SOFTWARE REQUIREMENTS SPECIFICATION

EXPERT SYSTEM FOR SWEAR ANALYSIS

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Introduction: Swear Analysis is used to determine our Strengths, Weaknesses, Eligibility, Availability, Resources. The student success is promoted by helping them through Swear with:

- Mental health and life concerns
- Learning and academic skills challenges
- Career uncertainty
- Faculty/staff - student communication

This swear analysis makes students to provide a good career guidance in their future path. These also makes them to better understanding where they are lacking behind in the way to their to career.

General Description:

An expert system is a computer program that is designed to solve complex problems and to provide decision-making ability like a human expert.

It performs this by extracting knowledge from its knowledge base using the reasoning and inference rules according to the user queries.

An expert system should mainly consist of three main modules as a knowledgebase, an inference engine and a user interface . To facilitate this

requirement, a literature survey was then carried out to find the expert system features and how expert systems can be implemented. Although there were different approaches to build expert systems in terms of knowledge representation, building the inference engine and the user interfaces, we decided to use the method of rule-based expert system methodology known as production system for this purpose.

Further, reasoning types such as case-based reasoning and rule-based reasoning

were considered.

1. **User Interface**: it is an interface that helps a non-expert user to communicate with the expert system to find a solution.

2. **Inference Engine**: The inference engine is known as the brain of the expert system as it is the main processing unit of the system. It applies inference rules to the knowledge base to derive a conclusion or deduce new information. With the help of an inference engine, the system extracts the knowledge from the knowledge base.

3. **Knowledgebase**: The knowledgebase is a type of storage that stores knowledge acquired from the different experts of the particular domain.

It is considered as big storage of knowledge. The more the knowledge base, the more precise will be the Expert System.

It is similar to a database that contains information and rules of a particular domain or subject.

One can also view the knowledge base as collections of objects and their attributes.

Goals And Objectives: The project with the expert system for swear analysis format is developed with an intention to help the students do the swear analysis on their own based on certain aspects like Programming, Verbal and other skills needed for the students.

It helps the students to choose their right career paths depending upon availability and their aptitude. Expert System, is used as a guide for students engaged in their career build up based on their paths.

This expert system helps us to keep all the human knowledge and thoughts into a computer language.

Statement Of Scope:

The project is being developed using Python 3.9.7 and MYSQL work bench.

we are using the following libraries

1. tkinter: is a standard GUI library for python. Tkinter is a Python library that offers a number of functions for creating graphical user interface pages and windows.

2. JSON: It is a standard text-based format for encoding structured data based on JavaScript object syntax. It is extensively used in web applications to transport data.

3. SQL connector: It enables Python programs to access MySQL databases and for installing the library we use PIP to install "MySQL Connector “

4. Pandas: pandas are a Python library that provides quick, versatile, and expressive data structures for working with "relational" or "labeled" data.

Its goal is to serve as the foundation for undertaking realistic, real-world data analysis in Python.

Performance Requirements:

The performance of an expert system is based on the expert's knowledge stored in its knowledge base. The more knowledge

stored in the Knowledgebase, the more that system improves its performance. One of the common examples of an ES is a suggestion of spelling errors while typing in the Google search box.

Software Context:

Swear Analysis is used to determine the student’s capability of their knowledge, which helps him to know himself how well he can fit into any corporate company according to his skills.

This swears analysis makes students to provide a good career guidance in them

future path. These also makes them to better understanding where they are lacking behind in the way to them to career.

Software Interface:

We develop this Expert system for swear analysis either by using chatbot or by using Tkinter. Tkinter is the standard GUI library for Python. Python when combined with Tkinter provides a fast and easy way to create GUI applications. Tkinter provides a powerful object-oriented interface to the Tk GUI toolkit.

Major Constraints:

Any business or product line constraints that will impact the manner in which the software is to be specified, designed, implemented or tested are noted here.