Preference Recommendation System for DTE-CAP

Shaikh Qawwam[1], Gadiya Yash[2], Ugale Akshay [3], Alhat Madhukar[4]

Department of Computer Engineering

AISSMS College of Engineering

Shivajinagar, Pune 01

Guide: Professor A.S. Deokar

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Abstract - *There are more than 1000 engineering colleges in Maharashtra, admission to which is governed by DTE (Directorate of Technical Education). DTE carries out the admission through CAP (Centralized Admission Process).The process of admission is very complex and continues for about 1.5 months. In this process, the students who aspires to take admission in government quota are suppose to register first. After verification of documents at Facilitation Centre, the students are supposed to give their preference list of colleges. Then based on their marks, Category, Home University and other attributes, a college is allotted to them in three consecutive forms.*

It's very difficult for the students to and out suitable colleges for them based on their CET Score, Merit number, category, home university, etc. Various colleges provides degree in engineering in various streams (IT, Computer, Mechanical, Electrical, civil, etc). Thorough analysis of colleges and their cutoffs is required in order to get the most correct preference list. It's very tedious job for a student to and the suitable colleges which provides preferred stream and to analyze it's last three years cutoffs in order to predict whether that he can get one of those colleges in CAP.

80% of the students make mistakes in their preference list due to lack of knowledge, improper and incorrect analysis of colleges and insecure predictions. Hence repent and regret after allotment. Our project will solve the general issue of the student community by using technology. We are designing preference recommendation system for students who aspires for taking admission in engineering through CAP. Our system will generate the most suitable preference list for the student.

*Key Words***:** DTE, CAP, CBF.

1. INTRODUCTION

DTE is an abbreviation used for Directorate of Technical education, Mumbai. It is a governing authority which governs the admission to technical and professional courses in Maharashtra. The courses under this are Engineering, pharmacy, Diploma, etc. The admission process is Centralized Admission Process CAP The admission process has been revised from the academic year 2016-17[1]

CAP is very complex and lengthy process. It continues to about 1.5 months. The students need to keep attention on dates and catch the schedule. In this process, the student who aspires to take admission in government quota is supposed to register first. After verification of documents at Fascination Centre, the students are supposed to give their preference list of colleges. Then based on their marks, Category, Home University, etc , a college is allotted to them in three consecutive form. It's very di cult for the students to and out suitable colleges for them based on their CET Score, Merit number, category, home university, etc .Various colleges provides degree in engineering in various streams (IT, Computer, Mechanical, Electrical, etc). Thorough analysis of colleges and their cutoffs is required in order to get the most correct preference list. It's very tedious job for a student to and the suitable colleges which provides preferred stream and to analyze it's last three years cutoffs in order to predict whether that he can get one of those colleges in CAP.

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1.2 Problem Statement

There is no such thing available on Internet which can help students to generate their preference List based on their decisions. Only rank predictors are avail-able on Internet which predicts the merit number of the student. Most of the Rank predictors have awed algorithm. Some of

the rank predictors does not take into account the category of student thereby predicting wrong merit numbers. Some does not consider the home university hence predicts only All India Rank or Maharashtra Rank. These Rank predictors have a limited scope and are still to be improved. What an engineering admission seeking candidate need is not rank generator because he will get his merit number once the final merit list is displayed by authority. What a students need today is something which can help them in deciding their preference list.

The problem statement of our project is "To generate the most suitable preference list for a student aspiring to take admission in engineering through DTE CAP in government seat based on his category, CET marks, merit number, home university, his preferred city, his preferred location, etc from last 3 years cutoffs data."

In this study we will try to develop the most e client and extra-ordinary algorithm which should predict the best results. We will try to develop a system which will help students making their preference List based on their requirements.

1.2 Purpose

The aim of the project is to generate the most suitable preference list for a student aspiring to take admission in engineering through DTE CAP in government seat based on his category, CET marks, merit number, home university, his preferred city, his preferred location, etc from last 3 years cutoff data.

2. Literature Survey

Only rank predictors[1] are available on Internet which predicts the merit number of the student. Most of the Rank predictors have awed algorithm. Some of the rank predictors does not take into account the category of student thereby predicting wrong merit numbers. Some does not consider the home university hence predicts only All India Rank or Maharashtra Rank. These Rank predictors have a limited scope and are still to be improved. What an engineering admission seeking candidate need is not rank generator because he will get his merit number once the final merit list is displayed by authority. What a students need today is something which can help them in deciding their preference list.

3. Proposed System

As we have studied the Content based filtering[2] algorithms which can be used to solve the given problem. The algorithm which is expected to have higher accuracy in

recommending the best preference list of colleges is used. This project would prove helpful for students minimizing their time in searching colleges and predicting whether they will be allotted the desired college or not. And also will help in deciding what should be the order of preference. Our system consists of modules which describe the various aspects for recommending colleges[3], details of the same, branches and comparison with other colleges.
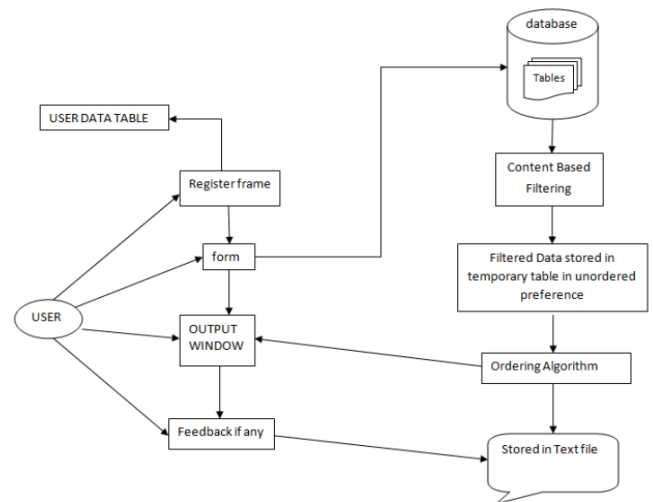

Fig 3 :- Proposed System Architecture

Our Application comprises of modules which are as follows:

Login:- Full name, e-mail id, captcha will be taken from users. E-mail ID and full name will be stored in a database to keep track on users. Captcha verification is done to separate human and robots. This is will be the main login page for the software. Every time user will use the software he will be verified at this point. Refer fig
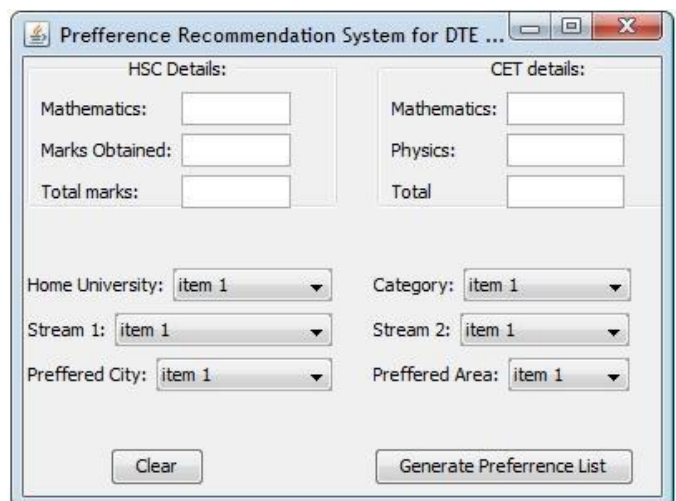
Requirement Input:- In this module user will enter his details which include HSC details, CET details, CET merit number(Rank), Home university, preferred stream 1, preferred stream 2, preferred city and preferred location. The above details are taken from a drop down list.   Refer fig.

Background processing:- With respective to the input received, the content-based filtering algorithm or cognitive filtering is applied on database. The temporary table is created which would contain filtered data. This table will contain the colleges which should be included in preference list in unordered or random order. Proper ordering is done on this data with the function getordered()[4]. The main thing which we are considering is placements of the college. And as we all know, it is quite open secret that the colleges with higher cutoffs have better placements. So the colleges having greater rank cutoffs are given first preference. The second thing we are considering is location of the college. For example, AISSMSCOE and SKNCOE, Pune have almost same cutoffs, so the preference will be given to the college which is in or near to the preferred location. Accordingly, a list of colleges will be displayed to the user. On the basis of his input and his priority using Content- based filtering[2] algorithm his preferred recommended list is generated.

Suggestions and feedback:- It is one of the most important module of any software. We also have this module in our project. In our project, after the successful generation of preference list, the users are encouraged for giving feedback and suggestions. Received feedback and suggestions are stored in a text file. Each time the new user gives the feedback, le will be appended.

Advanced Search:- Although it is difficult to include this option in our project, If the time and resources permits us to include this advance option, we do have plan to include this in our project. We have started making a google form to collect interest rating by a survey. Interest fields includes attributes like infrastructure, cultural activities, technical activities, sports, NSS and other attributes include faculty, hostel, placement and fees. Based on the feedback given by the students of various colleges we have averaged their ratings to get a mean value. In this module user will be asked to give his candidature details and his interests in co-curricular and extracurricular activities. According to his merit and his interests, colleges will be shortlisted based on their merit, interest, fees and locality.

4. Results & Discussions

This application will be able to connect to the database and take the input through Graphical User Interface. The application will be able to navigate the user properly. The application will also be able to create new

database to store CET marks and rank which would b used as a training set for Rank predictors. The application will be able to display the generated preference list and will be able to receive the feedback from user and store it in a text le

5. Conclusion & Future scope

The existing system does not consider location attribute while generating the preference list. Also the existing system does not store the CET details to generate the training set for Rank predictors[1]. The existing system does not implement the machine learning algorithms. Proposed system algorithms are highly modified and more consistent.

Thus, on the basis of literature survey and by analyzing the existing system[7], we have come to a conclusion that the proposed system will not only aid the students to decide their preference list but also generate the training set for rank predictor systems.

REFERENCES

[1] http://www.stupidsid.com/knowledge-hub/engineering/admissions/62-knowledge-hub/engineering/engineering-admission-process/108-centralized-admission-process-cap-engineering-admissions-stupidsidcom

[2] The Application of Data-Mining to Recommender Systems (J. Ben Schafer, Ph.D. University of Northern Iowa)

[3] Enhancing the Accuracy of Movie Recommendation System Based on Probabilistic Data structure and Graph Database.

[4] A research paper on Recommendation Systems (stanford university) http://infolab.stanford.edu/ ullman/mmds/ch9.pdf

[5] Recommender systems: A Computer Science Comprehensive Exercise Carleton College, North_eld, MN.

[6]   Predicting Likes: Inside A Simple Recommendation Engine'sAlgorithms https://www.toptal.com/algorithms/pre-recommendation-engine

[7]   IBM Recommendation system
https://www.ibm.com/developerworks/library/os-recommender1/