Android Based Diet Consultant using Rule Pattern-based algorithm

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Abstract:

The proposed project is based on a Dietitian app. The proposed app let us discover what should we eat based on our weight, height, age, sex and physically activity. It calculates BMI and BMR and tells us how much calories should we ideally need to intake per day. The calories we should intake will be feed in and based on RETE algorithm the amount of food intake for the day will be decided.The proposed application is for any type of body person, it is also suits for any range of weight people . It will ideally inform how should we cut down the weight using target programs such as 1LB per week gain/loose . The given system will suggest food list according to the meal that is if it's a break fast lunch or dinner . It will accordingly organize heavy calorie food & light calorie food. The system will give more accurate results as it accepts the data entered by the user and processes it depending on some metrics already known to the application on the basis of which a diet plan is generated and ask the user if the user accepts the diet plan. If not accepted the system may also give and alternative diet plan

Key words: RETE Algorithm, Android Devlopment, Biomarker, Poultry, BMR, BMI, Semantic.

INTRODUCTION

The proposed project is based on a Dietitian app. The proposed app let us discover what should be eaten based on our weight, height, age, sex and physically activity. It calculates BMI and BMR and tells us how much calories should ideally need to intake per day. The calories that should intaken will be feed in and based on RETE algorithm the amount of food intake for the day will be decided. The proposed application is for any type of body person, it is also suits for any range of weight people. It will ideally inform how should be cut down the weight using target programs such as 1LB per week gain/loose . Similar way this system also provides the diet plan according to the information entered by the user.

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The system asks all his data from the user and processes it to provide the diet plan to the user. Thus the user does not need to visit any dietician which also saves time and the user can get the required diet plan in just a click. The system will give more accurate results as it accepts the data entered by the user and processes it depending on some metrics already known to the application on the basis of which a diet plan is generated and ask the user if the user accepts the diet plan. If not accepted the system may also give and alternative diet plan.

LITERATURE SURVEY

1) Artificial Intelligence Dietitian Using Android

This work proposes an intelligent agent, called the personal dietitian agent, based on the user's characteristics and specification. The agent can create a meal plan according to a person's lifestyle and particular health needs. The experts recommend eating a wide variety of foods, including vegetables, whole grains, fruits, non-fat or low-fat dairy products, beans, lean meats, poultry, and fish.

2) Semantic Modeling for Personalized Dietary Recommendation

This paper presents an initial work concerning a holistic semantic modeling approach enabling personalized dietary recommendations. Focus is given here to the review of existing semantic resources and food information resources covering different aspects of the domain. A gap analysis in relation to a comprehensive conceptual model is given. This work is part of a recently started project named LiFANA - Lifelong Food and Nutrition Assistance.

3) Ontology modeling of Malaysian food composition

Each new design solution must contain a novelty element. Thus, case adaptation becomes an important subtask in case-based design. This subtask plays the role of modifying the previous solution of the best retrieved case. Generally, adaptation task requires for domain knowledge, and domain- and task-heuristics. This paper demonstrates the process of modeling a domain knowledge using ontology. The domain ontology models the dietitians' knowledge where they use it in designing the dietary menu plan. The method used for ontology modeling is Ontology Development 101 (OD 101). The domain ontology was built from scratch. MyFCO has successfully modeled the domain knowledge of the dietary menu planning. We evaluated the quality of the domain ontology by using it in the design case adaptation for dietary menu planning application. The iterative process emphasized by OD 101 enabled a novice ontology developer to model the ontology in a simpler and more flexible way. This contributes to the success factor of ontology modeling for domain knowledge.

4) FoodWiki: a mobile app examines side effects of food additives via semantic web A research project on mobile safe food consumption system (FoodWiki) is discussed that performs its own inferencing rules in its own knowledge base. Currently, the developed rules examines the side effects that are causing some health risks: heart disease, diabetes, allergy, and asthma as initial. There are thousands

compounds added to the processed food by food producers with numerous effects on the food: to add color, stabilize, texturize, preserve, sweeten, thicken, add flavor, soften, emulsify, and so forth. Those commonly used ingredients or compounds in manufactured foods may have many side effects that cause several health risks such as heart disease, hypertension, cholesterol, asthma, diabetes, allergies, Alzheimer etc. according to World Health Organization. Safety in food consumption, especially by patients in these risk groups, has become crucial, given that such health problems are ranked in the top ten health risks around the world. It is needed personal e-health knowledge base systems to help patients take control of their safe food consumption. The systems with advanced semantic knowledge base can provide recommendations of appropriate foods before consumption by individuals. The proposed FoodWiki system is using a concept based search mechanism that performs on thousands food compounds to provide more relevant information.

5) The Latin American laws of correct nutrition: Review, unified interpretation, model and tools

The "Laws of Correct Nutrition": the Law of Quantity, the Law of Quality, the Law of Harmony and the Law of Adequacy, provide the basis of a proper diet, i.e. one that provides the body with the energy required and nutrients it needs for daily activities and maintenance of vital functions. For several decades, these Laws have been the basis of nourishing menus designed in Latin America; however, they are stated in a colloquial language, which leads to differences in interpretation and ambiguities for non-experts and even experts in the field.

6) An analytical approach to building a core ontology for food

The purpose of this paper is to demonstrate the construction of a core ontology for food. To construct the core ontology, the authors propose here an approach called, yet another methodology for ontology plus (YAMO+). The goal is to exhibit the construction of a core ontology for a domain, which can be further extended and converted into application ontologies.

7) Food Track & Trace ontology for helping the food traceability control

This paper describes a food ontology developed for traceability purposes. The Food Track Trace Ontology (FTTO) is part of a general framework devoted to managing food traceability and it has been developed with the aim of being connected with a Global Track Trace Information System. The main goal of the proposed FTTO Ontology is to include the most representative food concepts involved in a SC all together in a single ordered hierarchy, able to integrate and connect the main features of the food traceability domain. FTTO is formed by four modules food, service products, processes and actors involved in the supply chain. This paper describes the main features of the FTTO ontology and some examples of application.

8) Food Constituent and Food Metabolite Databases

This chapter will familiarize readers with different kinds of databases on food chemicals or their derivatives and provide a comparison between them. Three different types of food composition or food metabolite databases are presented and discussed: (1) Standard food composition databases (FCDBs); (2) Specialized or metabolomic-based "next-gen" food composition databases; and (3) Food biomarker or food metabolite databases. Details regarding their intent, their content, their design, their features along with their strengths and weaknesses are also provided.

9) Peptidomics in Food

Peptides are important food components with bioactive properties (including, e.g., antimicrobial, antioxidative, ACE-inhibitory or anticariogenic effects) and technological function. By now, targeted and untargeted mass spectrometry, mainly MALDI-TOFMS and LC–ESI-high resolution MS/MS, allow for the comprehensive analysis of the peptide composition in food. Food peptidomics or food peptide profiling are crucial techniques to identify and quantify bioactive peptides in food and to understand the influence of peptides on food quality. Bioinformatic tools facilitate linking peptide structures and functions. Additionally, peptide profiles can complement the analytical toolbox to assure food authenticity.

10) Food image segmentation using edge adaptive based deep-CNNs

Indian food recognition can be considered as a case of fine-grained type visual recognition, where the several photos of same category generally have significant variability. Therefore, effective segmentation and classification technique is required to identify the particular cuisines and fine-grained analysis. The paper aims to discuss this issue.

11) Food traceability technologies and foodborne outbreak

Occurrences The purpose of this paper is to identify the relationship between the frequency of publication on food supply chain (FSC) traceability and the occurrence of foodborne diseases outbreaks.

RELATED WORK

We have collected and analyzed several years IEEE papers to get a refined visualization on Android Based Diet consultant using pattern based algorithm. In the previous system diet charts are usually generated using conditioning algorithms and data mining which hypes the use of database and purey depending on the database which leads to entering of data again and again and also it dossen't focus on health conditionExisting system takes in account the users height weight and gives a diet chart without taking his/her daily routine health conditions types of food they can eat into account which was a serious issue.AI domain gives a edge of generating a proper diet plan which lacks in other system as

the domain is not the same. RETE algorithm gives preferable outcomes varying for different types of body and their routines.

PROPOSED WORK:

The proposed work collects the height, weight, age, sex and their activity. Then according to the information given the system calculates their BMI and BMR, based on their BMR and their activity the system calculates the calories needed for the person. The system will predict the diet according to the user information provided using RETE algorithm. The system also helps to you to improve your body fitness from the users input on how much faster they should make their body fit. Then the user can select food items accordingly by keeping track of the calories needed according to his wish.

The fitness improvememt diet plans will work as follows. If the user is a of Normal weight he can get the diet plan for either losing 1lb per week or gain 1lb per week. If the user is Obese he could select either lose 1lb per week or lose 2lb per week. If the user is found to be of underweight category he can choose gain 1lb per week or gain 2lb per week plans. The diet plan creation will help the user to choose the food that he likes by considering the calories he need. So that he should not eat any food that he dislikes in order to keep his body healthy.

CONCLUSION

The paper is based on Rete algorithm , it gives the prediction/ suggestion of the food according to the attributes entered by the user. The project helps users to check their Body Mass Ratio and also helps to choose their own choice of food items according to their body type along with calorie calculation. They can choose the food items of their choice and be healthy by keeping track of calories of the food items added to the list. The paper successfully able to suggest various combination of food items and even if the user needs a custom diet according to there choices they can select and implement it with keeping ensure that the calorie intake is less than the restricted calorie.

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