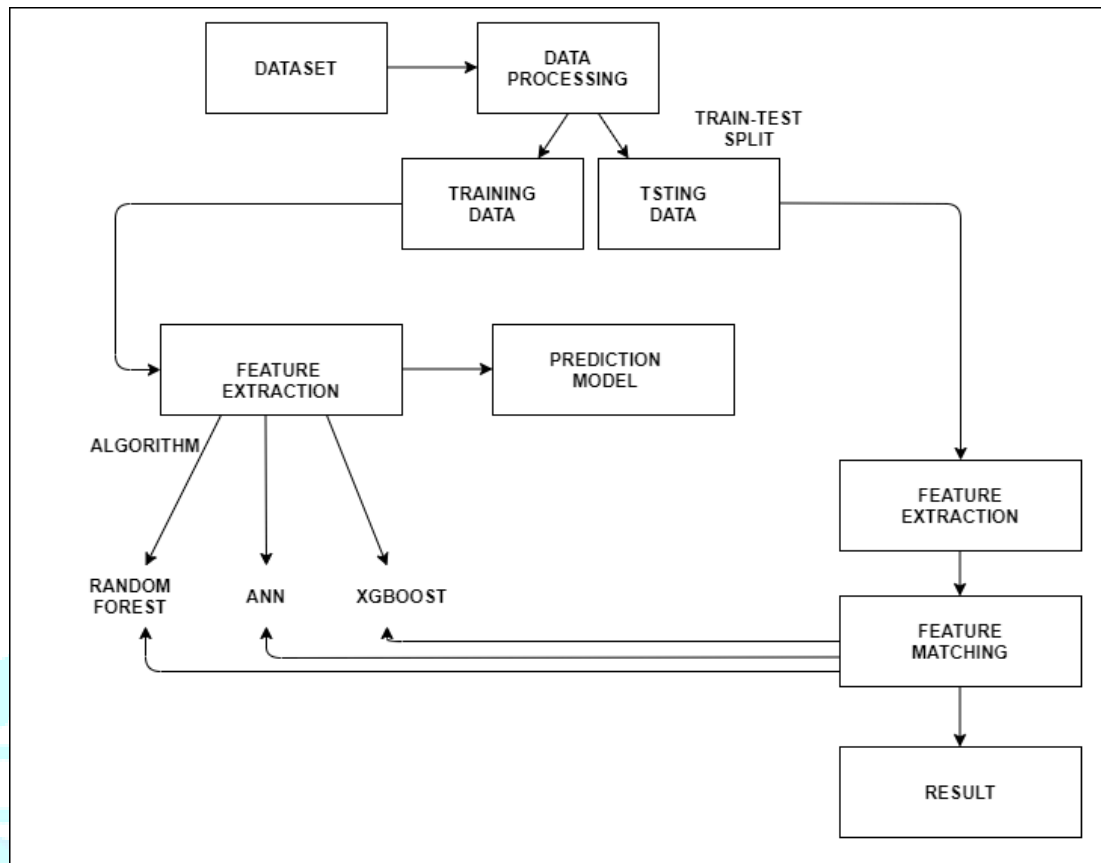
Fig.1 system architecture

To address the issue mentioned among the introduction, our answer need to implement Associate in nursing intelligent system that meets the wants of the students. This could want a system which can predict the student's Baccalaureate average through his or her core grades pattern Machine Learning and AI.

To achieve the project's aims, quantitative simulation analysis ways that were used in different classification algorithms and so the foremost correct model area unit the chosen for predicting student performance in written material comes and each one courses grades.

IV. CONCLUSION

Predicting student's educational performance is exceptionally helpful to assist the instructors and learners to enhance their learning and teaching method schematically. This paper analyzed the student's educational performance with numerous machine learning algorithms.

To unravel the matter of distinguishing the scholars World Health Organization have a poor educational performance, 3 classification models are designed to predict the performance of the scholars. 3 machine learning techniques, Random forest, ANN and XGBoost, are used. This algorithmic rule give higher performance for predicting the student's educational performance.

Last, student's educational dataset analysis on predicting student's educational performance has impelled United States to hold out any analysis to be applied in our domain. It can facilitate the academic system to track the student's educational performance in a structured method.

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