MJRET

OPEN ACCESS

Multidisciplinary Journal of Research in Engineering and Technology

www.mjret.in

eISSN:2348-6953

Student Placement Prediction System using Machine Learning

Bhagyashri Patil, Pooja Rupanwar, Mansi Shinkar, Priyanka Rajput, Prof. Bharti Kudale

Computer Department
Genba Sopanrao Moze College of Engineering
Pune, India

Abstract: - *Predicting the performance of a student is a great concern to the higher education managements. The purpose of training and placement management system is to automate the existing manual system by the help of computerized equipment's, fulfilling their requirements, so that their valuable data/information can be stored for a longer period with easy accessing and manipulation of the same. Student's academic achievements and their placement in campus selection becomes as challenging issue in the educational system Proposed student prediction system is most vital approach which may be used to differentiate the student data/information on the basis of the student performance. Managing placement and training records in any larger organization is quite difficult as the student number are high; in such condition differentiation and classification on different categories becomes tedious. Proposed system will classify the student data with ease and will be helpful to many educational organizations. There are lots of classification algorithms and statistical base technique which may be taken as good assets for classify the student data set in the education field. In this paper, Naive Bayes, KNN algorithm has been applied to predict student performance which will help to identify performance of the students and also provides an opportunity to improve to performance. For instance, here we will classify the student's data set for placement and non-placement classes. Based on the result, higher education organizations can offer superior training to its students. Under this study information related to student's performance measures is analysed in different perspectives to learn the achievements of the students through their activities.*

Keywords: - *Naive Bayes, KNN, Machine Learning, Placement Prediction.*

1. INTRODUCTION

The Training and Placement activity in the college is one of the most important activities in the life of the student. Therefore it is very important to make the process easy so that the students would be able to get the required information as and when required. This software is supported to eliminate and reduce the difficulties faced by the existing system. These system allows you to manage resources. Students studying in final year of engineering focuses on getting employed with companies. The prediction of placement status that B.E students are most likely to achieve will help students to put in more hard work to make appropriate progress. It will also help the teachers as well as placement cell of college to provide improvement in students. A high placement rate is very important in building the reputation of college. This system has a significant place in the educational system of any college or institute.

2. LITERATURE SURVEY

2.1. Paper Name: Data Mining Approach For Predicting Student and Institution's Placement Percentage

Author: Ashok MV, International Conference on Computational Systems and Information Systems for Sustainable Solutions.

Description: Placement of students is one of the very important activities in educational institutions. Admission and reputation of institutions mainly depends on placements. Hence all institutions strive to strengthen placement department. In this study, the objective is to analyse previous year's student's historical data and predict placement chance of the current students and the percentage placement chance of the institution. A model is proposed along with an algorithm to predict the placement chance of students. Data pertaining to the study were collected form the same institution for which the placement chance prediction and percentage placement need to be found from 2006 to 2015. Data collected is divided into historic data form 2016 to 1014 and test data i.e., 2014; 2016 data is considered as current data. Suitable data pre-processing methods are applied. Students having better chance of placement are characterized as good if not bad. This proposed model is compared with other classification algorithms such as Naive Bayes, Decision tree, and neural network with respect to accuracy, precision and recall. From the results obtained it is found that the proposed algorithm predicts better in comparison with other algorithms.

2.2. Paper Name: Evaluating Students Performance in Placements Activity

Author: Indhu Priya, Dr. P. Devaki

Description: In an education system, predicting student's performance in placement has become more challenging due to the large volume of data and imprecise data with fuzziness in educational databases. Large volume of data is processed using big data analytics methods. Processing of data with different factors and with different parameters is difficult in traditional system, where big data analytics can help organizations to better understand the information contained within the data. It also helps them to identify the data that is most important for the prediction and future decision making. The aim of evaluating student's performance is to help them to develop individual student's professionalism, to encourage self-improvement, to maintain achievements and also to give them prior idea about their level of skills in placements. It also plays a vital role in increasing placements. In this paper some of the existing methodologies and their drawback for the student analysis have been discussed.

2.3. Paper Name: A Placement Prediction System Using K-Nearest Neighbour's Classifier

Author: Animesh Giri1, M Vignesh V Bhagavath2, Bysani Pruthvi

Description: In this paper, we propose a Placement Prediction System which predicts the probability of a undergrad student getting placed in an IT company by applying the machine learning model of k-nearest neighbour's classification. We also compare the results of the same against the results obtained from other models like Logistic Regression and SVM. To do so we consider the academic history of the student as well as their skill set like, programming skills, communication skills, analytical skills and team work, which are tested by

the hiring companies during the recruitment process. The data that is used for this purpose is the Placement Statistics of PES Institute of Technology, Bangalore South Campus for the previous two academic batches.

3. SYSTEM ARCHITECTURE

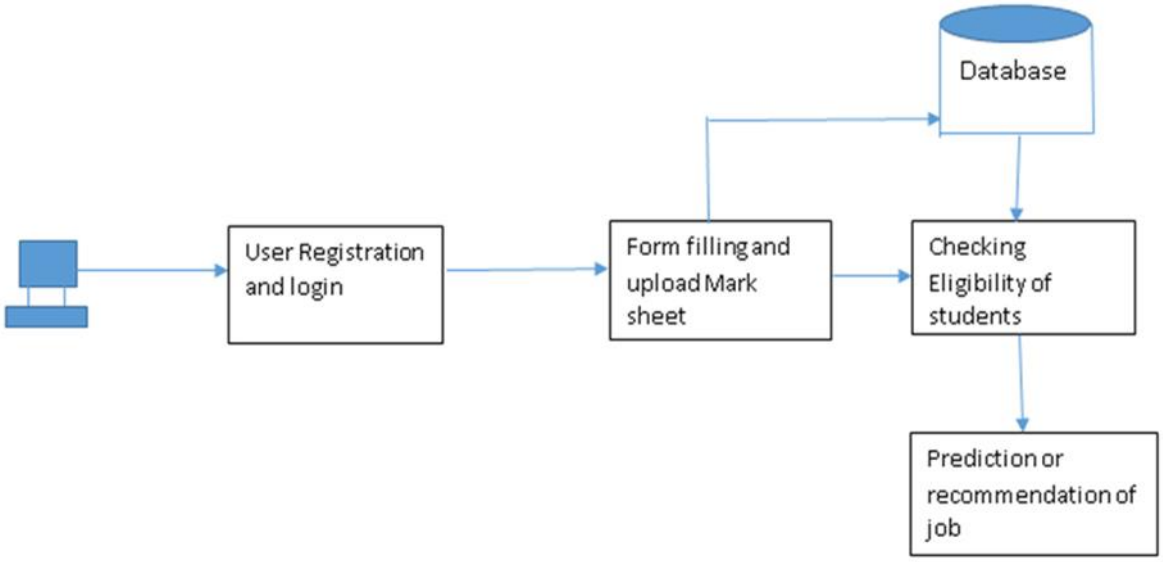

Fig.1:- Block Diagram

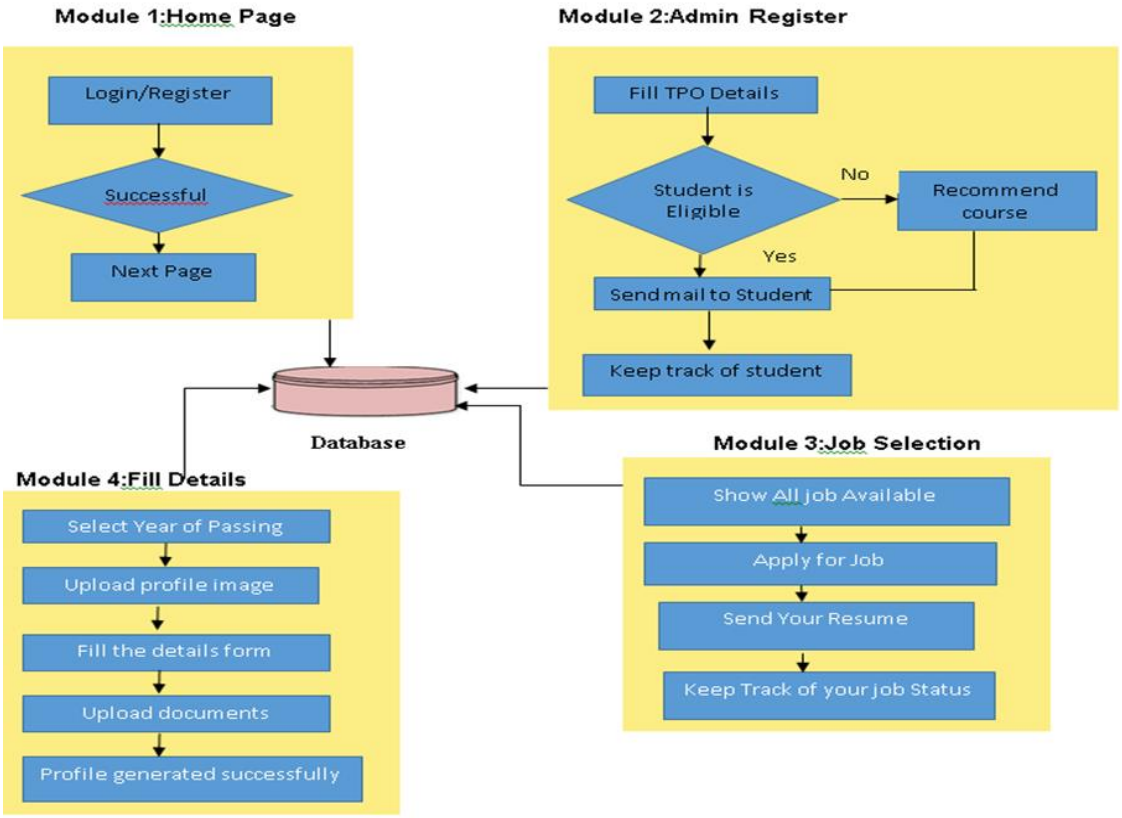

Fig 2: - System Architecture

4. METHODOLOGY

4.1. K-nearest Neighbors

- It is supervised machine Learning Algorithm. This algorithm is used for classification as well as for Regression but mostly used for classification purpose. This algorithm called as lazy learning algorithm.
- KNN stores the complete training dataset which it uses as its representation.
- It makes predictions by calculating the similarity between an input and each training instance.
- It works on the basis similarities.

Working of KNN algorithm: -

1.Input the dataset.

2.select the no. of k neighbours.

3.Calculate Euclidean distance and take k nearest neighbours.

4.Among these k neighbour's, count the number of the data points in each category.

5.Assign the new data points to that category for which no. of neighbours is maximum.

6.model is ready.

4.2. Naive Bayes Algorithm: -

It is a classification technique based on Bayes' Theorem with an assumption of independence among predictors. In simple terms, a Naive Bayes classifier assumes that the presence of a particular feature in a class is unrelated to the presence of any other feature.

Naive Bayes model is easy to build and particularly useful for very large data sets. Along with simplicity, Naive Bayes is known to outperform even highly sophisticated classification methods.

Working of Naive Bayes algorithm: -

1. Separate by Class.

2: Summarize Dataset.

3: Summarize Data by Class.

4: Gaussian Probability Density Function.

5: Class Probabilities

5. FUTURE SCOPE

- Creating the model with additional parameters such as Work Experience, Technical Papers Written, and Content of Letter of Recommendation etc.
- Creating a model based on the graph of admitted vs enrolled students of previous years to predict the increase or decrease in cut-off scores among applicants.
- Comparing different universities based on applied vs. admitted data.

6. CONCLUSION:-

Thus, we have seen how this system is going to help institutions to predict student's placement in final year of study. This system would help reduce tedious job of predicting placement chances. The placement Office can work on identifying the weaknesses of the students and take measures of improvement so that the students can overcome the weakness and perform to the best of their abilities.

7. ACKNOWLEDGEMENT:-

We express our sincere thanks to our Project Guide Prof. Bharti Kudale for his encouragement and support throughout our Project especially for the useful suggestions given during the course of Project and supported throughout for this work. We also thank all the staff members for their help in making our project to work.

8. REFERENCES:-

[1] *Ajay Kumar Pal, Saurabh Pal, "Analysis and Mining of Educational Data for Predicting the Performance of Students", International Journal of Electronics Communication and Computer Engineering Volume4, Issue5, and ISSN (Online): 2249–071X, ISSN (Print): 2278–4209.*

[2] *J.Umarani1,G.Thangaraju2, J.Anitha3, "Prediction of User Behaviour in Educational Web Sites by Applying Web Mining", J.Umarani et al, / (IJCSIT) International Journal of Computer Science and Information Technologies, Vol. 8 (4) , 2017, 509-512.*

[3] *S. Jagan, and S.P. Rajagopalan, "A survey on web personalization of web usage mining", IRJET-International Research Journal of Engineering and Technology, 2015.*

[4] *19 A. Ladekar, P. Pawar, D. Raikar and J. Chaudhari, "Web Log Based Analysis of User's Browsing Behavior", IJCSIT - International Journal of Computer Science and Information Technologies, Vol. 6 (2), 2015.*