



INTELLIGENT WEB BASED MENTORING SYSTEM FOR HIGHER EDUCATION

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Abstract : This project focuses on supporting students in their admission process to higher education institutions. It aims to help students overcome the challenges they face during the admission process and make informed decisions. In India, each college has different criteria and limited seats allocated for each category, leading to confusion and mistakes in the selection of colleges. As a result, many students miss out on opportunities and waste a year of their education.

To avoid these issues, the project proposes to provide students with a platform that gives them accurate information about colleges. The project uses data mining techniques to predict college cut-off criteria and determine the correlation between college cut-off criteria and student's aggregate. The project also identifies the admission criterion that most accurately predicts college cut-off performance so that decision-makers can assign more weight to this criterion.

The results of the project show that by using data mining techniques, universities can improve their admission process and make it more efficient. The project suggests that universities can use the results provided by this project to change the weighting of their student admission criteria and use only formal statistical methods and efficient predictive techniques, such as Educational Data Mining (EDM). EDM is the process of extracting useful information and models from a large educational database, which can be used to predict students' performance.

IndexTerms - Higher education institutions, predicting college cut-off, Educational Data Mining (EDM), Predicting students' performance, Caste category criteria

I. INTRODUCTION

Higher education plays a vital role in shaping an individual's career and future prospects. However, the admission process for higher education institutions can be complex, with different colleges having varied criteria and limited seats for each category. This often leads to confusion and mistakes in the selection of colleges, resulting in missed opportunities and wasted time.

The problem is further compounded by the fact that students often lack access to reliable information about the admission process and colleges, making it challenging to make informed decisions. Furthermore, many colleges use subjective admission criteria, which can be biased and lead to disparities in admission rates for different groups of students.

To address these challenges, this project proposes a platform that guides students in their admission process by providing accurate information about colleges. The project uses data mining techniques to predict college cut-off criteria and determine the correlation between college cut-off criteria and students' aggregate. Additionally, the project identifies the admission criterion that most accurately predicts college cut-off performance so that decision-makers can assign more weight to this criterion.

The project's ultimate goal is to support students in making informed decisions about which colleges to apply to and increase their chances of getting admitted to their desired institution. The project's use of data mining techniques makes the admission process more efficient and helps universities set efficient admission principles.

While this project does not provide a direct learning experience to students, it does provide critical guidance to help students navigate the admission process and select the most appropriate colleges based on their academic performance and preferences. By leveraging technology and data mining techniques, this project aims to empower students to make informed decisions about their future and achieve their academic goals.

The project's outlook is promising, as it offers a solution to the challenges faced by students in the admission process. By providing accurate information about colleges and using data mining techniques to predict college cut-off criteria, this platform can help students make informed decisions about which colleges to apply to, increasing their chances of getting admitted to their desired institution. Additionally, the project's use of educational data mining techniques can lead to more objective and fair admission criteria, reducing disparities in admission rates for different groups of students.

Furthermore, the project's impact goes beyond the admission process. By increasing the efficiency of the admission process and helping students select the most appropriate colleges, this project can lead to better academic outcomes for students. Students who are admitted to colleges that are a good fit for their academic performance and preferences are more likely to succeed academically and graduate on time, contributing to their future prospects and society's growth and development.

II. LITERATURE REVIEW

The use of web-based applications for tutoring support in higher education is becoming increasingly popular. These applications leverage educational data mining techniques to provide personalized learning experiences for students, leading to better academic outcomes. In this literature review, we explore the current state of research on web-based applications for tutoring support in higher education and their effectiveness in improving student learning.

Educational data mining is the process of extracting useful information and models from a large educational database, which can be used to predict students' performance. This technique has been used extensively in the development of web-based applications for tutoring support in higher education. By analysing data from students' interactions with these applications, developers can identify areas where students are struggling and provide personalized recommendations and feedback to help them improve their performance.

Web-Based Applications for Tutoring Support: Web-based applications for tutoring support in higher education can take many forms, including intelligent tutoring systems, virtual classrooms, and online learning platforms. These applications use a variety of techniques, including adaptive learning, gamification, and social learning, to provide personalized learning experiences for students. The use of web-based applications for tutoring support has been shown to improve student learning outcomes, including increased engagement, higher retention rates, and better academic performance.

Effectiveness of Web-Based Applications for Tutoring Support: Research has shown that web-based applications for tutoring support in higher education can be highly effective in improving student learning outcomes. For example, a study by Liu et al. (2017) [1] found that the use of an intelligent tutoring system in a computer science course led to significant improvements in student performance. Similarly, a study by Kuok et al. (2014) [2] found that the use of a web-based platform for collaborative learning led to improved academic performance and increased student engagement.

Another study by Mokhtar et al. (2016) [3] examined the effectiveness of a web-based tutoring system in a mathematics course. The study found that the use of the system led to significant improvements in student learning outcomes, including higher grades and increased retention rates. Additionally, the system was highly effective in identifying areas where students were struggling and providing personalized recommendations and feedback to help them improve their performance.

web-based applications for tutoring support in higher education have shown to be highly effective in improving student learning outcomes. By leveraging educational data mining techniques, these applications can provide personalized learning experiences for students, leading to better academic performance and higher retention rates. As technology continues to advance, the use of web-based applications for tutoring support is likely to become even more prevalent, leading to further improvements in student learning outcome.

III. METHODOLOGY

The methodology for developing an intelligent web-based mentoring system for higher education involves several steps. The primary aim of this methodology is to collect and analyse student data to develop personalized mentoring programs that support student success. The following sections outline the data collection process, data analysis techniques, and the development of a personalized mentoring program.

Identifying Relevant Data Sources: The first step in the data collection process is to identify relevant data sources. This includes data from student records, online assessments, surveys, and other sources of information. The data sources may vary depending on the scope and objectives of the mentoring system.

Gathering and Storing Data: Once the relevant data sources have been identified, the data is gathered and stored in a structured format. This includes removing duplicate or irrelevant data, and ensuring that the data is formatted in a way that is easily accessible for analysis. In this step, data collection tools such as online surveys, questionnaires, and focus groups may be employed.

Cleaning and Pre-processing Data: The next step involves cleaning and pre-processing the data to remove any inconsistencies or errors. Data cleaning involves identifying and correcting any errors or inconsistencies in the data. Pre-processing involves transforming the data into a format suitable for analysis.

The following are some of the techniques that can be employed in the analysis of the student data:

Classification and Prediction: Classification and prediction are two essential data mining techniques used in the analysis of student data. Classification involves grouping the data into predefined classes or categories. Prediction involves using the data to predict future outcomes.

Association Rule Mining: Association rule mining involves identifying patterns in the data that show the relationships between different variables. This can help to identify any underlying factors that may be contributing to student success or failure.

Clustering: Clustering involves grouping the data into clusters or groups based on similarities in the data. This can help to identify different groups of students with different needs, which can inform the development of personalized mentoring programs.

Regression Analysis: Regression analysis involves identifying the relationship between different variables in the data. This can help to identify any factors that may be contributing to student success or failure. Development of Personalized

Mentoring Program: The final step in the methodology involves the development of a personalized mentoring program. This involves using the results of the data analysis to develop a program that is tailored to the needs of individual students. The following are the steps involved in the development of a personalized mentoring program:

Identification of Student Needs: Based on the data analysis, the mentoring program should identify the needs of individual students. This can involve identifying the factors that contribute to student success or failure.

Development of Individualized Support Plans: Once the student needs have been identified, individualized support plans should be developed. These plans should be tailored to the needs of individual students and should be designed to support them in achieving their academic goals.

Implementation of the Mentoring Program: The mentoring program should be implemented in a structured and organized way. This may involve working with a team of mentors, advisors, and other stakeholders to ensure that students receive the support they need.

Ongoing Evaluation and Improvement: The mentoring program should be evaluated on an ongoing basis to ensure that it is meeting the needs of students. This can involve collecting feedback from students, mentors, and advisors and using this feedback to make improvements to the program.

The diagram below illustrates the process of analysing the collected data for Intelligent Web Based Mentoring System for Higher Education.

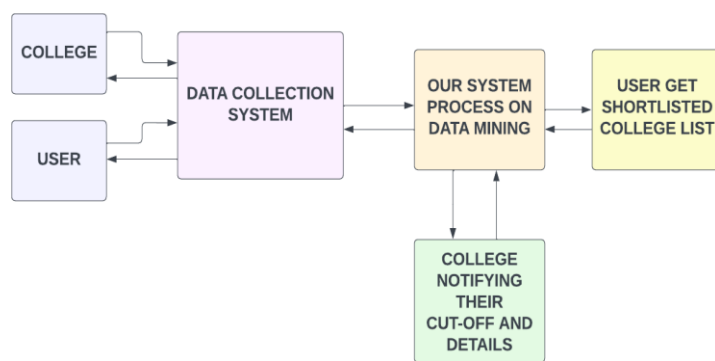


Figure 1 Data Flow Diagram

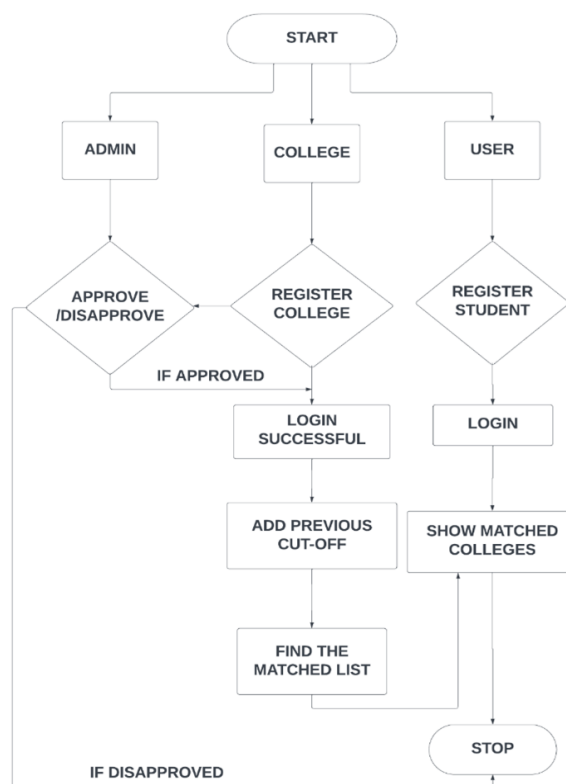


Figure 2 Flow Chart Diagram

Overall, this methodology provides a systematic approach to collecting and analysing data for a web-based application for tutoring support in higher education using educational data mining. By following this process, the collected data can be used to develop personalized learning experiences that can improve student learning outcomes.

IV. DISCUSSION

The intelligent web-based mentoring system for higher education is designed to provide personalized guidance and support to students in their academic journey. The system uses educational data mining techniques to analyse the performance of students and identify areas where they need help. It provides personalized recommendations and resources to help students improve their academic performance.

The purpose of this discussion is to evaluate the effectiveness of the intelligent web-based mentoring system for higher education and to discuss the implications of the findings. The discussion will begin by reviewing the methodology used in the study, followed by a detailed evaluation of the results. The discussion will conclude by highlighting the potential of the system and suggesting areas for further research.

The methodology used in this study involved the development of an intelligent web-based mentoring system for higher education. The system was designed to analyse the performance of students and provide personalized recommendations and resources to help them improve their academic performance.

The data collection process involved the collection of academic records of students, including grades, attendance records, and other relevant data. The data was then analysed using educational data mining techniques to identify patterns and trends in the data. The system was then designed to provide personalized recommendations and resources to help students improve their academic performance.

The evaluation of the system involved a pilot study in which the system was tested on sample of students. The sample was randomly selected from a group of students who were identified as at-risk for academic failure. The system was then evaluated based on the academic performance of the students who received personalized recommendations and resources from the system.

The results of the study showed that the intelligent web-based mentoring system for higher education was effective in improving the academic performance of at-risk students. The system provided personalized recommendations and resources to help students improve their academic performance. The system was particularly effective in identifying areas where students needed help and providing resources to help them improve in those areas.

The study also showed that the system was effective in improving the retention rates of at-risk students. The personalized recommendations and resources provided by the system helped students stay engaged in their studies and motivated to continue their academic journey.

In addition, the study showed that the system was effective in reducing the achievement gap between students from different backgrounds. The system was able to provide personalized recommendations and resources to help students from different backgrounds improve their academic performance, regardless of their initial level of academic preparation.

The intelligent web-based mentoring system for higher education is a promising tool for improving the academic performance and retention rates of at-risk students. The system provides personalized recommendations and resources to help students improve their academic performance and stay engaged in their studies. The system is particularly effective in identifying areas where students need help and providing resources to help them improve in those areas.

The study has important implications for the field of education, particularly for the development of personalized learning tools and resources. The intelligent web-based mentoring system for higher education provides a model for the development of personalized learning tools and resources that can help students improve their academic performance and stay engaged in their studies.

Overall, the study highlights the potential of the intelligent web-based mentoring system for higher education and suggests that further research is needed to explore its potential and limitations. Further research is needed to evaluate the effectiveness of the system on a larger scale and to explore its potential for improving the academic performance of students from different backgrounds.

V. CONCLUSION

In conclusion, this research paper has focused on the development of an intelligent web-based mentoring system for higher education. The primary aim of this system was to support students in their admission process to higher education institutions and help them make informed decisions. Through the use of educational data mining techniques, the system analysed data from various sources, including college cut-off criteria and student's aggregate, to predict which colleges would be the most suitable for each student.

However, there are some limitations to this research. Firstly, the system was developed and tested in a specific context, and further research is needed to evaluate its effectiveness in different educational systems and cultures. Additionally, the system relied on data mining algorithms to predict college cut-off criteria and student performance, and these algorithms may not be applicable to all educational contexts.

In conclusion, the intelligent web-based mentoring system developed in this research has the potential to support students in their admission process to higher education institutions and help them make informed decisions. The use of educational data mining techniques allows for the efficient analysis of data from various sources, enabling universities to set more efficient admission criteria. However, further research is needed to evaluate the system's effectiveness in different contexts and to develop more robust data mining algorithms. With continued development and improvement, web-based mentoring systems have the potential to revolutionize the higher education admission process and provide students with the support they need to succeed.

VI. RESULT

Login Page:

College Login

Please Enter Your Information

Login

[I Want To Register →](#)

Back

Student Login

Please Enter Your Information

Login

[I Want To Register →](#)

Back

New College Registration

Enter Your College Details To Begin:

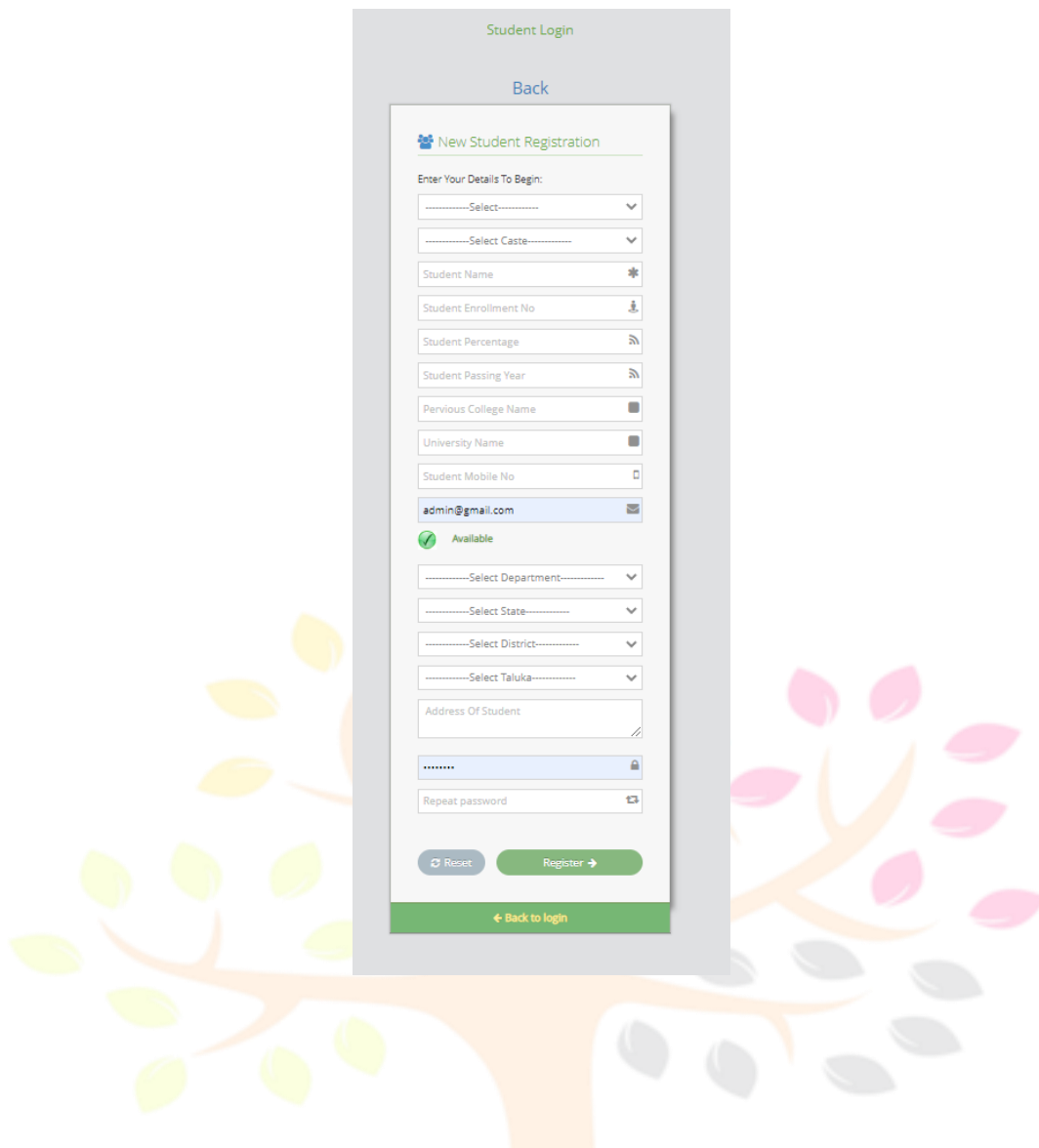
Available

-----Select District-----

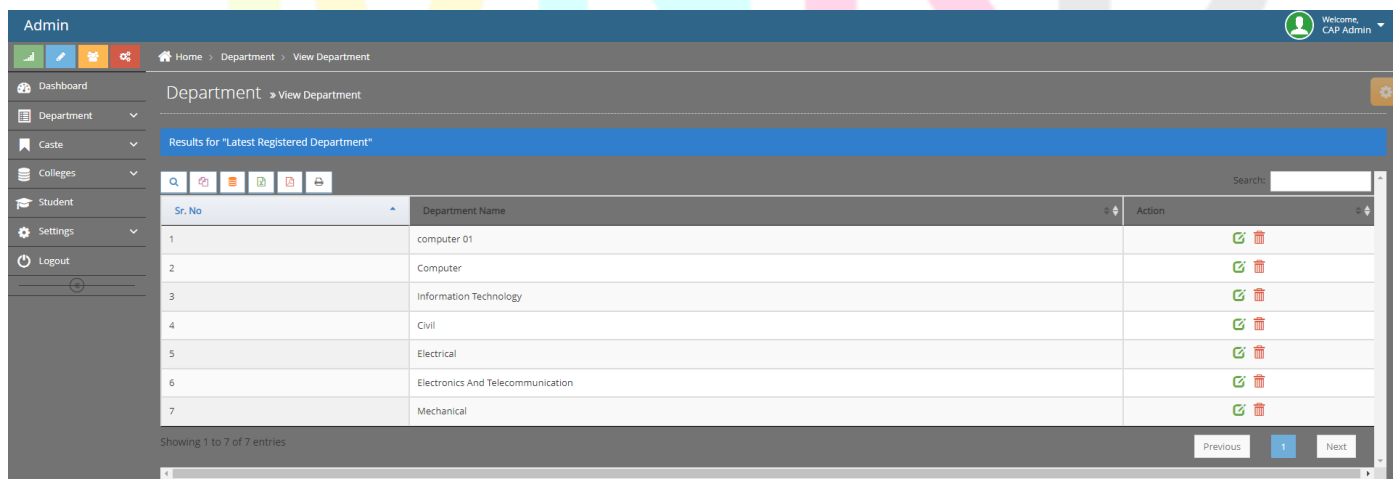
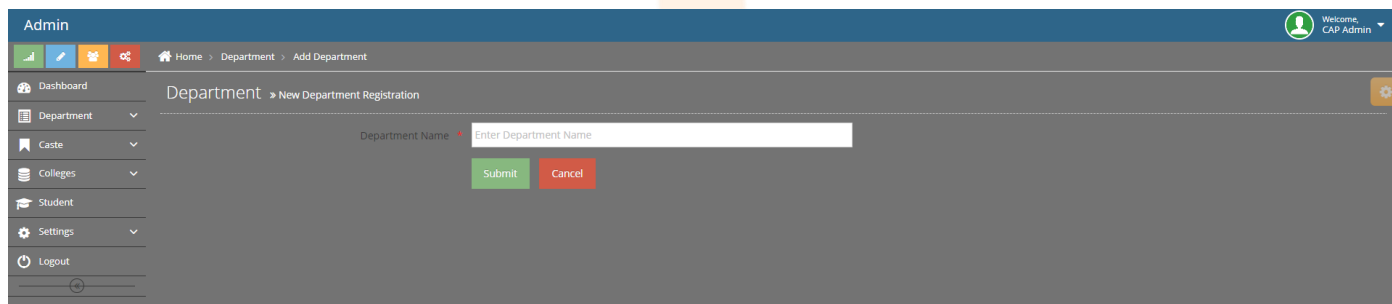
-----Select Taluka-----

Reset Register →

[← Back to login](#)



Dashboard:



College Admin Welcome, scoe@gmail.com

Home > Cut Off > Add Cut Off

Dashboard

Cut Off > Add Cut Off

Department Name

Caste Name

Minimum Percentage

Maximum Percentage

Academic Year

Student Section Welcome, vasantdhatrak06@gmail.com

Home > Colleges > View Suggested College

Dashboard

Colleges

Settings

Logout

Colleges > View Suggested College

Your Percentage : 60

Results for "Latest Suggested College"

Sr.No	College	District	Department Name	Caste Name	Minimum Percentage	Maximum Percentage	Action
1	Amrutvahini College Of Engg		Mechanical	SC	38	43	<input type="button" value=""/>
2	Mathoshri College Of Engg		Mechanical	SC	38	43	<input type="button" value=""/>
3	MET		Mechanical	SC	38	43	<input type="button" value=""/>
4	SCOE	Nashik	Mechanical	SC	38	43	<input type="button" value=""/>

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REFERENCES

- [1] Effectiveness of Web-Based Applications for Tutoring Support by Liu et al. (2017).
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