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USA UNIVERSITY RECOMMENDATION SYSTEM

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Abstract: The recommendation system has become a necessity in the modern world. This recommendation system encompasses a wide range of industries, including education, entertainment, health, business, and so on. The University recommendation system is a system that makes suggestions, and students are assigned to the appropriate university based on their scores. Students frequently come to a halt as a result of the rapid growth of data volume and a lack of educational knowledge and choose incorrect universities as a result of it. As a result, there is a need for a recommendation system that can understand user needs and recommend suitable universities. In this paper, we present an undergraduate and graduate university recommendation system that can assist students in selecting the best graduate university or undergraduate university for their academic profile. Here, we used a variety of data-mining techniques to transform the student database into a universal database format by using academic data from successful students who were able to study abroad. Following that, we created a machine learning algorithm capable of calculating the similarity between training and learning. Test results are based on weighted scores. We computed the N similar users for the test users using the K nearest neighbour algorithm and the weighted functions algorithm, and we recommend the top K universities to users based on the N similar users.

Keywords: KNN, Feature Weighted, Recommendation System.

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I INTRODUCTION

After completing their undergraduate studies, many students left their home country to attend graduate school. The Number of students entering graduate school is steadily increasing every year. The Process of obtaining a fully-funded graduate degree is systematic and competitive. It becomes more difficult, the chance of admission becomes unpredictable. Students will apply to various educational institutions around the world for admission application procedures based on his\her background and standardised test results are GRE, IELTS and TOEFL. They include but are not limited to. Admission is granted to qualified candidates based on their academic profile, standardised test results, work experience, and research. The most important step in applying for graduate and undergraduate programmes, however, is selecting the institutions. The effective applicant database information helps answer questions such as: Which criteria determine the applicants' financing potential for a specific basic school? What Are The basic criteria required in

order to receive funding in the Research Training Group after deciding on the best degree? Data mining techniques are extremely helpful in detecting hidden knowledge of these fundamental and dynamic types of data. The main aim of the analytical study is to develop a recommendation system for graduates and undergraduates to explore past information for students already enrolling in graduate and undergraduate programmes. The aim is to analyse the data relevant to help them choose the university deemed work on the idea of their educational record.
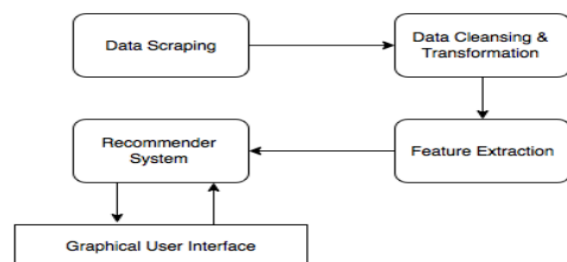

Figure 1. Flow diagram of complete process

II INSPIRATION

Education became an important factor in international understanding at the beginning of the 20th century. The changing attitudes of people caused by increasing international responsibility can influence public opinion and potentially influential foreign policy. You are able to develop new perspectives on academic and real-world issues, gain foreign language skills, experience personal development, and develop an enjoyable career. With increasing global awareness, student learning and personal development are reinforced by the advantages of higher education abroad. It could improve the world view and intercultural awareness, raise the awareness of and influence students' own national identity. There are a number of reasons why students go to universities abroad: studying abroad to improve their prospects, improve their skills in foreign languages, or studying in academia with an expert. Others are looking for personal freedom, adventure or to understand a different lifestyle. Sadly, most students don't take part in higher education programmes abroad. These students identify money and time as key factors in their decision. Other reasons include problems with the transfer of unnecessary credits, delayed graduation and ignorance of a foreign language. However, many non-English speaking countries/regions do not require foreign language skills to study abroad, as they offer English Courses. With the help of our proposed referral system, the student can form an opinion about which graduate school to attend for an appropriate study abroad

III.LITERATURE REVIEW

1. "An approach to a University Recommendation by Multi-Criteria Collaborative Filtering and Dimensionality Reduction Techniques." By" D. Bokde, S. Girase, and D.Mukhopadhyay".They use a multi-collaborative filtering approach to create a university recommendation system, address issues such as scaling and sparseness, and combine dimensionality reduction techniques with collaborative filtering (CF) algorithms.

2."College Recommendation System"by "Leena Despande, Nilesh Dikhale, Himanshu Shrivastav." The system is designed for students, parents and teachers who want to research college in engineering. Recommendation systems fix the overload problem by researching large amounts of data.

3."Recommender Systems Handbook",by "L.Rokach, B.Shapira, Paul B. Kantor".In the context of Recommender Systems, they used the techniques of data mining effectively. In this respect, the classification technique is common preprocessing methods such as the sampling or reduction in dimensionality.

4."Recommendation in Higher Education Using Data Mining Techniques" by " Cesar Vialardi, Javier Bravo, Leila Shafti, Alvaro Ortigosa".Data mining techniques have been efficiently used to develop a recommendation system to help students decide on their course choice, taking account of previous students' similar academic achievements in a system engineering school in different courses

5. "Graduate School Recommender System: Assisting Admission Seekers to Apply for Graduate Studies in Appropriate Graduate Schools." By"M. Hasan, S. Ahmed, D. Abdullah, and M. Rahman." Consider using K-Nearest Neighbors to generate the relevant recommendation for graduate schools. They generate a weighting score for their training set and one for the test set to calculate the correlation between the two scores.

IV.PROPOSED ARCHITECTURE

Our recommendation system for graduate schools suggests universities to be attractive to applicants. A set of attributes are selected based on the information we have collected from university students online, about graduate and undergraduate schools. Apply the KNN algorithm to suggest the applicant with other relevant universities based on other credentials of candidates and graduate schools with an online data set to find the most attractive graduate or university school. Actual Data From the school includes graduate and student acceptance rate, CGPA, verbal GRE scores, quantitative GRE scores and AWA scores, number of students admitted to school, and enrollment. First, we collect all of the functionalities that can be derived from the available data. Following that, these properties are cleaned and filtered before being used by KNN algorithms and the Featured weighted algorithm to recommend relevant universities to students. Featured weighted and KNN algorithms produce the maximum appealing graduate or undergraduate colleges for every input
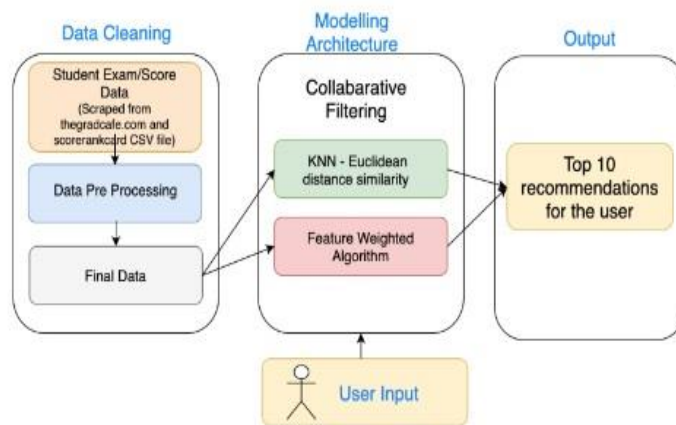

Figure 2. System Flow Diagram

A.K NEAREST NEIGHBOURS:

In KNN, the trained data is compared with the test data and the distances are calculated using the Euclidean Distance. Then it ranks an instance by finding its closest neighbors and recommending the best nearest neighboring universities. Algorithm for Graduate Recommendation System

Input: CGPA, verbal GRE scores, quantitative GRE scores and AWA scores

Output: Top 5highly Recommended Universities

1. Initialize the value of k

2. For getting recommendations, iterate from 1 to the number of trained data

3. Calculate distance between test data and each row in the trained data.

4. Sort the distances in the upward order.

5. Get top 5 rows and recommend to the user

B.FEATURE WEIGHTED:

The weight of all features is taken and the similarity score is found. Based On the similarity factor, the colleges with the highest similarity are recommended. Suppose w1and w2 are the weights and f1 and f2 are the properties of the similarities calculated according to the formula. Similarity Score=w1*f1+w2*(1-f1)

Algorithm for Under Graduate Recommendation System

Input: SAT Score and Maximum tuition fees of User

Output: Top 5 RecommendedUniversities1. For getting recommendations, iterate from 1 to the number of trained data 2. Find the rows in the training data similar to the user provided SAT score and max tuition fees. 3. Calculate the weightage of both the attributes and calculate the score as acceptance rate 4. Sort the distances in the upward order.5. Get the top 5 rows and recommend them to the user.

V.IMPLEMENTATION

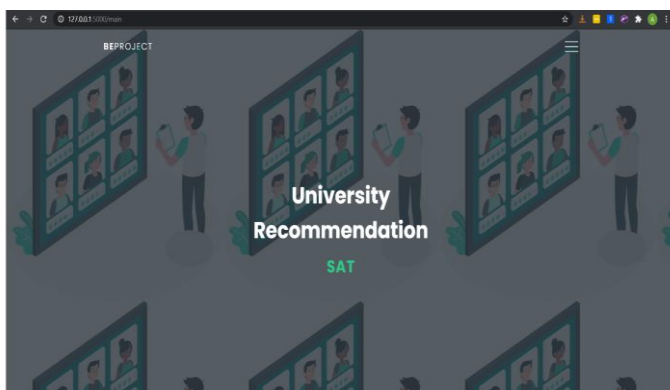**A. Home Screen of University Recommendation System**

Figure 3. Home Screen of University Recommendation System

For functions are included in the home screen of the university recommendation system. First is the undergraduate university, second is the graduate university, then blog page and about
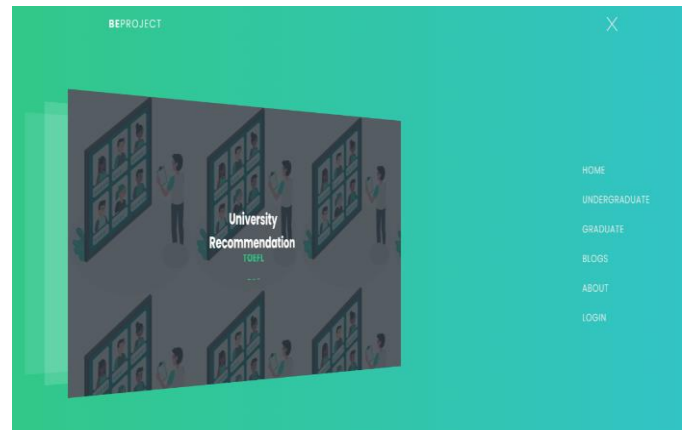

Figure 4. Home Screen

B. Recommend Under Graduate School for Admission

After the user presses "Undergraduate," a display will appear (figure 5,6) where the user needs to fill in all the necessary information to recommend the appropriate undergraduate schools that correspond to his/her profile in this user interface
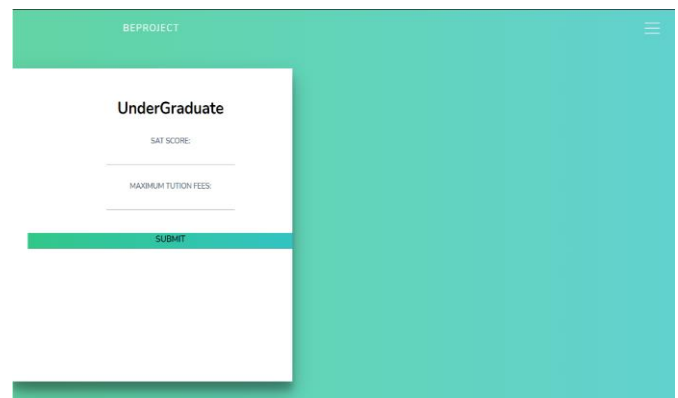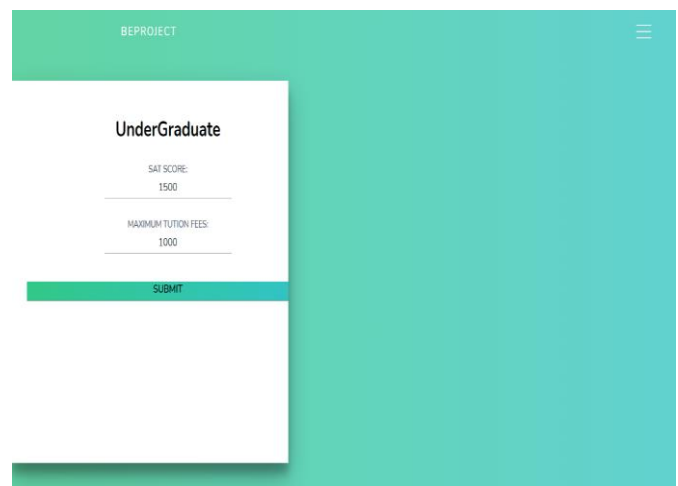

Figure 5.Undergraduate Input Screen

Figure 6. Undergraduate Fill-in value screen

C. Recommend Graduate School for Admission

Once the user clicks on the "Graduate" button, a screen will be displayed (Figure 7,8) where users are requested to complete all their details to recommend appropriate schools that match their profile in this UI for them
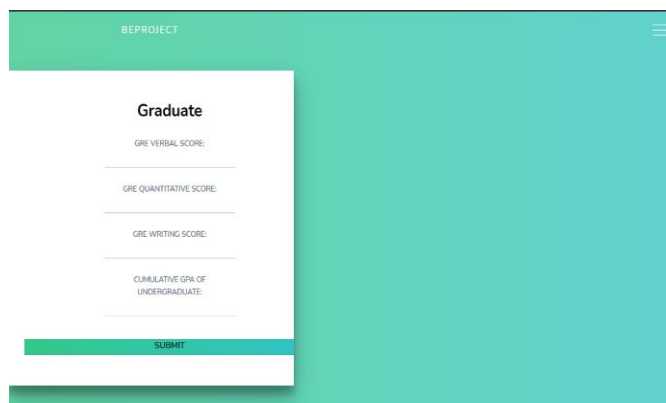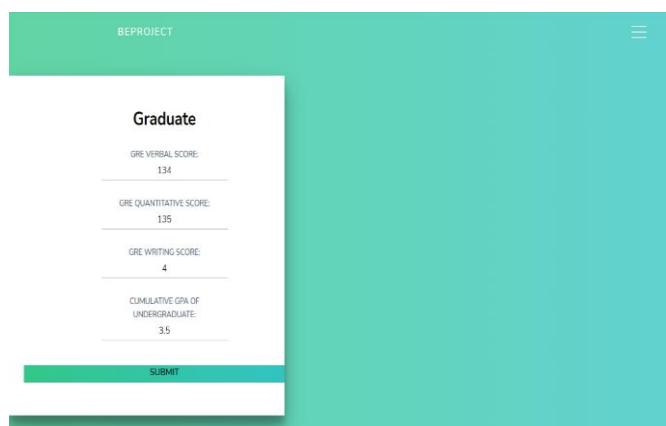

Figure 7: Graduate input screen

Figure 8. Graduate filled in screen

VI.RESULTS.

A. Output of Undergraduate Recommendation

After entering the appropriate data, the student clicks the "submit" button. Our proposed system will display a list of undergraduate universities (Figure 9) matching the given profile of the student.
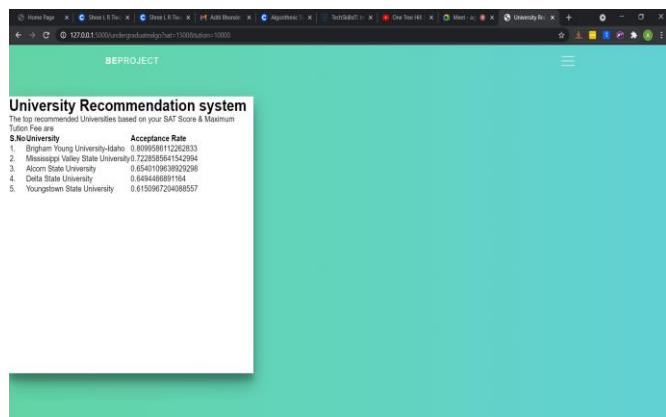

Figure 9. Undergraduate Output

B. Output of Graduate Recommendation

After entering the appropriate data, the student clicks the "submit" button. Our proposed system will display a list of graduate universities (Figure 10) matching the given profile of the student.
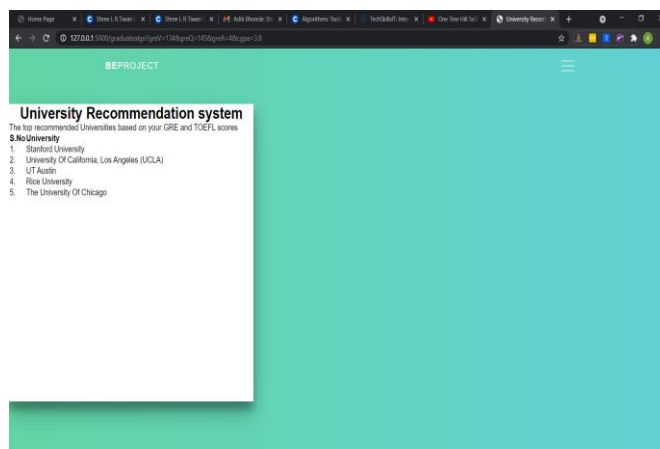

Figure 10. Graduate Output

VII.CONCLUSION

This project can help students make decisions about applying to universities. The data of previously selected applicants can be considered. The Applicant's Academic record is very important to foreign applicants. A method was developed to use the academic performance of selected applicants to create a school recommendation system that can help current applicants enroll. The similarities between training data and test data are first calculated on the basis of weighted ratings. The Weighted Score is calculated based on the prior information from the selected candidates, such as student's CGPA,GREquants, GRE verbal and AWA scores and all other relevant records in the general database. TheK-Nearest Neighbor algorithm for graduate universities and feature weighted algorithm for Undergraduate Universities count the N most similar users, and then recommend the best universities to the users. Or Suggested Recommender System recommends applicants list colleges who are try and take higher education abroad and help them apply in the appropriate school for graduation

VIII.ACKNOWLEDGEMENT

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