Stream Analysis for an aptitude exam on Career Choice

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Abstract - The demand for an online aptitude test arose primarily to address the shortcomings of the current system. The test major goal is to provide users with more dynamic and user-friendly software. The aptitude test creates a more enjoyable working environment, increases the clarity with which suitable information is presented to the user, and allows for quicker database access and retrieval

Keywords - stream, Career, Aptitude

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INTRODUCTION

Today's society is divided between "haves" and "have-nots." It has been noticed that some streams are revered and in high demand. Students and parents alike concentrate on just these streams, giving them priority over others without considering their talent, aptitude, or other factors. The key issue that has been overlooked, either owing to ignorance or false prestige, is the student's competence, ability, and enthusiasm in pursuing this education and earning his living with the professional education he has obtained for the rest of his life. The current educational system fails to recognise the ward's innate, lateral talents. All of this confuses the student, who continues to compete in a very confined arena and makes a lot of money if he succeeds, then moves on to exploiting others and is revered in society for the fortune he has amassed and the profession through which he was able to do so. [1]

OBJECTIVES

The project's primary goal is to assist users (students) in deciding on a professional path. The system assists the user in deciding on a career path based on their interests in a certain subject. The INTEREST test creates a more enjoyable working environment, better clarity in providing relevant information to the user, and quicker access to and retrieval of data from the database. [2]

LITERATURE SURVEY

The Oxford English Dictionary defines a person's career as "a person's path or development through life or a separate section of existence." The term "career" is used to describe a variety of elements of a person's life, including study and labour. The word "career" refers to an activity or profession that requires particular training or formal education and is regarded a person's lifetime employment. [3]

One of the most crucial choices students make in making future plans that influence their lives is career choice. Career counsellors use various strategies for career advising, according to the findings. When evaluating students, they take into account a variety of aspects. Many of them looked at students' talents, aptitudes, personalities, interests, skills, background information, and IQ, among other things. [4]

SYSTEM ANALYSIS

The various tasks in the system analysis include the following.

1. Understanding application
2. Planning
3. Scheduling
4. Developing candidate solution
5. Performing trade studies
6. Performing cost benefits analysis

REQUIREMENTS FOR SOFTWARE AND HARDWARE

Software Components:

1. Windows 7 or above as the operating system

2. Sql is the query language (Structured Query Language).

3. IDE: Net Beans IDE version 8.2

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4. JAVA jdk 7 is the front-end language (J2SE).

5. MS-Access database [5]

Hardware Requirements:

1. Intel Pentium 500MHz or newer.

2. Minimum RAM: 1 GB

3. Hard Disk: A minimum of 5 GB is required.

4. Monitor with a resolution of 1080 x 786 pixels.

5. A keyboard and mouse are required. [6]

PROPOSED METHODOLOGY

Understanding the Java Platform's many components and the roles they fulfill.

Now we'll go through the many components that make up the Java language and its capabilities in more depth. [7]

Features of Java

The major goal of the Java programming language's development was to make it portable, simple, and secure. Apart from that, there are a number of good aspects that contribute to the language's appeal. Java buzzwords refer to the aspects of the language. [8]

The following is a list of the most essential characteristics of the Java programming language.

1. Simple
2. Object-Oriented
3. Portable
4. Platform independent
5. Secured
6. Robust
7. Architecture neutral
8. Interpreted
9. High Performance
10. Multithreaded
11. Distributed
12. Dynamic

IMPLEMENTATION AND DESIGN

The system design for profession selection include investigating the elements that influence career selection decision-making, establishing decision-making criteria in the career selection process, and determining students' intellect, abilities, interests, and aptitude, among other things. This approach will assist all kids who are unsure of their job options after secondary school and are unsure of what they want to do with their lives. Students will use this system to evaluate their IQ, interest, aptitude, strengths and weaknesses, and to learn about the best job options. They will also use this system to choose the ideal professional route and prepare for their future career.

The following are the major components of an expert system for career selection.

Modules:

Admin

- Main Stream Details
- Sub Stream Details
- Category Details
- Add Question
- View Student Details
- View Exam Details
- View Stream Details.

Student

- Take Test
- Result
- View Profile
- View Exam Details.
- View Profile
- View Exam Details.

Welcome

- Login
- New Registration

Admin: -This module deals with collecting the information from the experts and stored then into the database. Following functions are performed by the admin.

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Main Stream Details: - This module allow admin to add main stream like, BE, Medical, Commerce, etc.

Sub Stream Details: -This module allow admin to add sub stream like, IT, CIVIL, LAW, etc.

Category Details: - This module allow admin to add category means the subject teaches in that department like, OS, Accounting, Biotechnology, etc.

Add Question: - This module allow admin to add question based on input subject Name according to Main stream and sub stream.

View Student Details: -Admin can view the details of registered student in this System.

View Exam Details: -Admin can view the detailed information of each student Along with his career path.

View Stream Details: -Using this module admin can view all the information of stored database along with their main stream, sub stream and category.

User: -In this module user can give exam and view results.

Following functions are performed by the admin.

Take test: - User will give exam based on system generated question. Question will be asking on different streams and categories.

Result: - User can view his currently exam result.

View Profile: - User can view his profile.

View Exam Details: - User can view all his exam details.

welcome: -

Following functions are performed by the admin.

Login: -User/Admin enters login credentials.

Registration: -New user must should register before using this system.

User Inference

User Inference engine is software that performs the inference engine task. It uses knowledge in knowledge base and information provided by user to infer new knowledge.

Advantages

System helps user to select their stream based on their capability.

System guides user properly which stream to select.

System will help user in which stream their good at.

Disadvantages

The system must be given proper inputs otherwise system can produce wrong results.

Requires an active internet connection.

Applications

As this is a web application, this system can be used by many users who are looking for career options.

Design

System Flow Diagram

Welcome Window

- Take Test
- Result
- View Profile
- View Exam Details.

RESULT AND ANALYSIS

We gathered sample student data records as well as all of the fundamental stream information for this investigation. This data is saved in a comma-separated format, which will make it easier to handle later. In all, there are 100 instances and 5 characteristics in this dataset, Major interest factors examined for profession selection are presented below, with Sub Streams indicating Excellent, Very Good, Good, and No Interest, respectively.

Algorithm for selecting best choice

ANSWERS of Interest Test				
SUB	EXCELLENT	VERY GOOD	GOOD	NOT INTEREST
ACCOUNTING	7	5	8	37
IT	47	27	17	7
MBBS	12	4	3	27

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```
if(e > 0){
if(maxe< e)
        {
Maxe = e;
            stream = rs.getString("SUB");
        }
    }
    else if(vg > 0){
if(maxvg< vg)
        {
maxvg = vg;
            stream = rs.getString("SUB");
        }
    }
    else if(g > 0){
if(maxg< g)
        {
maxg = g;
            stream = rs.getString("SUB");
        }
    }
```

FUTURE EXPANSION

Because the planned initiative is just for HSC and SSC students, there is still a lot of room for expansion. More capabilities might be introduced in the future to aid in the stream analysis of students from diverse streams and majors. Engineering, Medical, and MBA are some of the potential steams that might be included. An engineering student, for example, may take an online aptitude test to decide which specialty he or she should follow for his BE degree, such as Civil, Mechanical, or Computer Science and Engineering. [9]

CONCLUSION

We described the framework design as well as the operation of the SACAT system, which is important for career selection, via this project. The application of algorithms in data mining techniques might help you choose a professional path. In separate tables, the specifics of classification accuracy and various faults are discussed. As a result, this approach is a viable choice for career selection.

An SACAT system is a computer programme that represents and reasons with domain knowledge in a certain sector; in this case, the domain knowledge was education and career counselling. Theoretical principles of several terminology utilised in the career counselling process are emphasised. The many examinations necessary for the career selection process are briefly outlined. As a study approach, the researcher completed design and creation. Finally, the essential components and design of an expert system are discussed. The researcher intends to use this theoretical architecture to construct an expert system in the future.

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