Vivekanand Education Society's
Institute of Technology

(Autonomous Institute Affiliated to University of Mumbai, Approved by AICTE & Recognised by Govt. of Maharashtra)
NAAC accredited with 'A' grade

Semester: VI **Class : D15_C**

Title of the Project: College Cutoff Predictor

Domain:

Group Members:
Member 1: Divesh Lulla (31)
Member 2: Shivam Makhija (32)
Member 3: Sahil Ramrakhyani (42)

Professor : Mrs. Ravita Mishra

Content

- Overview
- Introduction
- Problem Statement
- Objectives
- Requirements
- Literature Survey
- Proposed System
- Proposed Design (along with UML Diagrams)
- Competitors
- Conclusion
- References

Introduction to Project

In the intensely competitive college admission scenario, the forecast of cutoff percentages is an important aspect for both students and institutions. The College Cutoff Predictor is an artificial intelligence-driven project to study previous years cutoff tendencies and give insights regarding the anticipated cut off percentages for the future year.

Through the historical admission data, model determines patterns and the dominant factors affecting cutoff of various branches at a college. Through this predictive analytics, prospective students are able to make well-informed choices when applying for the desired courses while institutions can enhance their admission approach.

The project uses machine learning algorithms to scan trends, identify correlations, and predict cutoffs with precision. Based on a data-driven methodology, the College Cutoff Predictor strives to bring convenience and efficiency in admissions, which is why it becomes a very valuable tool for both students and institutions.

Problem Statement

The admission process of the college is very competitive, with cutoff percentages for various branches vary every year based on factors such as student performance, availability of seats, and trends in admissions. Students find it difficult to anticipate the cutoff required for the desired branch, and this creates uncertainty and makes it challenging for them to plan their applications. Colleges also find it challenging to anticipate trends in cutoffs, which impacts seat allotment and admission strategies.

The College Cutoff Predictor solves this problem by employing machine learning to examine past cutoff data for every branch and forecast anticipated cut-off percentages for the upcoming academic year. By recognizing patterns and trends, this system enables students to make better-informed application decisions and helps colleges streamline their admission process. This predictive model increases efficiency and minimizes uncertainty for both students and educational institutions.

Objectives of the project

- **Analyze Previous Year Cutoff Trends –** Investigate past cutoff figures for every branch to establish patterns and driving forces.
- **Develop a Predictive Model –** Utilize machine learning models to forecast next year's cutoff percentages.
- **Branch-Wise Prediction –** Offer individualized cutoff predictions for every branch to enable accurate observations**.**
- **Help Students Plan Admission –** Assist students in approximating their possibilities of being accepted into a particular branch using estimated cutoffs.
- **Help Colleges Plan Admission Strategy –** Help colleges realize cutoff patterns to maximize seat planning and admission strategies.
- **Impose Convenience and Precision –** Provide a fact-based method to reduce uncertainty in admissions.

Requirements of the system (Hardware, software)

Hardware:

- Processor: Intel Core i5/i7 or AMD Ryzen 5/7 (or higher)
- RAM: Minimum 8GB
- Storage: At least 256GB SSD
- Operating System: Windows 10/11

Software:

- Programming Language: Python 3.x
- IDE/Text Editor: VS Code
- Libraries & Frameworks
- NumPy & Pandas (for data manipulation)
- Matplotlib & Seaborn (for data visualization)
- Scikit-learn (for machine learning models)
- Database: MySQL
- Version Control: Git & GitHub for project management

Literature Survey

Paper Title	IEEE Authors	Year	Survey Summary
Personalized College Recommender and Cutoff Predictor for Direct Second Year Engineering Admissions	Abdul Majeed Inamdar; Tanmay Mhatre	2022	The paper proposes a college recommender and cutoff predictor for DSE engineering admissions in Maharashtra.
Machine Learning Based Prediction Model for College Admission	Priya N. Parkhi; Amna Patel; Himesh Ganwani; Manav Anandani	2023	The paper develops a machine learning model to predict college admissions using historical data and evaluates different

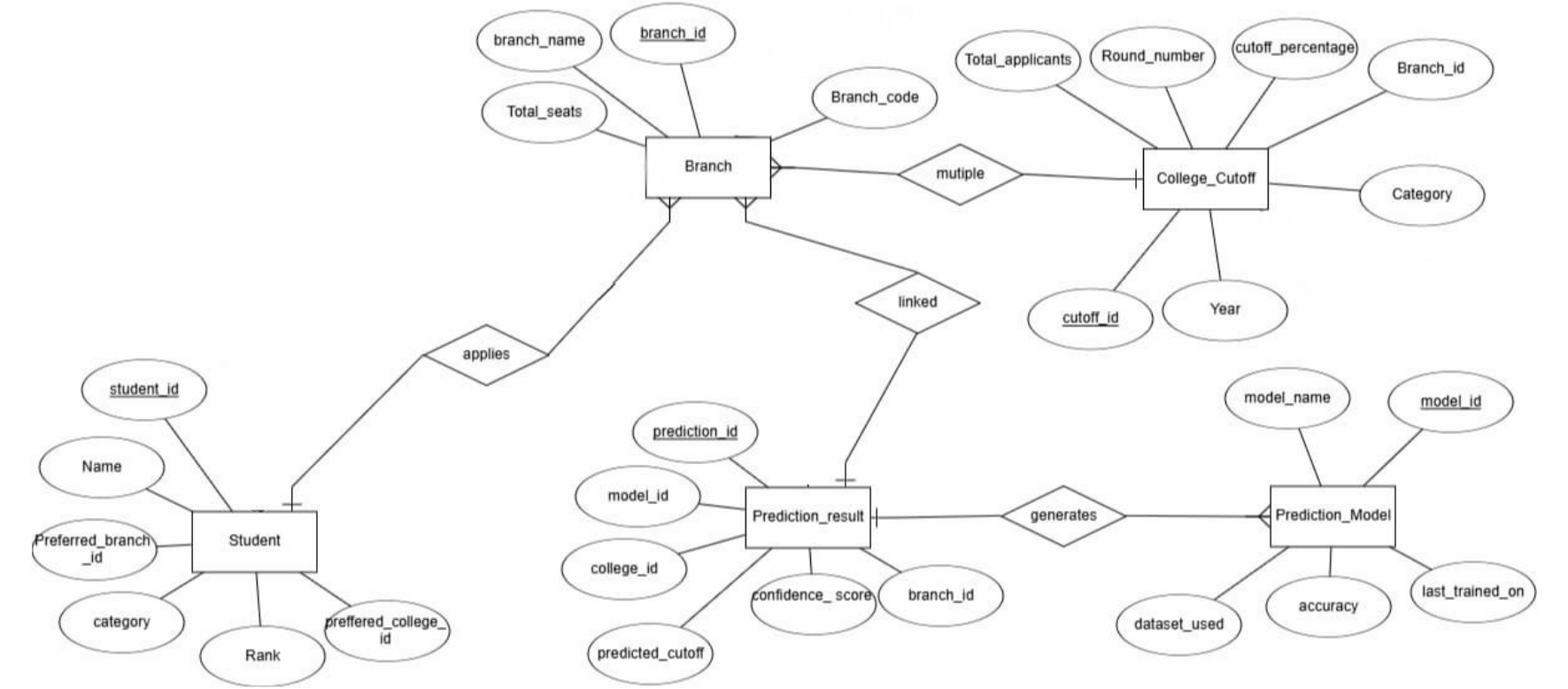
Literature Survey

Paper Title	Publisher	Year	Survey Summary
Research on the Prediction Method of the College Professional Admission Scores	Glenn Gumba; Jessie R. Paragas	2022	The paper uses web crawling and SVM to predict college admission scores, with SVM outperforming the BP model, especially within 1% error.
The module of prediction of College Entrance Examination aspiration	Rensong Dong; Hua Wang; Zhengtao Yu	2012	This study applies SVM to predict CEE aspirations, achieving 90% accuracy, and helps students make better choices for their

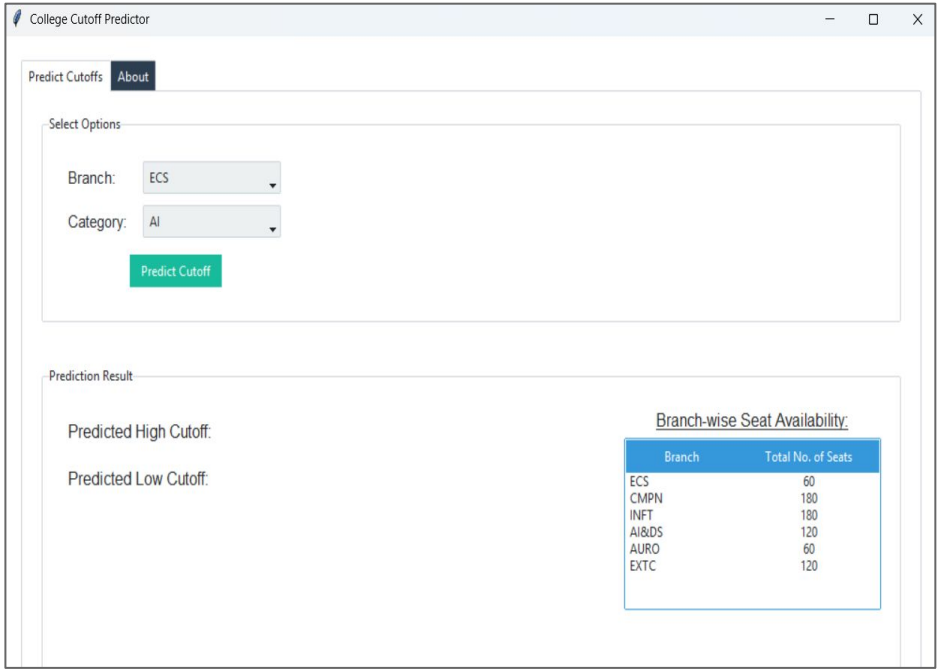
Competitors

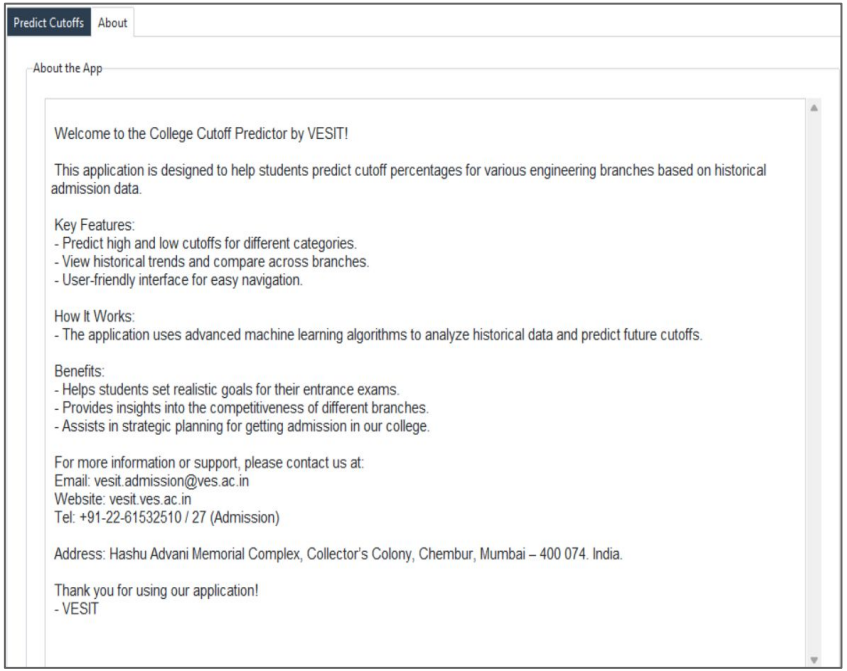
College Cutoff Predictor	Our Competitors (Career 360, Upgrad, Shiksha)
• Focuses specifically on predicting the cut-off marks for a particular college. • This allows for a highly targeted, niche prediction system that caters to students for our institution. • Predicts cutoff on a branch wise basis.	• Main focus is to predict overall cut-off marks from around multiple institutions. • This provides a broad, generalized prediction system that serves students interested in a variety of institutions. • Focuses on institute wise cutoff marks rather than prediction for each branch.

Proposed Design

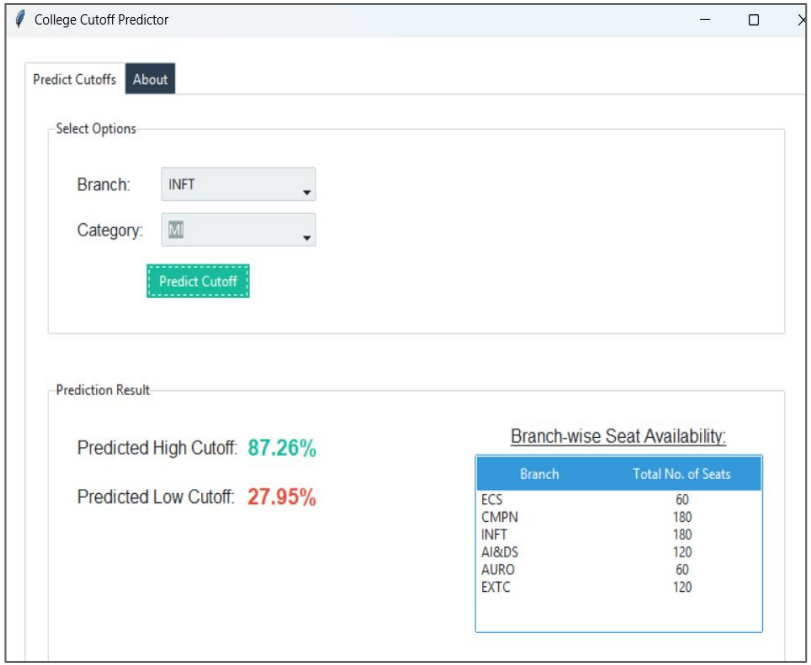


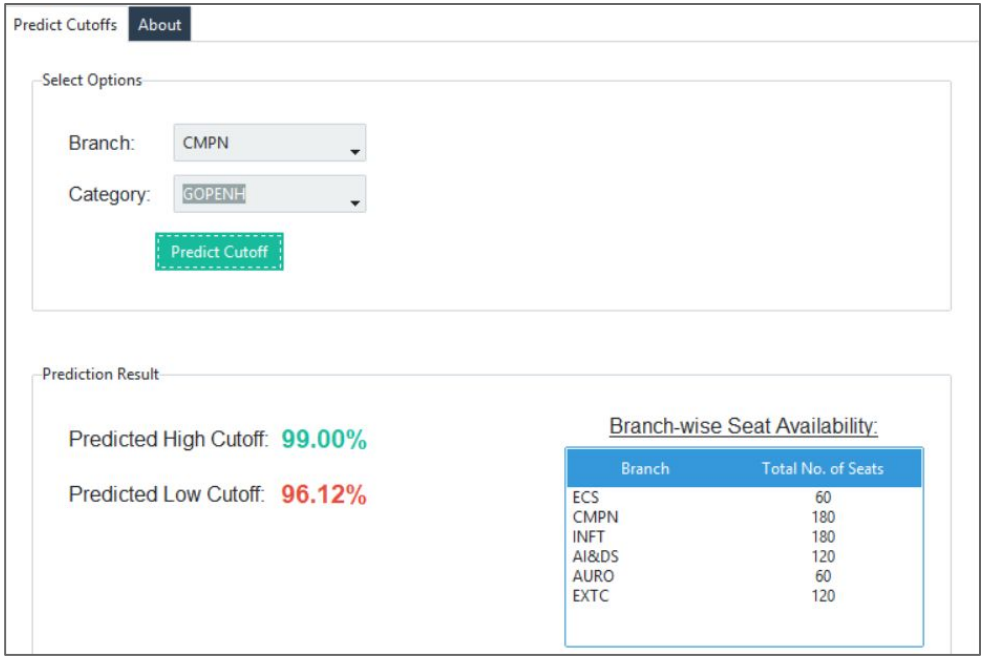
Implementation



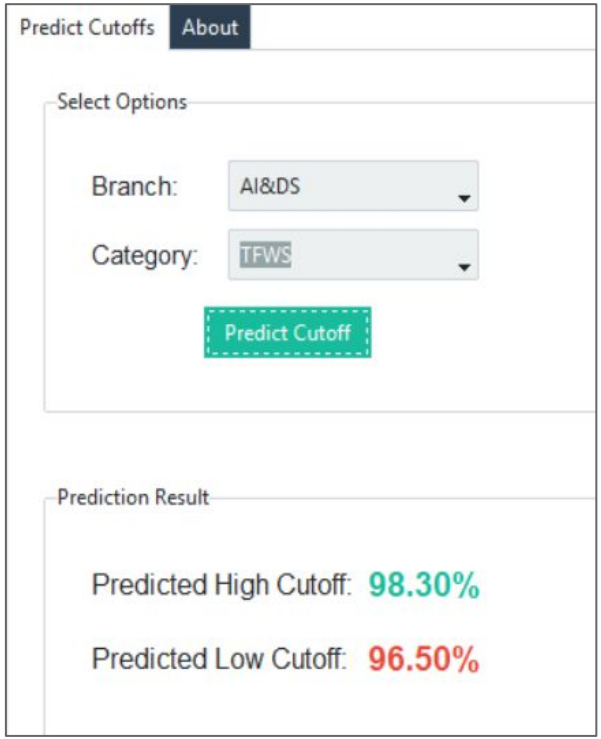


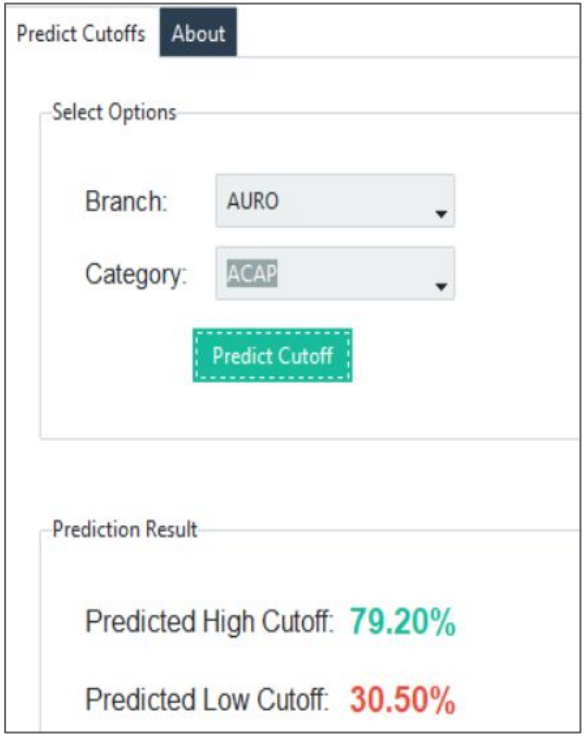
Results (Output)

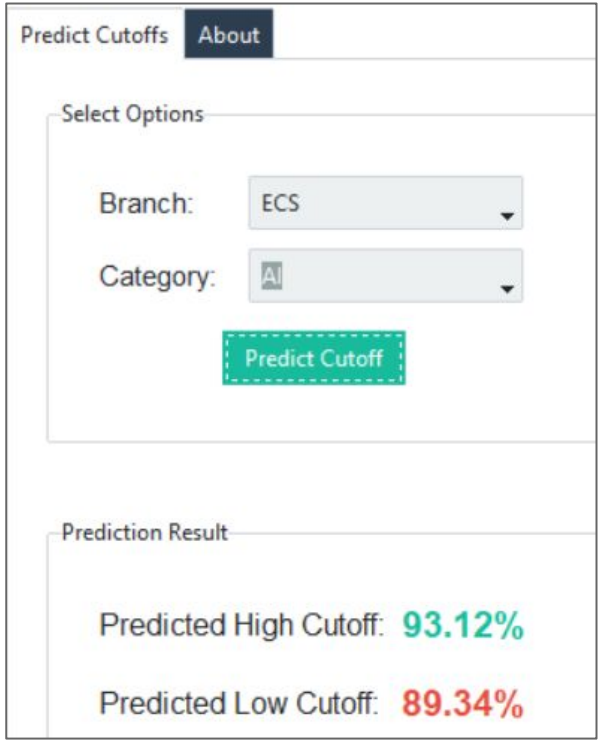




Results (Output)







Conclusion

The College Cutoff Predictor gives a data-based solution to branch-wise cutoff trends prediction and analysis for a given college. The system, utilizing historical admission information and machine learning algorithms, aids students in taking a well-informed decision for their desired branches according to their scores and eligibility.

This utility not only streamlines the admission procedure but also provides convenience by presenting information on historical trends, making it easier for students to manage realistic expectations. Through ongoing enhancements and updates, the cutoff Predictor can prove to be a great help for applicants looking for admission to competitive branches.

Possible future additions can involve real-time updations, interface integration with official admission websites, and more complex predictive models for enhancing accuracy and ease of use.

References

Websites:

https://ieeexplore.ieee.org/document/9825378

https://ieeexplore.ieee.org/document/10151595

https://ieeexplore.ieee.org/document/9930443

https://ieeexplore.ieee.org/document/9700970