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CAREER RECOMMENDATION SYSTEM

Aanchal Patel[*1], Aditi Rathore[*2], Aman Solanki[*3]

[*1,2,3]B. tech student, Dept. of Computer Science,AITR, Indore, Madhya Pradesh, India

ABSTRACT

In today's changing world with evolving new technologies it is important for students to make the right career decision . Students in our country often take the wrong career path by getting influenced by others and regretting it afterwards. There is no proper guidance for them on choosing their subjects or courses. As the number of choices can be overwhelming there is a need to filter , prioritize and efficiently deliver the best solution for the problem, therefore we need a recommendation system to predict the best career option for students based on their skills and interest among the available wide range of choices.This project is a part in progress of education towards better course recommendation. We use a machine learning program that asks the client questions, and recommends the better stream based on the skills and academic performance provided.

Keywords: career, guidance, recommendation system, machine learning

I. INTRODUCTION

Knowing the right career path that has to be chosen is the first step towards our better future. Our Career path defines our whole life but in today's world with increasing technologies,daily new career paths are introduced therefore the number of choices also increases this can lead to confusion among young adults that may lead to wrong career choices .Recommender Systems can be defined as programs and techniques that provide suggestions for items such as products or services that are most likely of interest to a particular user namely individuals or businesses. The concept of understanding a user's preference by their online behavior, previous purchases, or history in the system is called a recommender system. The need for a recommender system has grown from time to time. At First, Entertainment industries exploited the benefits of these systems. Then recommender systems were implemented in e-shopping businesses, online news, but very few companies have tried implementing it in the hiring process. One of the areas wherein such systems can play a major role is in helping students achieve their professional dreams via producing customized career paths based on students choices .Our project is meant to help students make decisions . We use a machine learning program that asks the students questions, and recommends the better stream based on the skills and academic performance provided. Machine learning provides a better ability to upscale, upgrade and obtain results than hard coded algorithms. A machine learning model is an entity that understands the problem – this is obviously better for non-deterministic, real world problems like recommender systems, compared to a pre-programmed system that can do nothing but go by the book. Intuitively, Machine learning is the right approach for this problem, and we have made use of the same.

II. LITERATURE SURVEY

Recommender systems are the systems that are designed to recommend things to the user based on many different factors. These systems predict the most likely product that the users are most likely to purchase and are of interest to. Companies like Netflix, Amazon, etc. use recommender systems to help their users to identify the correct product or movies for them.The aim of these recommender system to help user to choose or make decision .A career recommendation system is basically a system that will help students to choose their career path or field based on their preferences and interest.There are several techniques to make these kinds of recommendation systems.One of the techniques is collaborative filtering. It is also known as the user-to-user correlation method, finds similar users who have the same taste as the target user and recommends items based on what the similar users like. The key step in collaborative filtering is computing the similarities among users. Collaborative filtering recommendation algorithms can be classified into memory-based and model-based.Another method is a content-based recommendation algorithm to use the content that users are interested in to calculate the similarity to achieve relevant recommendations. By means of data mining or information retrieval, a data file model belonging to the user is constructed by combining the attributes and characteristics of the project. The recommendation algorithm adopted by this algorithm is to use the content that the user is interested in to calculate the similarity to realize the recommendation .There is also hybrid filtering .It is basically

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a incorporation of multiple techniques to improve the performance of the recommendation system . The previously discussed recommendation technique has its weakness and strengths. In order to get a better recommendation and overcome the challenges posed by earlier techniques, this technique is sought after. All of the model-based techniques suffer from cold-start in one or other form. It is a problem related to handling a new user or new item. These and other shortcomings of the above techniques could be resolved by using hybrid filtering techniques.

III. METHODOLOGY

A website to guide an interested career, based on his/her interested area. The Proposed website consists of a set of questions with a list of answers as a MCQ's where these questions extract his skills or interested domain of studies. The options or answers selected by the user are further processed and analyzed and then a recommendation is given based on that.the steps to achieve the proposed model:

- Users will be provided with the welcome GUI.The user will log in accordingly.
- When the user logs in for the he/she would be required to fill in the registration details. If the user doesn't have credentials to log in the system, it is but obvious that he/she would first require registering themselves in the system.
- Admin can add and remove questions in the database.
- Admin can select the desired questions from the question database for the test.
- Students can take the test and fill the questions accordingly.
- Result will be generated as per the choices filled by the student and then recommendation is given

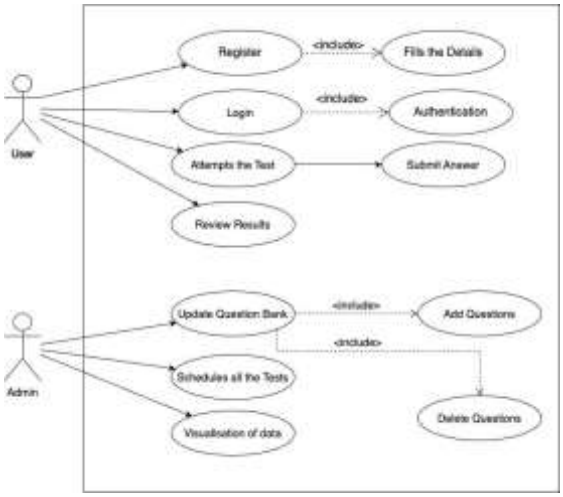
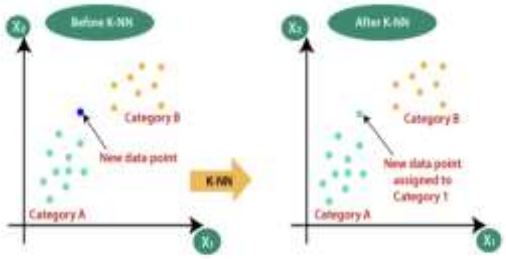


Figure 1: Use case diagram

To recommend the career path test choices is analyzed .We used K-nearest neighbors algorithm in this project which predicts the user's career stream based on the test score input. The k-nearest neighbors (KNN) algorithm is a supervised machine learning algorithm that can be used to solve both classification and regression problems. The KNN algorithm assumes that similar things exist in close proximity. In other words, similar things are near to each other. The KNN algorithm hinges on this assumption being true enough for the algorithm to be useful. KNN captures the idea of similarity with some mathematics - calculating the distance between points on a graph.



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IV. TOOLS AND TECHNOLOGIES

- HTML 5:Hypertext Markup Language (HTML) is the standard markup language and web applications. IT is used to make the website.
- CSS: IT is used to make the website more attractive.
- Javascript: it is used to make the pages more interactive.
- PHP 5.2.0:PHP is aside scripting language development, and also used as a general purpose programming language.
- Python : Python is used to implement machine learning algorithms.
- MySQL: It is an open source relational database management system .It is used to store and manage databases.
- Operating system: windows 7 and above
- Hardware:Intel Pentium 4 Processor and above, 1 GB RAM minimum , 150 GB Hard Disk Minimum.

V. CONCLUSION

Student's bright future is the crucial for development of the country.This is why in this paper we have tried propose a model that will help students select the right career pathway.The opportunities provided by this technology is immense and many students can use it to select the career appropriate to their skills.We have developed a software tool to evaluate the aptitude and personality of a person based on his/her academic level using carefully curated personality and aptitude tests. This tool will help you determine your aptitude and personality traits, and will eventually help you in choosing your own career path. The application has the potential to stand financially in the market but needs to be improved a bit and then presented to Investors looking to invest in such projects. Further studies into the topic can help enhance the precision of the system.

VI. FUTURE SCOPE

In the future, we can develop efficient web applications that can collect data by analyzing and assessing it. Testing methods that can be used to increase accuracy include analytical, memory-based, technical, logical, hobbies, interests in technical and non-technical fields, student performance going back to early childhood, and skill-based examinations. The dataset may be created using data from thousands of students. To have a better understanding, we can attempt to employ clustering approaches. We can also use methods like Time series analysis and Deep Neural Networks.

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