

A WEB BASED APPLICATION FOR TUTORING SUPPORT IN HIGHER EDUCATION USING EDUCATIONAL DATA MINING

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Abstract- This Paper aimed at developing an Online College Prediction System that is of importance to the colleges as well as students. In recent time for student to select college for higher education is very difficult as per their aggregate percentage. After the completion of diploma for higher education admission limited seats are available. Student don't know for his/her which college is applicable. This study focuses on ways to support student in admissions decision making using data mining techniques to predict colleges based on previous cut-off performance at institute. In college prediction system based on valid and reliable cut-off criteria is very important to select colleges for higher education. Every college enrolls their college in college module then admin has a right to approve or disapprove if the college is centralized then admin approved this college if college decentralized then admin disapproves this college. Centralized college is shown to student as per their percentage. Several data higher learning institutions, student percentage is the factor most important to a university's quality. EDM is currently the technique most commonly used by researchers to evaluate and predict student performance due to its significance in decision making. To avoid this type of condition, student requires some helping platform which gives them correct knowledge or information about college. In this context, this study focuses on supporting students in making admissions decisions through the application of data mining techniques to better predict college before designation. Second, through a correlation coefficient analysis, we determine the relation between college cut-off criteria and student's aggregate of diploma. We also identify admission criterion that most accurately predicts college cut-off performance so that decision makers can assign more weight to this particular criterion.

This would support institute decision makers as they set efficient admissions principles. This is because they use only formal statistical methods rather than new and efficient predictive techniques such as Educational Data Mining (EDM), which is the most popular technique to evaluate and predict college cut-off performance. EDM is the process of extracting useful details and models from a huge educational database, which can then be used to predict students' performance.

Key Words: Data mining techniques¹, Educational data mining², College Cut-off Prediction⁴, Online System⁵, Database⁶, Student Aggregate⁷.

INTRODUCTION

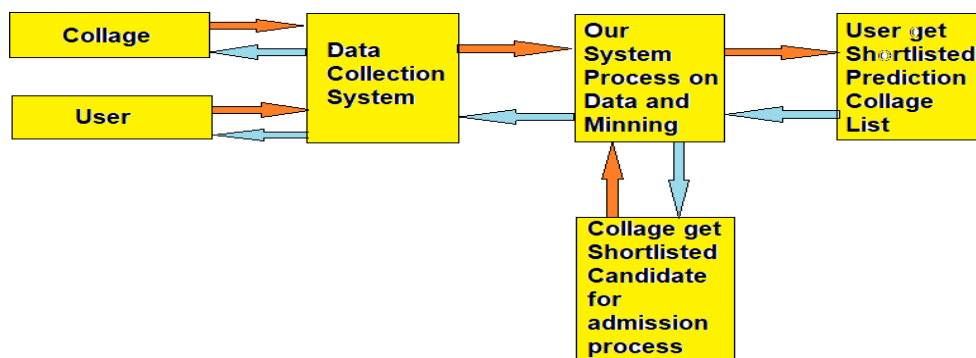
In recent time, all higher education institutions, especially diploma pass out students, face challenges in the admission process. Each university should strive for an admissions system based on valid and reliable admissions criteria that select student likely to succeed in its cut-off criteria. In addition, each student should use the best possible techniques for predicting college previous cut-off criteria for admitting them. Each student faces some issues because in admission system, limited seats are available that's why student gets confused because in India each college has a different category criteria. In category wise limited seats are allocated for each college, then student gets confused and puts wrong option according to their aggregate without seeing criteria and then unfortunately loses all these college options. Second way of admission is management through but in that also college requirement is very high for fees, every student is not affording these fees and student takes one year gap and student loses their one year. On a survey basis there are 80% to 90% student did not find perfect college and lost their admission due to they did not able to reserve the seat because of make mistakes in college selection. This type of condition makes additional threats to the student career. To avoid this type of condition, student requires some helping platform which gives them correct knowledge or information about college. In this context, this study focuses on supporting students in making admissions decisions through the application of data mining techniques to better predict college before designation. This would support institute decision makers as they set efficient admissions principles. This is because they use only formal statistical methods rather than new and efficient predictive techniques such as Educational Data Mining (EDM), which is the most popular technique to evaluate and predict college cut-off performance. EDM is the process of extracting useful details and models from a huge educational database, which can then be used to predict students' performance. Nowadays with the advent in technology and with the perpetual increase in the strength of the students and the number of engineering institutes in the educational universities, it is laborious to select the college for Admission process. This process is very difficult for student. It is not easy for students to find the college wise cut-off list even on internet also. Student enters the random colleges which student likes but they did not think about the college previous cut-off or it is applicable for him/her. The main objective of the Web based application for higher education is to help the students to select the proper and those colleges which are suitable for students on their performance. It provides an automated system which shows the list of colleges which is suitable for student from student last year aggregate and caste category. First student can register and using login and password they can login on the student panel. After the login student can view the suitable colleges. The implementation of this project helps both the students as well as colleges. For

direct second year limited seats are available for admission so colleges also want to fill the seats. As soon as possible. The college can register their college and if the college is centralized the admin can approve this college otherwise disapprove this college. If college is approved by admin it is able to login and able to add cut-off of every year department and caste category wise also. On the basis of this aggregate, system can give the perfect prediction of college from the student side. It is made very easy to give the options of colleges for CAP round process to student because the system gives the 99.99% perfect prediction analysis of college using the student aggregate and caste category. It is very important to give some reference for the CAP round process and some guideline.

LITERATURE SURVEY

Several data higher learning institutions, student percentage is the factor most important to a university's quality. EDM is currently the technique most commonly used by researchers to evaluate and predict student performance due to its significance in decision making. Predicting college cut-off to student aggregate has two main factors: attributes and prediction methods. It has been shown in that student aggregate is the most frequently used attribute in predicting student performance at university. It has been used in many examinations. Other attributes commonly used by exploration to predict college cut-off by student percentage at university are: category wise and branch wise. Few researches have used other attributes like extra student demography, and college information. However, input variables such as college information are used to predict colleges cut-off to student aggregate of diploma for university in the college prediction process for student higher education admission. This is the focus of this study. Several data mining classification techniques have been applied for college prediction for student admission. For example, The institute allocated seat for minimum 20 and student apply their seat is 500 extra, so student don't know which college applicable above their marks and student have only three round for college if student select college, but their mark student not any seat allot then student applicable for management quota if student financial is poor then student not admit for college so it gates year drop means student loss their one year because of their mistake to fill form wrong, if student fill right college above their category wise criteria follow and previous cut-off then student don't have any loss so we study this process.

The analysis of the literature reveals that most available studies do not explore the relationship between college cut-off scores and their expected college in the admissions process. Thus, this study fills a research gap.



SYSTEM ARCHITECTURE AND METHODOLOGY

In this study, different admissions criteria were used as input attributes to predict student's second-year aggregate in the computer sciences colleges of engineering.

Most of the few published related studies performed in India have been confined to engineering colleges. These studies have not used EDM, which can discover hidden patterns in institution's large datasets, and therefore enhance their decision making. One of the very few studies related to this topic that has been confined to a computer science college is study, which applied one of the EDM techniques to predict student's final aggregate based on their grades in all semester. The authors of collected data from the institute of the Computer Science year wise cut-off. They identified which courses in the study plan most strongly affect for direct-second year student. However, they applied only one EDM technique on a very small database to predict college above their final aggregate percentage in diploma and did not ensure the accuracy of their results by using additional EDM techniques.

Another study that related to this topic is study of each institute because each institute has different cut-off of each year as branch wise and category wise, which applied key based algorithm to search student aggregate based on their college criteria above their last year cut-off of college. By comparing results of the college show above their final year aggregate using prediction techniques, they found that key based search outperformed others by achieving a prediction accuracy rate of 99%.

However, the studies have not assessed the relationship between admission criteria and computer science student performance in universities, which is the focus of this study.

To the best of our knowledge, the only related published study that addressed this topic is study. In this study, the authors applied classification techniques on a database of college to determine whether pre-result of cap round process have a significant effect on student aggregate. They found that institute final grade affects college more than student. These findings differ from the findings of this study.

However, their data was collected from all colleges, all department (Computer, Civil, Electrical, E&TC, Mechanical) and all category (Open, OBC, SC, ST, NT) of the College of higher education at India, which has five departments. In addition, they only used one key based search algorithm to search the key as department wise, category wise, and all other fields match on their data rather than applying different EDM models to predict colleges above colleges, which could have enhanced their findings.

Algorithm

Input:

root, trapdoor containing keyword to be searched.

Output:

pointer to the documents containing the keywords; NULL if non-exist.

1. Start
2. NODE_x = Disk Read (root).
3. if NODE_x is an index node
 - (a) If there is an object o in NODE_x such that o: key = keyword, return o: value.
 - (b) Find the child pointer x: child [I] whose keyrange contains key.
 - (c) Return Search Query (NODE_x: child [I], key).
4. else If there is an object o in NODE_x such that o:key = keyword, return o:value. Otherwise, return NULL.
5. end if.

The takes trapdoor and root as input and searches for the keywords match in database.

The disk Read reads the corresponding root page from disk to memory and returns the location in memory that gets stored in node NODE_x.

If NODE_x is index node then trapdoor is checked to see for keyword match. If found returns the corresponding document pointed by the node. Otherwise based on keyword, search will move to the child of NODE_x using pointers.

The search continues recursively. Otherwise, if NODE_x represents leaf then return the pointer to document if search succeeds otherwise NULL.

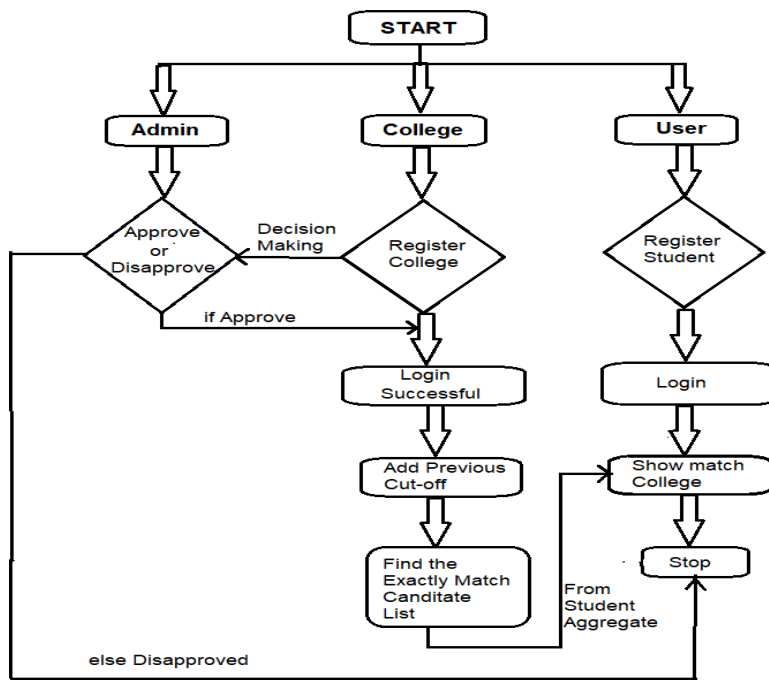


Fig 2-: Flowchart of College Prediction System

RESULTS:

Step1-: First go on browser there are three module Admin, College, User each one has unique password and unique username. Each user has firstly Register herself then login by username and password and Each college has register herself then admin have authority to decide college has centralized or decentralized, the college is centralized then admin approved the college otherwise disapprove college. College is approved then college login by username and password.

Fig 3:- Home Page



Step2:- Go on college module and register the college. In that form all field are required.

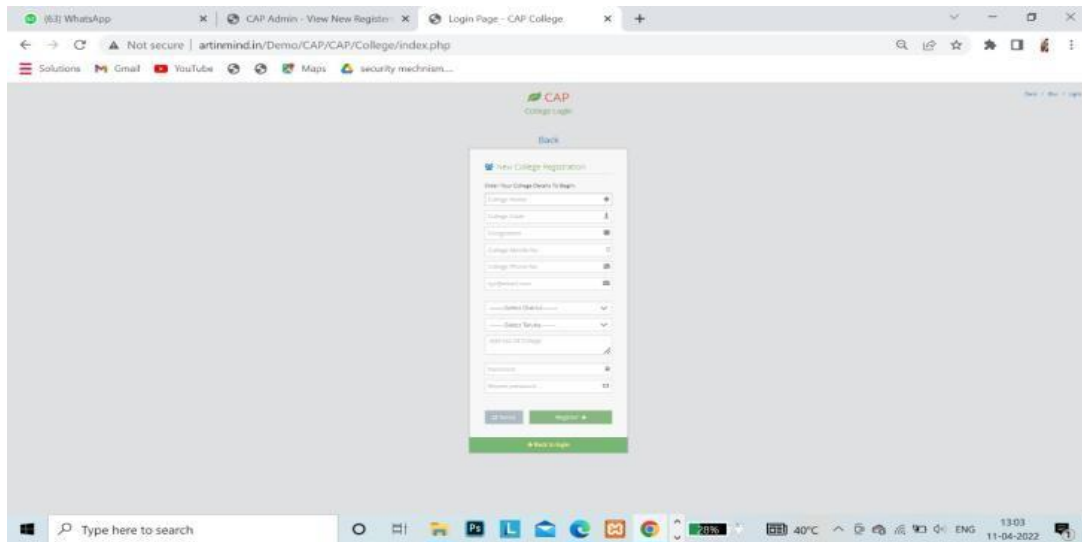


Fig 4:- College Registration form

Step3:- After register the college, if the college is centralized this is approved by admin and then we are able to login otherwise it will give you error. After login college can add the cut-off of the year and view the student which applicable for the college.

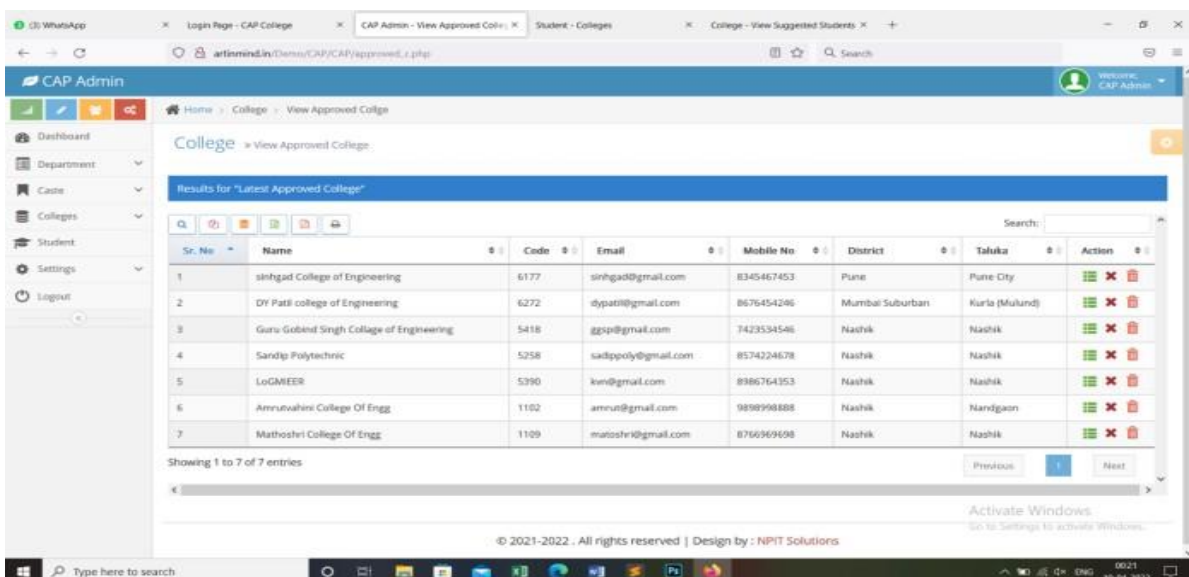


Fig-5: Centralized College list Admin panel

Step4-: As a student go to the student module and register, student is self-approved. Register using username and password.

Fig6-: Student Registration Form

ADVANTAGES

This project has numerous advantages, including:

1. More Secure
2. Save Paper Work
3. Saves time
4. User friendly and easy to use
5. Storage of data is easy
6. Easy to generate the result
7. understanding the result is easy

FUTURE SCOPE

This project only direct second year students can use. In future the after-12th students can also use. We can implement this project for after 10th students also. Now the project is a web-based project in future project is implement in the application form means in web based is not friendly for everyone so application based is best option for future. Now for this web-based tool we required the network connection to use this or take benefits of this. In future the offline application is implements. Now we give prediction on the basis of students caste category and aggregate but in future we give the prediction on the basis of Aadhar card number. Now we are giving analysis only for engineering students but in future we are give analysis for commerce science and arts students. Now we give the only prediction but in future we provide the E-books to students and learning saved video is also provided to student by us.

CONCLUSION

The aim of this study is to support Students in making good decisions in its admissions process by predicting College before filling the admission form. The study was conducted with a largest dataset of college. The technique used, however, are generally and can be used in any higher education institution. The study confirms the effectiveness of prediction College for higher education where decision makers can use these models in planning and optimizing colleges. In addition, the results show that a high- performance model to predict colleges early performance could be developed based on pre-admission information. Also, college and student search using deep searching means search with one or more keywords.

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