PREDICTION OF ENGINEERING BRANCH SELECTION FOR INTERSTUDENTS

S. Anitha[1], Dr.R.Yadagiri Rao[2], C. Srinidhi[3], D. Jyothi[4], B. Varshitha[5], B. Naveen kumar[6]

[1]Assistant professor, Department of CSE, Sri Indu Institute of Engineering & Technology, Hyderabad

[2]Professor, Department of CSE, Sri Indu Institute of Engineering & Technology, Hyderabad

[3,4,5,6] IVth Btech Student, Department of CSE, Sri Indu Institute of Engineering & Technology, Hyderabad

ABSTRACT

Bachelor of Technology (B.Tech) is a professional undergraduate engineering degree program awarded to candidates after they complete four years of study in the field. Engineering is one of the most popular courses in India and there are many institutes that offer the course to aspiring students. For admissions, the most common B.Tech entrance examinations are JEE Main and JEE Advanced. Along with these national level entrance examinations, there are many state and private level entrance examinations that the students can attempt for admissions. The basic eligibility criteria for B.Tech is class 12 with Physics, Chemistry and Mathematics. However, there are additional criteria in every entrance exam and institute.

Student by himself is not mature enough to take right decision in his early life. Since there is no other reliable source generally available that can guide the student towards the most suitable direction, so this recommender system has been evolved to provide him guidance in selecting a right engineering branch. This system recommend them suitable branch based on their score. In this system, K-nearest neighbors is used to recommend branch and collaborative filtering is used to recommend colleges.

Key words: K nearest neighbors, Collaborative filtering.

1. INTRODUCTION

B.Tech is one of the most preferred courses after 12th. Over the years, the demand for engineering courses at the UG level has been increasing. However, the past trends say that only a limited number of specializations in B.Tech are attracting students, while some of the specializations receive poor turnout of students every year. While B.Tech Computer Science Engineering is one of the top courses in India that attract lakhs of students every year, a course like Mining Engineering, Metallurgy, Instrumentation Engineering and Textile Engineering receive a limited number of admissions. Even though these specializations have good career scope, lack of awareness/ difficulty level of the curriculum maybe some of the reasons for poor enrollment rate.

Engineering is the most famous and most sought after career in India. Every year lakhs of students complete their schooling and come out in the world of new opportunities where they have millions of options. If someone wants to make his/her career in engineering then the stream itself has different courses like B.E/B.Tech, Diploma courses and integrated engineering courses.

Also, there are M.E/M.Tech courses for candidates who have completed their engineering undergraduate degrees. Because of the variety of courses, many times students are unable to know about all the available courses for them. That is why, the Careers360 team has compiled a list of engineering courses after 12th to help the students. Read the full article to know about all the available engineering courses after Class 12th.

On the basis of research conducted by Careers360 team, top 5 B.Tech courses in India that students take after 12th are Computer Science and Engineering, Mechanical Engineering, Electronics and Communication, Electrical Engineering and Electrical and Electronics. In order to complete this research, we have examined the first choices of top students across 23 different entrance examinations in 3134 colleges.

1.1 Objectives of project:

Engineering is the most famous and most sought after career in India. Every year lakhs of students complete their schooling and come out in the world of new opportunities where they have millions of options. If someone wants to make his/her

career in engineering then the stream itself has different courses like B.E/B.Tech, Diploma courses and integrated engineering courses. Also, there are M.E/M.Tech courses for candidates who have completed their engineering undergraduate degrees. Because of the variety of courses, many times students are unable to know about all the available courses for them. That is why, the Careers360 team has compiled a list of engineering courses after 12th to help the students. Read the full article to know about all the available engineering courses after Class 12th.

- Career Aspiration & Goal

- Identify your Zeal & Passion

- Do a Good Research of Career Prospects

- Identify the Best Institutes/ Colleges

- Check Placement Trends

2. LITERATURE SURVEY

How to Choose a Right Specialization/Branch in B.Tech after Class 12th?

we tried to guide students on choosing the right specialization in B.Tech after Class

12th. Many students have questions in their mind like which B.Tech specialization is best after Class 12th, which B.Tech specialization land you in jobs with highest salary package etc. All your questions have been answered in this article.

Welcome to the admission season; in addition to summers, winter & rains, we in India have to acclimatize with this additional season. In this climate one get's to savour enticing advertisements from various colleges imparting professional education. Since long, engineering has been the most preferred & "rest assured" choice for a professional career. It has been time and again proved that engineers are highly versatile when it comes to identifying employment. We have seen engineers getting into multifarious career ventures like creating a milk revolution, telecom revolution or may be becoming a politician, an author, a cricketer or even a magician.

Getting an engineering degree was once like a dream achieved, today it is no more a lucrative profession to pursue. The story beyond engineering college is not very encouraging these days because jobs do not come automatically to the fresh pass out engineers. A very important question to be answered is the reason why are these many

unemployable engineers churned out year on year?

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3. EXISTING SYSTEM:

Engineering is the most famous and most sought after career in India. Every year lakhs of students complete their schooling and come out in the world of new opportunities where they have millions of options. If someone wants to make his/her career in engineering then the stream itself has different courses like B.E/B.Tech, Diploma courses and integrated engineering courses. Also, there are M.E/M.Tech courses for candidates who have completed their engineering undergraduate degrees. Because of the variety of courses, many times students are unable to know about all the available courses for them. That is why, the Careers360 team has compiled a list of engineering courses after 12th to help the students. Read the full article to know about

all the available engineering courses after Class 12th.

Predicting engineering branch selection is very crucial to the students in their further academic. Till now no such applications have not been available to predict the engineering branch.

3.1 Drawbacks of existing system:

Student failed to select best branches

Their academic performance is very low because not selecting proper branch

4. PROPOSED SYSTEM:

The proposed system aims to develop a software for HSC passed students to recommend branch and college to them. This project will help the high school students to get the list of branches as well as colleges based on their scores.

3D graph for Analysis

Algorithms used

a) K- nearest neighbors:

K-nearest neighbors is a simple algorithm that stores all available cases and classifies new cases based on a similarity measure (e.g., distance functions). KNN is a non-parametric technique. The 'k' is a number

used to identify similar neighbors for the new data point. KNN takes k-nearest neighbors to decide where the new data point with belong to. This decision is based on feature similarity. KNN assumes that the data is in a *feature space*. More exactly, the data points are in a metric space. The data can be scalars or

possibly even multidimensional vectors. Since the points are in feature space, they have a notion of distance – This need not necessarily be Euclidean distance although it is the one commonly used. In this system, cosine similarity is used as the distance metric. Cosine similarity is the cosine of the angle between two *n* dimensional vectors in an *n*-dimensional space. It is the dot product of the two vectors divided by the product of the two vectors' lengths (or magnitudes). For two vectors A and B in

an *n*-dimensional space cosine similarity is given by:

b) Collaborative Filtering

Collaborative filtering is a technique used by recommender systems. Collaborative filtering approach builds a model from a user's past behaviors (items previously purchased or selected and/or numerical ratings given to those items) as

well as similar decisions made by other users. This model is then used to predict items (or ratings for items)that the user may have an interest in.

4.1 Advantages:

Selecting best branch from all engineering branch.

Academic performance will be high.

5. FEASIBILITY STUDY:

Analyse the feasibility of the paper at this stage, and propose a business plan, including the overall plan of the paper and some cost estimates. In the process of system analysis, a feasibility study will be conducted on the proposed system. This is to ensure that the proposed system does not burden the company. In order to conduct a feasibility analysis, it is necessary to understand the main requirements of the system. The three key factors involved in the feasibility analysis are:

1. Economical feasibility

2. Technical feasibility

3. Social feasibility

5.1 Economical feasibility :

This study is carried out to check the economic impact that the system will have on the organization. The amount of fund that the company can pour into the research and development of the system is limited. The expenditures must be justified. Thus the developed system as well within the budget and this was achieved because most of the technologies used are freely available. Only the customized products had to be purchased.

5.2 Technical feasibility :

This study is carried out to check the technical feasibility, that is, the technical requirements of the system. Any system developed must not have a high demand on the available technical resources. This will lead to high demands on the available technical resources. This will lead to high demands being placed on the client. The developed system must have a modest requirement, as only minimal or null changes are required for implementing this system.

5.3 Social feasibility :

The aspect of study is to check the level of acceptance of the system by the user. This includes the process of training the user to use the system efficiently. The user must not feel threatened by the system, instead must accept it as a necessity. The level of acceptance by the users solely depends on the methods that are employed to educate the user about the system and to make him familiar with it. His level of confidence must be raised so that he is also able to make some constructive criticism, which is welcomed, as he is the final user of the system.

6. DESIGN:

6.1 Proposed system Architecture:
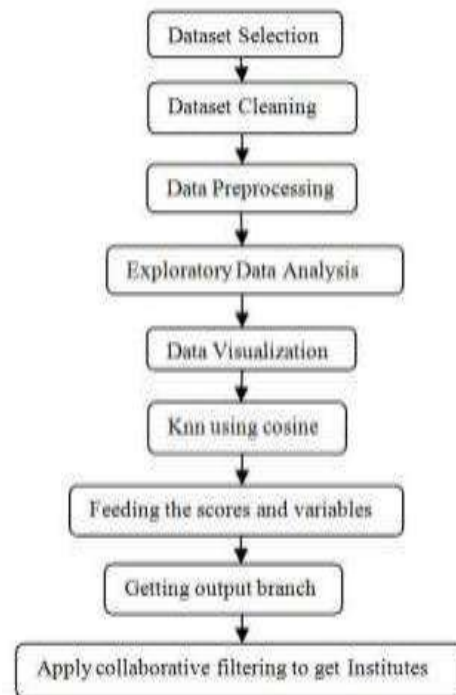
7.IMPLEMENTATION MODULES:

1.Add Add Marks Details

marks for different subjects in different course and each marks is separated by comma and in similar way you can enter any number of marks

2. IEW AVERAGE DETAILS

Average of each course and its subject is calculated and then calculate average of each subject in all courses and based on high subject value the courses will be suggested to student 3. Add/Remove Product from basket.

3. IEW RECOMMANDED COURSE

student can view available courses in different domains such as computers, electronics, civil and etc.

8.CONCLUSION

In this system, content based collaborative filtering is used.Content-based recommenders propose items to a target user based on similarities between the content of the yet unseen

items and the user's preferences. Content based approachutilizes a series of discrete characteristics of an item in order to recommend additional items with similar properties. In

Content-based filtering the system generate srecommendations from two sources: the features associated with the products and the ratings that a user has given them.This typically is treated as a user-specific problem in which a user profile/model is built by understanding user's interest in the product features.

9.FUTURE ENHANCEMENT:

At present our system is providing recommendations based on scores. In future, the system can provide recommendations based on interests as well as score. The recommendations can also be done based on scores and certifications. Deep Learning can be good option to increase the accuracy.

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