Artificial Intelligence

Career Guidance Expert System in JESS

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Project Report

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Introduction :

In the era of uncertainty of jobs and diversified interests of every individual it has become herculean to find the best fit for your career . One needs to bring creativity and flexibility in skills so that he or she can be differentiated and appreciated among all others. You have to take initiatives on your own for leading towards success. If you don't, then no other will do on your behalf. You have to bring high potential in yourself. Career guidance is needed in all age groups whether you are a student, a job seeker or an adult. All of them have their own concerns and requirements according to their own interests and situations.

Career guidance centres do exist, but getting access to solutions tailored for personal interests and merit is too expensive and tiresome. Expert System technology seems to be an excellent choice for the automation of this process because the dialogue between human advisor and the student can be conveniently emulated by the dialogue between the ES and the student, and the reasoning of the academic advisor can be successfully automated by the reasoning power of ES; particularly the rule-based ES.

The Career Guidance Expert System will tune into one's natural skills and capabilities regardless of any stage or age for boosting them towards the choice of their own.

Java Expert System Shell :

Jess is a rule engine for the Java platform. It is a superset of the CLIPS programming language. The language provides rule-based programming for the automation of an expert system, and is frequently termed as an expert system shell. Rather than a procedural paradigm, where a single program has a loop that is activated only one time, the declarative paradigm used by Jess continuously applies a collection of rules to a collection of facts by a process called pattern matching. Rules can modify the collection of facts, or they can execute any Java code. Jess supports the development of rule-based expert systems which can be tightly coupled to code written in the powerful, portable Java language.

Concept :

We will use MBTI (Myers–Briggs Type Indicator) test for finding out the personality and interests of the person thereby suggesting the right career choices for them.
The **Myers–Briggs Type Indicator** (**MBTI**) is an introspective self-report questionnaire with the purpose of indicating differing psychological preferences in how people perceive the world around them and make decisions.

The test is based on 4 different dichotomies or personality descriptions . One can either be

1. Introverted or Extroverted
2. Sensitive or Intuitive
3. Thinking or Feeling
4. Judging or Perceptive

Following are the 16 personality types :

- I – Introvert
- E – Extrovert
- S – Sensing
- N – Intution
- T - Thinking
- F - Feeling
- J - Judging
- P – Perceiving

- ISTJ – The Duty Fulfillers
- ESTJ – The Guardians
- ISJF – The Nurturers
- ESJF – The Caregivers
- ISTP – The Mechanics
- ESTP – The Doers
- ESFP – The Performers
- ISFP – The Artists
- ENTJ – The Executives
- INTJ – The Scientists
- ENTP – The Visionaries
- INTP – The Thinkers
- ENFJ – The Givers
- INFJ – The Protectors
- ENFP – The Inspirers
- INFP – The Idealists

The MBTI test will be useful for deducing the personality type of the client, and a custom-made questionnaire to determine his/her interests. These results are then combined to produce a report containing career recommendations.

Working :

The test has a 20 question questionnaire designed to help see who you are. Based on the answers of user it is determined what the user is more inclined towards. According to the responses to the questions, each person is assigned one of the 16 possible Myers-Briggs types at the end of the questionnaire. Each of the 16 personality types have some associated preferred occupations, but many of those require that the person has corresponding skill set. Hence, the performance of the user in 10 diverse disciplines are asked, and using the personality type and the skill set, the person is suggested one or more careers in decreasing order of match.

Conclusion :

The system successfully determines the personality type of the user and shows him/her career options in the decreasing order of suitability based on the scores in tests and answers to few questions on behavioral predilections.