# An Automated System For Student Placement Using Edm Techniques

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***Abstract-*** *The Educational Institutions facing one of the biggest challenges is to improve the placement performance of the students. Predicting student's performance becomes more challenging due to the large volume of data in educational databases. Educational Institutes look for more efficient technology that assists them to set new strategies. The main objective of this paper is to provide an overview on the data mining techniques that have been used to predict student's performance. Educational Data Mining Techniques, the knowledge can be extracted from operational and historical data that resides within the educational organization's databases. We could actually improve student's achievement and success more effectively in an efficient way using educational data mining techniques. It could bring the benefits and impacts to students, educators and academic institutions. The entire process has been automated to provide the results and reports with minimal manual intervention.*

***Keywords***- Educational Data Mining (EDM), Minimal manual intervention, Placement performance

## I. INTRODUCTION

The campus placement of the students plays an important role in an educational institution. The companies identify the talented and qualified professionals before they completed their education. So the major success of institution is giving the placement chance to the students. The main motive of this paper is to classify the placement of candidates by using decision tree algorithms.

Data mining is a new approach for education. The main objectives of higher education institutions are to provide quality education to its students for their better placement opportunity. We could use Decision tree algorithms to predict student selection in placement. It helps us to identify the dropouts of the student who need special attention and allow the teacher to provide appropriate placement training. This paper describes how the different Decision tree algorithms used to predict student performance in placement.

Data Mining is a powerful tool for academic intervention. Mining in education environment is called Educational Data Mining. Educational Data Mining is concerned with developing new methods to discover knowledge from educational database and can used for decision making in educational system. In our work, we collected the student's data from engineering institute that have different information about their previous and current academics records like students S.No., Name, Gender, Branch, 10th, 12th, UG and PG passing percentage and final grade & then apply different classification algorithm using Data Mining tools for analysis the students academics performance for Training & placement department. This paper deals with a comparative study of various classification data mining algorithms for the performance analysis of the student's academic records and check which algorithm is optimal for classifying students' based on their final grade.

We could actually improve student's achievement and success more effectively in an efficient way using educational data mining techniques. It could bring the benefits and impacts to students, educators and academic institutions. The entire process has been automated to provide the results and reports with minimal manual intervention.

## II. RELATED WORKS/LITERATURE SURVEY:

Samrat Singh , Dr. Vikesh Kumar , [2] Performance Analysis of Engineering Students for Recruitment Using Classification Data Mining Techniques deals with a comparative study of various classification data mining algorithms for the performance analysis of the student's academic records and check which algorithm is optimal for classifying students' based on their final grade. This analysis also classifies the performance of Students into Excellent, Good and Average categories.

Mohamed Shahiria,, Wahidah Husaina, [3] The Third Information Systems International Conference A Review on Predicting Students Performance using Data Mining Techniques focuses on how the prediction algorithm can be used to identify the most important attributes in a student's data. We could actually improve student's achievement and success more effectively in an efficient way using educational

data mining techniques. It could bring the benefits and impacts to students, educators and academic institutions.

Tripti Mishra, Dharminder Kumar, Sangeeta Gupta,[4] Students' Employability Prediction Model through Data Mining , uses various classification techniques of data mining, like Bayesian methods, Multilayer Perceptions and Sequential Minimal Optimization (SMO), Ensemble Methods and Decision Trees, to predict the employability of Master of Computer Applications (MCA) students and find the algorithm which is best suited for this problem. For this purpose, a data set is developed with the traditional parameters like socioeconomic conditions, academic performance and some additional emotional skill parameters.

Parkavi .A and K. Lakshmi,[5] Predicting the Course Knowledge Level of Students using Data Mining Techniques, the authors have carried out research study by devising an algorithm and tool to determine students'course knowledge level using data mining techniques. This helps the faculty and students to take necessary remedial actions to improve performance in courses.

Neelam Naik, Seema Purohit, [6] Prediction of Final Result and Placement of Students using Classification Algorithm, is to use prediction technique using data mining for producing knowledge about students of Masters of Computer Application course before admitting them to the course.

T. Jeevalatha, N. Ananthi, D. Saravana Kumar,[7] Performance Analysis of Undergraduate Students Placement Selection using Decision Tree Algorithms, This paper describes how the different Decision tree algorithms used to predict student performance in placement. In the first step we have gathered the last two years passed out student's details from placement cell in Dr.N.G.P Arts and Science College. In the second step preprocessing was done on those data and attributes were selected for prediction and in the third step Decision tree algorithms such as ID3, CHAID, and C4.5 were implemented by using Rapid Miner tool. Validation is checked for the three algorithms and accuracy is found for them. The best algorithm based on the collected placement data is ID3 with an accuracy of 95.33%.

## III. METHODOLOGY

***Data Mining***: Database applications that look for patterns that are hidden (the gathering the information from already existing data stored in a database) in a bunch of data that can be used to determine future behaviors. The main motive of the data mining process is to take information from a data set and transform it into meaningful information for further analysis. Data mining have a various types of techniques. The common data mining tasks are predictive model and descriptive model. A predictive model makes an excepted about data values using known result found from various data. Predictive modeling may be made based on the use of historical data. A descriptive model identifies relationships or patterns in data[7].


**Figure 1. Framework for Classification of Historical data.**

***Classification*** a data mining technique which is most commonly used, it employs a set of data which are pre-classified. The classification process involves learning and classification. In learning by using classification algorithm, the training data were analyzed. In classification the accuracy of the classification rules are estimated by using test data[2].

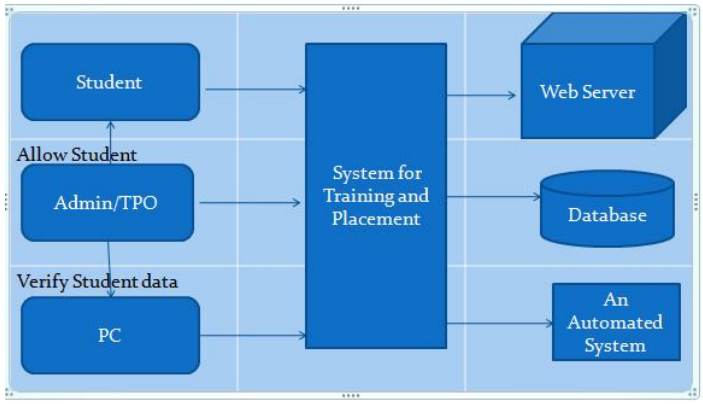


**Figure 2. Workflow diagram .**

***Decision trees algorithms***, tree-shaped structures that represent decision sets. They generate rules, which are used for the classification of data. Decision trees are the supportable technique for building understandable models. Once the tree is built, it is applied to each and every tuple in the database and result in a classification for those tuples [3].

***Educational Data Mining***: Data mining in standard education is a recent area of research and this field of research is earning at higher rates because of its developments and progressive in educational institutes. Data Mining can be used in educational field to enhance the understanding of learning process to focus on finding, extracting and validating variables related to the student learning process. Mining in educational environment is called Educational Data Mining [2].

Knowing the factors for placement of student can help the teachers and administrators to take necessary actions so that the success percentage of placement can be improved. Predicting the placement of a student needs a lot of parameters that are to be considered. Prediction of models includes all personal, social, and psychological and other variables are required for the effective prediction of the placement of the student.

## IV. RESULTS AND DISCUSSIONS

The main objective of this paper is to Proactive management of the student lifecycle. Get all the data in one place and help in decision making. Long term cost benefits. Can seamlessly communicate with all student of the institution.

Better knowledge of the factor affectinginstitution.

In existing system, everything is carried outmanually and all data is maintained in excel sheet.

Maintaining and managing data is difficult task. TPO needs to refer all the documentation maintained for further working and keep the document updated. Users Profile wise collaborative filtering. To overcome these drawbacks of existing system, the proposed system will be developed. Proposed system will provide easy retrieval and updating of data for TPO and easy uploading and updating of data for student. Each user has different authorities and responsibilities. TPO can access the information of students. Classification of eligible student is done by using classification algorithm and shortlisted students are sent notification by SMS or E-mail.

## V. CONCLUSION

Based on the results the college can decide toconduct workshops and make more efforts toimprove student's performance by mainly focuses on students. The further work on segregation (clustering) using more detailed behavioral data and by considering teachers point of view about student's extra curriculum activities and by other existing performance indicators. Other possible future works are predicting company namei.e. which company may hire what type of student.

For this purpose association of companies' basicrequirement and student's qualification is to be done.

## REFERENCES

[1] Senthil Kumar Thangavel, Divya Bharathi P, Abijith Sankar, Amrita School of Engineering, Coimbatore, Student Placement Analyzer: A Recommendation System Using Machine Learning, (ICACCS -2017), Jan. 06 – 07, 2017, 978-1-5090-4559-4.

[2] Samrat Singh , Dr. Vikesh Kumar , Performance Analysis of Engineering Students for Recruitment Using Classification Data Mining Techniques, Samrat Singh et al | IJCSET |February 2013 | Vol 3, Issue 2, 31-37.

[3] Amirah Mohamed Shahiria,, Wahidah Husaina, Nur'aini Abdul Rashida, The Third Information Systems International Conference A Review on Predicting Students Performance using Data Mining Techniques, 1877-0509 © 2015 The Authors. Published by Elsevier B.V. CC BY-NC-ND license.

[4] Tripti Mishra, Dharminder Kumar, Sangeeta Gupta, Students' Employability Prediction Model through Data Mining, ISSN 0973-4562 Volume 11, Number 4 (2016) pp 2275-2282.

[5] Parkavi .A and K. Lakshmi, Predicting the Course Knowledge Level of Students using Data Mining Techniques, 2017 IEEE (ICSTM), pp.128-133.

[6] Neelam Naik, Seema Purohit, Prediction of Final Result and Placement of Students using Classification Algorithm, International Journal of Computer Applications (0975 – 8887) Volume 56– No.12, October 2012.

[7] T. Jeevalatha, N. Ananthi, D. Saravana Kumar, Performance Analysis of Undergraduate Students Placement Selection using Decision Tree Algorithms, International Journal of Computer Applications (0975 – 8887) Volume 108 – No 15, December 2014.