

Predictive Student Analysis

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Abstract— To create a web application to look at the psychometric and performance analyses of the students through online system that analyses the students' data to identify students on the verge of dropping out of college and allowing college to take corrective measures to ensure students remain in college.

Key words: Learning Analytics (LA), Prediction

I. INTRODUCTION

Using Learning Analytics (LA) in educational institutions is an area that has experienced unprecedented growth over the years. LA is the collection and analysis of electronic data to observe hidden patterns in the learning process. One of the main aims of LA is to help faculty and advisors determine which students might be at risk and who are facing difficulty in their academic career. Drawing upon extant literature, this paper proposes and discusses the development of a new prediction model. The proposed model takes the advantage of the fully electronic characteristics of student data, which include student activity and their marks. Prediction of student performance plays a vital role in improving their academic skills. Nowadays, most of universities and colleges are using LA with a focus on predicting student behaviour. However, applying and integrating LA for predictable is less common. Therefore, this research will discuss and develop a prediction model in which the main aims are predicting students' performance automatically and help to measure and improve their goals.

Prediction can be defined as the estimate the value of a variable called a dependent on overall developmental components. A prediction model is an analysis tool that obtains the predicted variables from a small sample of data, considering the statistical validity of the model so it can be applied to the whole population. The potential of integration prediction model in LA application is one of the top popular practices in education's today.

II. LITERATURE SURVEY

[1] The main objective of educational institutions is to provide high quality of education. Providing a high quality of education depends on predicting the unmotivated students before they are entering in to final examination. In [2] Student performance in university courses is of great concern to the higher education managements where several factors may affect the performance. The main aim is to progress in the quality of the higher educational system by reading out the student data to study and to perform well in each course. In [3] The ability to predict a student's performance is very important in educational environments. Performance of students is done through the factors like personal, social, psychological and other environmental variables. In [4] Educational data mining is a new emerging technique of data mining that can be applied on the data related to the field of education. Which describes students' performance in the end of the semester examination and all their details. In [5] The

timely process and the progress of employee's job which includes the performance and productivity in relation to certain pre-established criteria and organizational objectives and employees are recognized as organizational citizenship behavior, accomplishments and potential for future improvement, strengths and weaknesses, etc. In [6] student performance prediction through the rules generated via data mining technique. This technique mainly used in this project is classification, which classifies the students based on students' grade. In [7] Several researches have been emerged which are unfolding useful knowledge from educational databases for many purposes such as predicting students' success and to predict a student's performance can be beneficial for actions in modern educational systems. In [8] Analyses data mining methods and techniques students' data to construct a predictive model for students' performance prediction. It is also use for making out the educational problem by using analysis techniques for measuring the student performance.

III. METHODOLOGY

The features of the existing system that we studied are employed in the design of the proposed system. These features include a user profile creator to provide user interface, user login, student performance analyser, score card generator, student performance credit card, student development card, achieved credit, passing criteria card and semester wise student performance attribute card. The block diagram for proposed system is as shown in figure month by more than one in two smartphone users, making it the most popular smartphone app worldwide (Smith 2013). Essentially, Google Maps is an easy-to-use mapping application that allows its users to locate addresses quickly. Rules for passing criteria were decided after discussion with top management. Students will be grouped into categories like distinction, first class, higher second class, second class and pass class based on passing criteria.

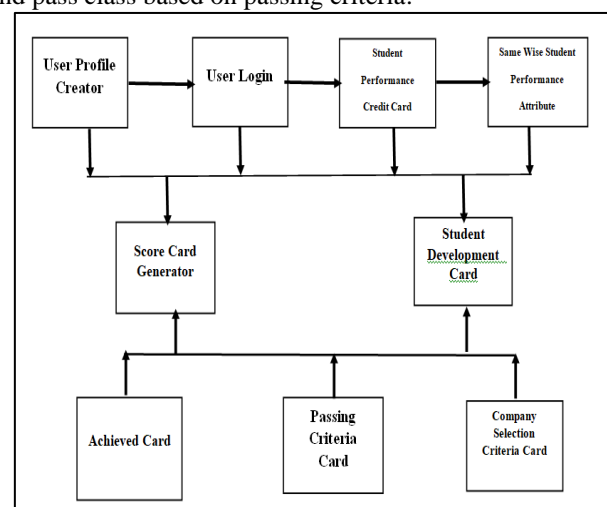


Fig. 1: Proposed System

A. System flow:

In figure 2 Admin, Teacher and Student must register to the application first which creates account for further access. The concept of this project is to intimate the teacher about the progress of every students which helps teacher to give attention equally for distinction student, average student and even for poor student in the class. This concept comes in to picture by generating report which is available after giving test for students. Students must enroll themselves in the tests that is given by teachers which helps them to judge students on their progress. Admin role is to make sure that every process is carried on exactly the way it is designed.

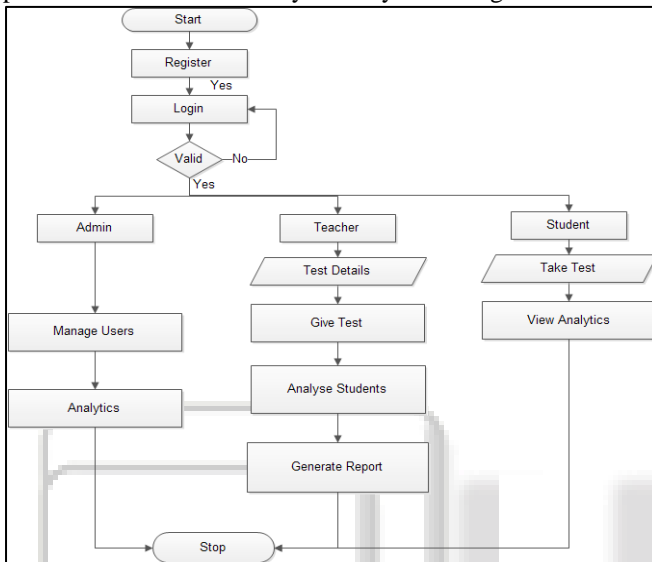


Fig. 2: System Flow

Advantages are

- Manual work.
- Manual way of identifying performance.
- Data Analytics was a tedious job.
- Manual work for a data management.

IV. FUTURE ENHANCEMENT

One of the most recent and biggest challenge that higher education faces today is making students skilfully employable. Many universities/institutes are not in position to guide their students because of lack of information and assistance from their teaching-learning systems. To better administer and serve student population, the universities/institutions need better assessment, analysis, and prediction tools. Considerable amount of work is done in analysing and predicting academic performance, but all these works are segregated. There is a clear need for unified approach. Other than academic attributes, there are large numbers of factors that play significant role in prediction, which includes noncognitive factors (set of behaviours, skills, attitudes). Suitable data mining techniques are required to measure, monitor and infer these factors for prediction. Thus, enriching the input vector with qualitative values may increase the accuracy rate of prediction as well. Integrated Models/Frameworks are required for all the stakeholders of an Institution; hence ensuring sustainable growth for all (Management, Teachers, Students and Parents).

V. CONCLUSION

One of the most recent and biggest challenge that higher education faces today is making students skilfully employable. Many Universities/Institutes are not in position to guide their students because of lack of information and assistance from their teaching-learning systems. To better administer and serve student population, the Universities/Institutes need better assessment, analysis and prediction pools. Considerable amount of work is done in analysing and predicting academic performance, but all of these works are segregated. There is a clear need for unified approach. Other than academic attributes, there are large numbers of factors that play significant role in prediction.

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