MBBS College Predictor

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ABSTRACT —

Students encounter many difficulties in entering the university of their choice. By selecting the right college based on score and area of interest, the current state of the MBBS admission process is neither complicated nor that easy. Accurate selection, which varies according to entrance test results and academic results, is very important for applicants to complete the application form. Hence, it is difficult for students to arrange and shortlist the right university of their choice based on their merits. The proposed college admission predictor uses the number of places allocated to students in each college to predict the most likely colleges.The system also takes various files for analysis such as student area (AU, SVU, OU), category and grades. Based on this, it predicts the probability that a student will be admitted to University College. The proposed system would allow students to prepare lists of colleges that could be filled out during the admissions process. The system also takes into account AIQ, that is, students who will enroll in a non-resident state. Feedback can also be obtained from users, which will help in predictive evaluation and improve performance factors.In the current circumstances, it is often difficult for students to find suitable institutions to pursue their studies according to their own circumstances. There are tutoring agencies and online applications that recommend colleges, but they charge huge consulting fees and online applications are not accurate. The proposed system "MBBS COLLEGE PREDICTOR" predicts the probability that a university or college can obtain a place for a student. We will develop a template that gives a list of universities a student could attend.

Keywords: AIQ(All India Quota)

I.INTRODUCTION

Competition in the industry has increased dramatically in recent years. Increased competition has led to problems such as job loss and high demand for new skills. In this competitive environment, students should enroll and study at the institution that suits them best. This will help students improve their skills to meet industry requirements and ensure proper placement. Therefore, getting into the best universities plays a major role in determining the future of any given student. Although the MBBS program's admissions process has become easier than ever before, there are still some risk factors that students mayfind difficult to understand. For students who belong to many categories such as Open, Local University, Outside Local University, Reserved categories (SC, ST, OBC, etc.), it will be difficult to determine which university they will join. The problem is therefore compounded by the fact that it is difficult for students to understand which colleges they are likely to gain admission to.

Applicants should prepare a list of about 15-20 universities that suit them best based on their academic performance and preferences.But the choice of colleges to fill in during the admissions process should be planned, as wrong choices can lead to wrong college assignments. Due to societal pressure and increased competition with other applicants, students often choose the wrong college preferences, preventing students from entering qualified colleges.

In order to prepare an effective list, applicants should individually browse all desired college websites or online resources such as mobile apps. Then look at previous year lastranks and select the list of colleges they are eligible for and shortlist them based on their preferences. In order to reduce student stress, we came up with the idea of a computer-based approach that aims to automate the process and remove the risk factor of finding the best number of qualified colleges in their area.Users are required to provide their academic records and the app predicts the most suitable universities based on their preferences, courses, regions and university divisions. The system also generates a list of colleges based on the above criteria, which will help them filter out desired colleges and fulfill admission applications more reliably and easily. A new addition to the counseling system is that it also takes into consideration the all India quota, excluding different percentage of AIQ students, students . Students with border rank are given will get more benefited by this feature for possible university admission.

This only predicts the Category-A seats for Students ,ofcourse only category-A seats are held up counseling process also .we have two more categories namely category-b and category-c.As to have a clear idea about this lets look into the Fig.1.According to the below figure we will be having government medical colleges and private medical colleges.For these colleges the categories and fees structures varies more.Category-A means a government Seat ,where the fees structure is very compared to other categories.Category-B comes under middle category like management seats in private colleges.Category-C comes under NRI seats.
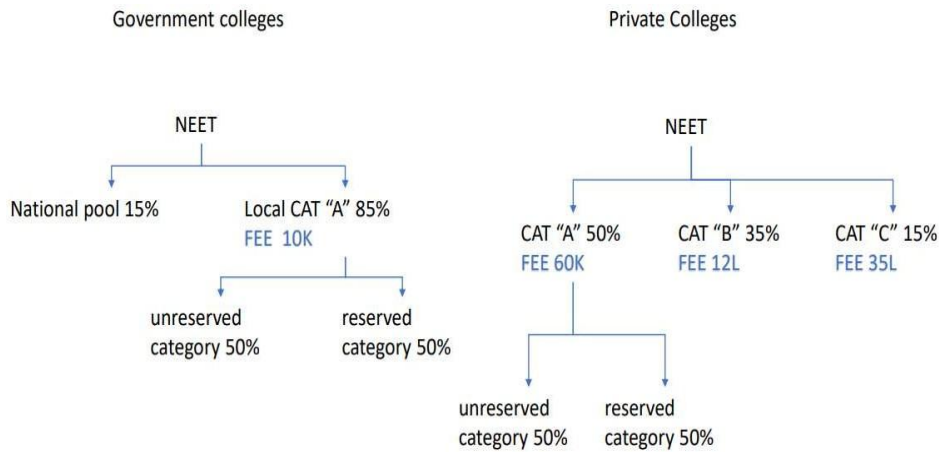
Fig .1.

II.FUNCTIONAL OVERVIEW

Data Collection and preprocessing

In order to design the proposed system, we need some data such as university data which contains the number of allocated seats for each university according to different caste categories, open categories, district categories. The data we use in this system is real-time data published by NTR Health Sciences. Currently we only consider one state Andhra Pradesh to predict college of a student. There are a total of 30 universities in A.P state. Among the 30 universities, two universities are Muslim minority

universities. Only students from the Muslim minority can be admitted to these two universities.Coming to other universities, one of which is a state university that also accepts OU students. In this university data, we have the number of seats allocated to universities based on two regions, one is local and the other is non-reserved. We also have other categories like General, CAP, PH, PMC, NCC, Sports & Games, Scouts & Guides and EWS.These categories are compounded with each caste category like OC, BC-A, BC-B, BC-C , BC-D, BC-E, SC, ST.

We also have another dataset called Student data, also known as Merit List, which contains information about eligible candidates for the NEET exam. We collect this information from NTR Health Sciences, and this site also publishes other merit lists such as CAP, PH, NCC, Scouts&Guides, Sports&Games.So, after rearranging and pre-processing the data, we will end up with two sets of data, CollegeData

(Fig. 1) andStudentData(Fig.2).

The AU region means Andhra university surrounding colleges and in those we will be having data about the number of seats each college holds for both local and unreserved categories.And the same goes for the SVU region ,which means the Sri Venkateswara University surrounded colleges.Addition to those we have one state wide college which holds the seats for following regions OU,SVU,AU and unreserved category.
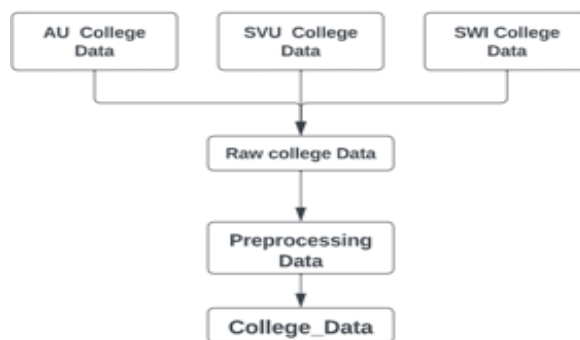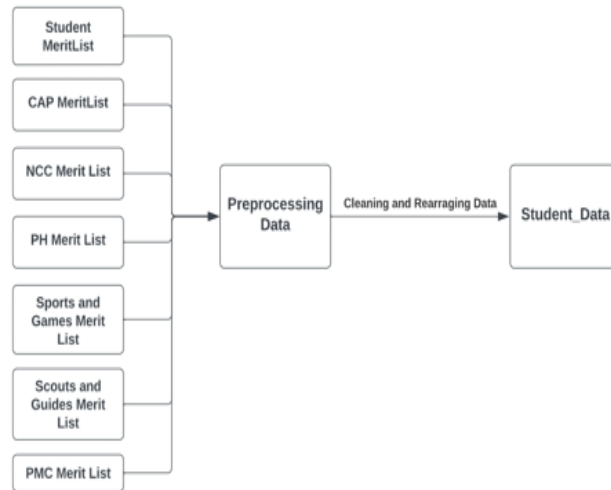

Fig. 2.

Fig. 3.

Algorithm

The algorithm we use here is a general approach. In this approach, we have to rank universities from high priority to low priority. The constraint we use to define a university is the university's last ranking in previous years. The college with the lowest ranking at the end is selected as the highest priority and vice versa.

We only need some restrictions like CAP, NCC, PH etc. when we process student data using merit list for CAP, NCC, PH and other categories, we need to organize student data without duplicate records.

Once the two data sets are aligned, we will assign seats to students in order of universities .If a student receives a University ID, which uniquely identifies the university, the student can apply to the university and also eligible to apply the colleges which are after the allotted college but should follow the same order of list of colleges displayed.

Let's see how the algorithm works with an example. Let us see that there are three quorums in order.

For this example, we only consider three categories to make the logic easier to understand. Let's say we have three universities with a total of 30 applicants, but we only have 11 places.

CollegeData:

College_Name	OC	BC	SC
College_1	2	1	0
College_2	2	1	1
College_3	2	0	2

OC is generally believed to refer to upper caste seats. In fact, the real meaning behind OC is open category, i.e. seats are awarded based on merit regardless of reservations.

At College_1, we have two places for outstanding students, and the next BC Reserve will have one place, as will SC Reserve. The following universities will also follow the same process.

Student_Data:(After Allotment update)

Student_Id	Caste Category	College_Id
1	OC	College_1
2	OC	College_1
3	SC	College_2
4	BC	College_1
5	OC	College_2
6	OC	College_3
7	BC	College_2
8	SC	College_2
9	SC	College_3
10	SC	College_3
11	BC	
12	BC	-
13	BC	-
14	OC	-
15	OC	-
16	OC	-
17	OC	-
18	OC	-
19	OC	-
20	BC	-
21	BC	-
22	BC	-
23	SC	College_3
24	SC	-
25	SC	-
26	SC	-
27	SC	-
28	BC	-
29	SC	-
30	OC	-

Since we don't have many subcategories, we can understand the basic logic, but in real time Scenario we will be having a lot of universities, in that we have region categories, and in these regions, we have caste categories, which can also be a little complex to design and understand.

As can be seen from the table above, everyone thinks that there are only 11 places, so the top 11 applicants can only be admitted to the university they want, but this is not the case

The student who placed 23rd entered college they wanted college. Therefore, with this analysis, we can ensure that students will benefit from this proposed system.

In this regard, we can also provide an AIQ that does not include in many websites and manual calculations, which means that if 5% of students are admitted to universities in non-resident states, residents have the opportunity to be admitted to their universities. For real-time data, we exclude three percentages of AIQ, which are 5%, 10%, 15%. After removing 5% of the data from the student data, the same allocation process is repeated, also for 10% and 15%.

III.SYSTEM DESIGN

Design Overview:

When developing a website, we have two parts, the front-end and the back-end. We will design a user interface for this proposed system to improve readability and comprehensibility for users. We can use any booming UI technology like React or Angular.

Here we need to take input from the user and based on that input filter the data and display a list of colleges they might attend.

The flow below given (Fig. 3) is a basic flow how the data is going to flow and finally displays the output.We will also have a admin page where we can see number of users using the application and how many times they are using.

In this we have two types of users current participant and not a current one.we will be having two different forms for each to fill the data or to enter the details.
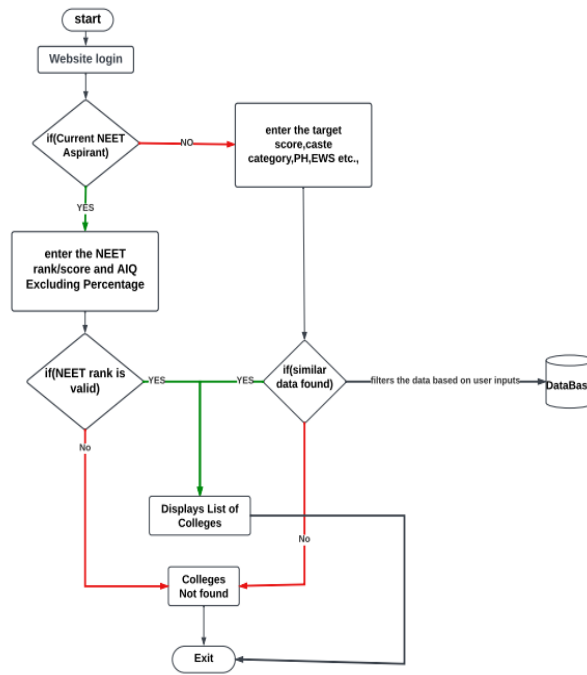
Fig. 4.

In this model, we will have two scenarios, one about current NEET participants and one about non-existing NEET participants. NEET applicants now have to enter details such as NEET roll number and AIQ excluding percentage. If the roll number they entered is valid, it will show the college assigned to them and if the roll number is invalid it exits. Second, this let long-term students know which colleges they can attend if they have certain grades, and there is no guarantee because the latter is just a guess.

In this we will be having two types of users who will handle the system like one is customer,means students who use the website and the other is admin, means who manages the system.In the below diagram we will be seeing how the data flows in both perspectives.

In the Administrator flow we will able to handle the data and can view the data like how many users are using the website and list of colleges and the number of seats.and we can add many features to it.(Fig. 4.)

In the User flow we will be logging in through the mobile number through otpauthentication.After that there will be Two forms for two cases one is for current NEET aspirant and Not a Current NEET aspirant.In those forms we will be entering the details and the output will be displayed by filtering those input details.Thefavourable colleges will only be displayed because out of 10000 students who have qualified for NEET and there are only 3500 seats for the students in Category-A
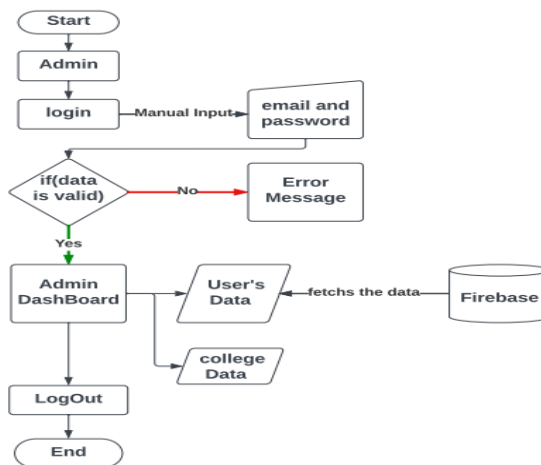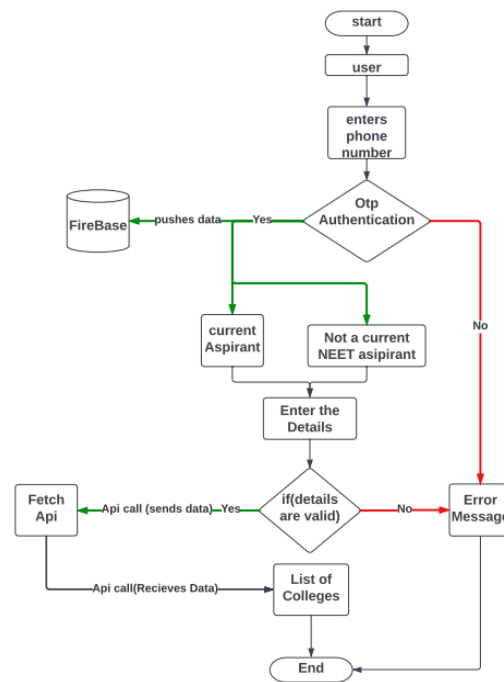
Administrator flow:

Fig. 5.

Userflow:

Fig. 6.

IV. IMPLEMENTATION DETAILS

SQL :

SQL backend service is most people's first choice because of the handy features and functionality it offers. SQL technology is essential for optimal management and ease of application creation. Relational databases use it to create database interfaces.

Stored procedures are prepared SQL code that you save so that the code can be reused over and over again. So if you have an SQL query that you write over and over again, save it as a stored procedure and call it to run it.

You can also pass parameters to stored procedures so that the stored procedure can act on the passed parameter values.

We will use sql to assign colleges to students. To do this, we'll write a few queries, and since we need to run those queries multiple times, we'll write stored procedures for each region and each category it contains.In this case, each university is given a unique ID and students are updated and given a university ID to which they can be admitted.

Node.js:

Node.js offers an interesting intersection of front-end and back-end technologies. Node.js relies on JavaScript, traditionally the client-side front-end web scripting language, extending the capabilities of JavaScript to run on the server-side back-end parts of web application architectures and serverless architectures.

Node.js is used in this proposed system as a framework to retrieve data and display output.Typically, this is an API that acts as a bridge between two systems. Technically, it acts as a bridge between the user interface and the database.

React:

React is a tool for creating UI components and entire user interfaces. It's about composing visual elements, binding data to those elements, and specifying the logic that controls them.

In the proposed system, we will use this React in designing our user interface through which it will take various inputs from the user such as NEET role number ,which is unique per participant , also takes the caste and other category qualification details.

After data preprocessing and cleaning, we can write SQL queries as stored procedures, then we assign colleges to students ,then we need to write APIs to fetch the data and store the information to display the information on user interface. The filter for Predicting the Universities is based on the information we get from the UI. In this UI we have two cases, the first case is for current participants and the second case is for long term candidates. For the first case, we need to enter NEET Reg. Number, Caste Category, CAP Eligibility (yes/no), NCC (yes/no), PH (yes/no), PMC (yes/no) ,

Sports and Games (Yes/No), Scouts&Guides (Yes/No).

Regarding the second case, we need an input every detail as current participant inputs except the NEET registration number, Based on the given input, the data will be matched and filtered and the output will be displayed.

VI. CONCLUSION

The web application includes a user-friendly interface. It asks users to fill in mandatory information and offers students the chance to get accepted into a university.

Students can also use the list of colleges during the admissions process based on the list of colleges available for application. Therefore, our application will help students easily and smoothly enter the most suitable and ideal university. It also gives a better idea of how to choose colleges in a particular order without losing the opportunity for admission in a university.

This proposed system covers all students in all categories, even marginally ranked students and also useful for students who are not currently NEET participants.

VII. FUTURESCOPE

This project can be extended in several dimensions for future work. The moderate college choice screenings are currently limited to the Andhra Pradesh region and could be gradually expanded to cover the whole of India for students in all streams, grades and entrance exams. The process of entering data into the system is manual and can be automated, administrators/webmasters do not need to enter empiricaldata manually.

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