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PERFORMANCE FOR STUDENT HIGHER EDUCATION USING DECISION TREE TO PREDICT THE CAREER DECISION

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Abstract:- *The main purpose of the higher educational association is to give high level and vital training to its students. The two objectives of information mining in Indian education system is to analyze and improve the narrative method for later instructive information mining progresses advancement. The second is to protect, compose and talk about the substance of the outcome which is created by an information mining approach. The utilization of different information mining procedures, such as random forest, decision tree, and so on in Indian training procedures will enhance Students execution and give a wide choice administration ability in determination of courses according to their consistency standard. This paper focuses on the model demonstration for analyzing the dissimilar data mining techniques in an Indian education system. In this paper, we have proposed the approach of decision tree to predict the career decision for the 12th passing out students. The use of decision tree has helped the students to take a correct appropriate decision as per their interest and skills.*

Key Words: ID3, Decision Tree, K-Means, Naïve Bayes, Education System.

1. INTRODUCTION

Education is an exertion of the senior individuals to spread their insight to the more youthful individuals of society. It is in this way a foundation, which assumes an indispensable job in keeping up the propagation of culture by incorporating a person with his general public. Be that as it may, in India, the training framework has some genuine lacunae.

These days the essential difficulties in the instructive association are, not having more proficient, viable and exact instructive Procedures. These days the imperative difficulties in the instructive association are, not having more proficient, successful and precise instructive procedures.

Fig.1 Architecture of Data Mining

This focused on the abilities of information mining in higher learning establishments for the study of educational data. It reflects on how data mining may help to improve decision-making processes in institution. This work aims on predicting students' academic performance at the end of the year and identifying effective indicators of at risk students in early years of their study. It gives the foundation the required data utilizing which it can layout measures to enhance quality.

2. LITERATURE REVIEW

The study conducted by [1] employs the Adaptive Neuro-Fuzzy Inference system (ANFIS) to predict student academic performance which will help the students to improve their academic success.

Acharya and Sinha [2] apply Machine Learning Algorithms for the prediction of students' results. They found that best results were obtained with the decision tree class of algorithms.

Kaur et al. [3] identify slow learners among students and displaying it by a predictive data mining model using classification based algorithms.

Gurlur et al. [4] attempt to find out student demographics that are associated with their success by using decision trees.

Vandamme et al. [5] use decision trees, neural networks and linear discriminate analysis to make early predictions of students' academic success in first academic year at university.

Subhalaxmi Panda et al.[6] use the approach of Random Forest to predict the career decision for the 12th passing out student.

3. DATA MINING IN EDUCATION SECTOR

Usage of the DM strategies in education part is a creating zone for research and furthermore it is named as Educational Information Mining (EDM). The EDM includes with building up the strategies that are useful for looking through a particular sort of information that originates from the scholastic parts. The EDM has given the counsel for enhanced basic leadership process and will expand better directions for the association. There are great advantages DM methods in education division.

Data mining envisions the last consequence of student:

It recognizes student association zone and decide understudy's execution in different fields.

It is utilized to keep up the records of students in education area gainfully and used to order the association.

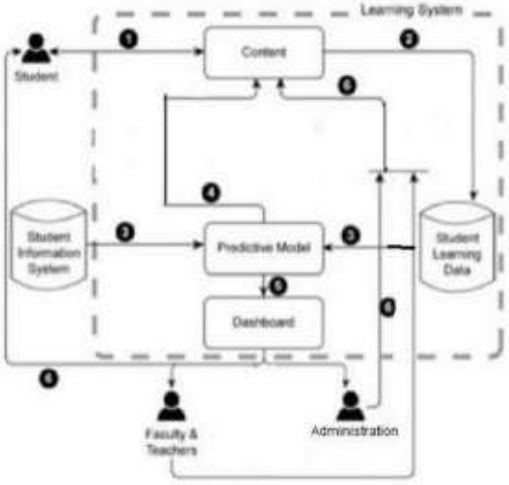
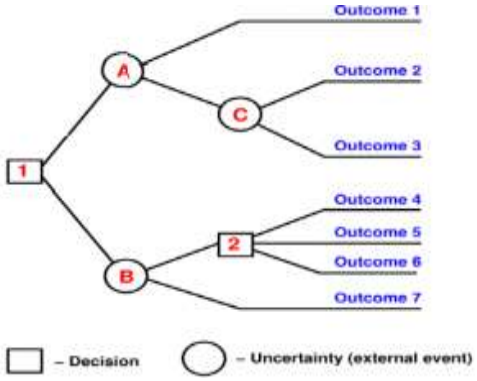


Fig.3 Application of DM in education sector

3.1 Decision Tree Based Method

The decision tree classifiers prepared a sequence of test questions and conditions in a tree structure. In the decision tree, the root and internal nodes contain feature test conditions to split records that have dissimilar individuality. The entire terminal node is assigned a class label Yes or No.

Once the decision tree has been constructing, classify a test record is simple. First from the root node, we apply the test condition to the record and track the suitable division based on the outcome of the test. It then leads us either to another internal node, for which a new test condition is applied, or to a leaf node. When we reach the leaf node, the class label associated with the leaf node is then assigned to the record, it traces the path in the decision tree to expect the class label of the test record, and the path terminates at a leaf node labeled NO.



3.1.1 Decision Tree

The training data set, shown in Table: 1 contains detail information of the student like Student ID, Gender, etc. The whole student information detail is used as the input dataset.

Table 3.1.2 Student Related Variables

ATTRIBUTES	VARIABLES
Student ID	Student ID
Gender	Male/ Female
Students category	Unreserved/ OBC/ SC/ ST
Medium of Teaching	Hindi/English/ Local
Stream	Science/ Arts/ Commerce
10th Grade	Excellent/ Average/ Poor
12th Grade	Excellent/ Average/ Poor
Type of coaching	Online/ offline
Scholarship	Yes /No
Admission type	Entrance exam/Management
Type of coaching	Yes/ No
Material	Text book / Online / Both
Extra curriculum	NCC /Scout / Guide / Sports & heritage activities

4. RESULTS & DISCUSSION

For this experiment, 100 samples were taken into consideration. The table shows the accuracy in terms of percentage for dissimilar classifiers with the growing data

set size. To predict the change in behavior, the Decision Tree technique is used on student database. The technique distinguishes between slow learner and fast learner; get well the failure as soon as possible, takes suitable action to recover the poor section students in a correct manner. Decision Tree gives better result or accuracy.

Table.4 Prediction accuracy

Dataset size	Accuracy (%)			
	ID3	K-means	Naïve Bayes	Decision Tree
30	55	40	40	60
60	64	55	62	78
75	72	43	81	79
100	75	54	59	80

5. CONCLUSION

The make use of Decision Tree has helped the students to take a correct right choice as per their interest and skills. The last goal is to give a superior insight to design a better Indian Education system for Indian students with the successful result. This review may expand to better features to solve difficult decision databases in an able manner.

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