Software Requirements Specification

for

Food Recommendation Expert System

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# Abstract

*We are presenting the Food Recommendation System, a rule based expert system consisting of rules and facts. The expert system suggests the customer to have a dish based on his preferences. The expert system queries about the type of dish customer is expecting to have. The most suitable and relevant dishes are then chosen by the expert system based on the answers given by the customer.*

# Introduction

## Purpose

*This SRS is intended to provide the specification and requirements for our Food Recommendation System. It explains the functional features, along with the interface details, constraints and related considerations.* *The purpose of the expert system is to recommend food to the customers based on their taste and likelihood from the menu.*

## Scope

*The Food Recommendation System is intended to ingeniously suggest dishes. The suggestions are based on the user’s taste and their choices of having food. Customer can easily get the best suitable dish according to his taste. This lightweight expert system is easy to comprehend and can be used by anyone.*

# Overall Description

*Our expert system is coded in CLIPS language. The expert system is provided with an interface through which a customer can answer the questions asked by the expert system. The final suggestions are also displayed on the interface. The expert system suggests the customer to have a dish based on his preferences. The expert system queries about the type of dish the customer is expecting to have. The most suitable and relevant dishes are then chosen by the expert system based on the answers given by the customer. The suggestions are based on the user’s taste and their choices of having food. Customer can easily get the best suitable dish according to his taste.*

*Our Facts.clp file contains the facts which are defined and added to the knowledge base on the starting of the program. When we first load the program all the facts are added to the knowledge base and use rules to manage these facts. Our Rules.clp contains the rules which manages the knowledge base.*

*The initial question asked by the expert system is based on several types of cuisine like Indian, Chinese, Western, Japanese etc. Then the question is followed by type of food i.e whether vegetarian or non-vegetarian food. The next questions are based on the taste of food the customer is expecting to have. Later questions are based on the nutrition in food and drinks they prefer after the meal. After every rule is triggered, a set of facts is asserted into the database and some facts are retracted from the database. The rules are executed according to assigned priority to respective rules.*

*After all the questions are answered in a legit sense, the expert system processes a set of suggestions based on* *the relevance and pertinence to the answers given.*

# Approach

This expert system is based on the concept of **Rule Based Expert System** which consists of **facts** (Database) and **rules** (Knowledge base).

## Rule Based Expert System

A Rule Based Expert System consists of the knowledge base, the data base, the inference engine, the explanation facilities and the user interface.

* The knowledge base is represented as a set of rules in the form of Switch (condition), IF (condition) and THEN (action). When the IF or Switch part is satisfied the rule is triggered.
* The database initially contains the facts which are inserted while loading the program in the CLIPS ide.
* The database consists of a set of facts to match against the IF (condition) part of the rules in the knowledge base.
* The inference engine is responsible for the reasoning. It links and matches the rules to the facts in the data base.
* The explanation facility is self-explanatory. It is responsible for the justification given by the expert system about how a particular decision or conclusion was made.
* The user interface enables the user to communicate with the expert system.

The food recommendation system consists of several facts, tokenizing different dishes. The knowledge base consists of rules based on different facts in the database. The rules and facts are inferred to give out the decision.

The language used is **CLIPS** and the tool used is a **CLIPS IDE**.

# Description of the databases

## Knowledge base

The knowledge base consists of several rules for processing and deciding on suggestions. The following are the rules in the knowledge base for various aspects of food: vegetarian, sweet, spicy, sour and nutritious.

## Rules and Facts

Rules and Facts are listed in another document attached with this.

# Flow Chart

