

An intelligent approach to predict the student behaviour and performance

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Abstract — Now a days Predicting student performance becomes more efficient due to process the huge volume of data in educational databases. There are many analysis using this concept and area of implementation is still increasing larger different examples student marks, attendance, semester mark, grade points, placement, health, curriculum-activities etc. In recent trends the amount of data stored is developing rapidly. The main goal is to make a survey on “An intelligent approach to predict the student behaviour and performance” To develop a model in order to predict student Behavior and performance . The student performance in education is very major role in educational environment .The stored database contains student information to improve student perspective and behavior. This paper show trends and types of analyze should be performed to improve education process. We predicted student details and generate a report to the faculty and parents. Based on the performance we give solutions to improve their performance. Predicting student performance becomes more challenging due to the large volume of data in educational databases. This paper also focuses on how the predicted the information can be used to identify the most important attributes selection in a student data. we could actually improve student achievement and success more in an efficient way using educational data mining techniques. It could bring the benefits and impacts to student, educators and academic institutions.

Keywords—Student performance,data mining,performance prediction,student success.

I. INTRODUCTION

Significant improvement to improve student behaviour and Performance managed huge amount of student database has changed our educational system using Data mining techniques are the hottest topics or research areas in the field of Information Technology. Researchers are focusing these areas for better improvement. A simple example of data mining can be predicting student success as given in. In contrast to the above improvement, student details maintenance services are improving and accessing student are continually improving their services. Most of the them is trying to continuously improve student behaviour and performance by computerizing the education details, whole system are managed we going to predicted the student behaviour and performance in future use. managing whole details of student increasing regardless the improvement in the field of education. The objective of developing this project is to predict the student behavior and performance. Education is a vast and important subject, one that cannot be addressed adequately in this space. In recent years the amount of data stored in educational database is growing rapidly. The stored database contains hidden information about improvement of student’s performance and behavior. The ability to predict the student performance in education is very important in educational environments. Student’s academic performance in educational environment is based upon the psychological and environmental factor is predicted by different educational data mining techniques. Here by data mining techniques such as data classification and decision tree methods are used to evaluate the student performance. The analysis of performance can be done in several ways such as Overall Semester Marks, Practical Lab, Attendance, Paper Presentation, End Semester Marks ,mini project , strength and weakness etc., The information about the student and their behavior and performance are stored in a database .we can predicate and access their data for future use. The information about the student and their behavior and performance are stored in a database .we can predicate and access their data for future use. The information about the student and their behavior and performance are stored in a database .we can predicate and access their data for future use. The information about the student and their behavior and performance are stored in a database .we can predicate and access their data for future use. Collected each and every data of the student are analysis and generate the report . The collected details will be processed and published as report and the student and

staff can access their details anywhere when they needed The scope of the project an intelligent approach to predict student performance and behavior is for computerizing the information. The software takes all the data of an student and is capable to provide easy and effective storage of information related to students.

II. RELATED WORK

The collected details will be processed and published as report and the student and staff can access their details anywhere when they needed. Collected each and every data of the student and analysis then generate the report .intelligent approach to predict student performance and behavior is for computerizing the information. The software takes all the data of an student and is capable to provide easy and effective storage of information related to students. The collected details will be processed and published as report and the student and staff can access their details anywhere when they needed. Collected each and every data of the student and analysis then generate the report .

- Betterment of the Students then analysis.
- To improve the Students' performance and behaviour
- As a motivation to student
- To guide the each and every student for further improvement
- To improve student performance find their interest and monitor the full details of particular student database are updated.
- Taking the survey what are the aspects taken to improve a student performance,

III. SYSTEM FUNCTIONALITY AND IMPLEMENTATION

A. REGISTRATION FOR THE STUDENT AND STAFF:

The student and staff can have separate registration login id and password . all the records are managed by administrator. only authenticated user can access the id.

B. RECORD STORAGE:

All the records are maintained in a database . it stored the collection of information of the student and maintain the records.

C. PREDICTION

Include all the relevant student details like semester mark, attendance, mini project, lab work performance extracurricular/co-curricular activities, strength and weakness, assignment marks,etc all the records of the student behaviour and skill etc collected all the data managed and upgraded in database and process . generate feedback of the overall performance of the particular student.

TABLE1.

DATA SELECTION	TYPE	POSSIBLE VALUES
Attendance	Attendance in one Semester	Excellent, Good, Average, Poor
Assignment	Work given by the Teacher	Good, Poor
GPA	Grade point average of each student	Good, Poor
Sessional mark	Percentage of marks obtained in internal exam	Excellent, Good, Average, Poor, Fail
Final grade	Percentage of marks obtained in current semester exam.	Excellent, Good, Average, Poor, Fail

IV. METHODOLOGY

There is a work methodology collection of student data which contain details about student and processing the information using data mining techniques classify the model. Then give upgraded information and overall improvements of particular student and generate the result to students and staff.

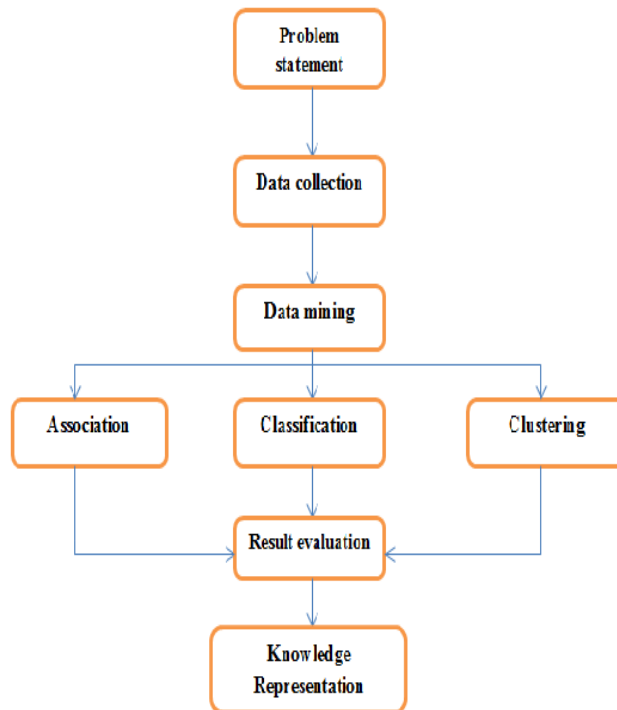


Figure 2. Working methodology

A. Association of the data set and classified

Association Data Mining aims at analyzing the student data to identify an different set of events and uses the dataset collection and stored in database. In this paper, it is applied to evaluate student behavior and performance. Association rules are mining of data set. Here Student Data set Association Rule mining is used to identify possible grade values. i.e., Excellent, Good, Average, Poor or Fail.

B. Clustering the data objects

Clustering is used for combining the objects and generate overall improvements, of data into groups of similar objects. Clustering plays an major role in data mining applications such as information retrieval and manipulating mining data, data exploration, web analysis, spatial database applications, medical diagnostics, marketing and many more application.

TABLE 2. MEAN OF CLUSTER

ATTRIBUTE SELECTION	CLUSTER DATA SET 1	CLUSTER DATA SET 2	CLUSTER DATA SET 3
Attendance mark	74.023	72.124	68.434
Assignment mark	73.098	70.678	65.248
Sessional mark	74.257	65.578	63.025
GPA points	14.578	12.247	11.247
Final grade	89.247	85.247	79.247

V. STUDENT DATA SET AND PREPROCESSING

A. V PROPOSED SYSTEM

The proposed system developed and include more details of student can be predicted for future use.

Collecting information of student and extract the data are:

- Extra- curricular/co-curricular activities.
- Strength and weakness of student. and overall feed- back of student .
- Student background details, and student interest overall performance like attitude, skills, behaviour etc. include all the information about student are predicted.
- Students behaviour and skills (lab work, practical mark, placement, semester mark, attendance, interest, sports etc).

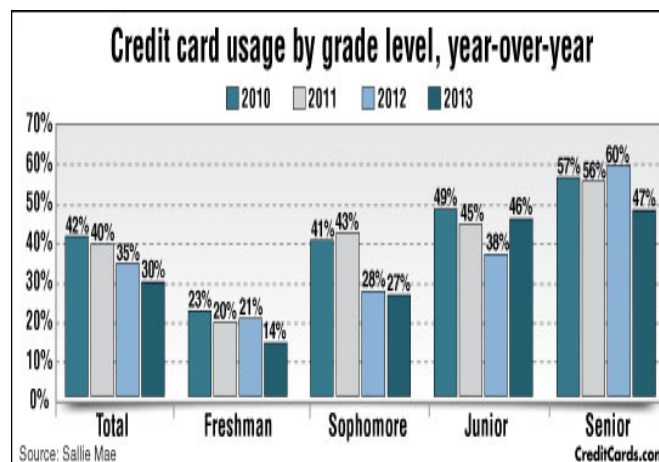
B. FEATURES

To predict the student information for future use and monitor each and every activities of student this project is very useful for all colleges to managed the student information easily and view the details this generated the statistical report and described the overall performance. Institution is to provide the best quality education to its students and to improve their behavior. Prediction of student academic performance is helps to teachers to predict about student success and failure in examination. The prediction model acts like a warning system to identify potential weak students, so that the teachers can take an appropriate action towards them. Otherwise, they can give proper advices to prevent failure in the examinations. Predict the student performance and help them to improve their performance.

VI. RESULT GENERATION

After collecting the data of student and predicted the overall report then generated and analysis the student performance as good, bad , average, excellent, poor and fair , this generate statistical report based on the student overall performance this report can change and updated based on some improvements of student interest in all the activity.

The ability to predict the student performance in education is very important in educational environments



VII. ACKNOWLEDGEMENT

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VIII. CONCLUSION

Predicting students performance is mostly useful to help the educators and learners have regardless improving their learning and teaching process. The management of the student details will be very much easier, efficient and less time consuming. It will be easy for the faculty and student to access the records and reports are present in the system, the student and staff can have a separate login id, then login and view the details of student performance and behaviour and generate the statistical report ,we see the student improvements easily and monitor semester marks, grade points ,lab work, practical mark, mini project ,extra-curricular/co-curricular activities, assignment marks , placement details, strength and weakness etc. We were able to achieve acceptable results of predicting students' performance on a particular task. The classification models built in this study can be used for predicting and tracking students' performance and providing proper interventions and guidance through the learning process.

IX. FUTURE WORK

The future goal of the project is to predict the student performance and behaviour for future enhanced then managed entire details for all colleges and university. In the future, this study will be expanded by adding more data from different years or different institutions in order to increase the accuracy and more information are collected for the prediction. In place of future work, supposed to do the research by using various classifications and clustering applications to enhance the prediction speed and accuracy in the field of education. The work can be further enhanced out by designing the student model and analyzing the every records of students extra- skills and future provide a suggestions on communication and technical skill development by which students can be build in professional aspect of talents. .

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