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AUTOMATED DIET RECOMMENDATION SYSTEM P. KAVYA¹, M. RAMYA SRI², CH. KAVYA SRI³, K. JAGADISH⁴, S. SRIKARI⁵

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Abstract

Medical study has revealed that people set a bigger possibility of countering free radicals and warding off illness by consumption of healthy foods and by increasing their resistant system. Due to the poor eating habits people suffer from many diseases. In the current scenario fast food become important food in daily routine because it is effortlessly available but taking fast food in routine may cause for disease like heart attack, diabetics etc. Healthier diets help us to maintain our health and keep us away from many diseases. For better recovery from diseases or surgery etc individual have special needs according to their medical profile, cultural backgrounds and nutrient requirements. Design and implementation of healthy diet recommendation system is based on web data mining which is the application of data mining technique help us to determine pattern from web. In terms of accuracy and time performance analysis of recommendation system using two decision trees learning algorithm ID3 apply it on healthy diet application.

Keywords: Automated Diet, Web data mining, fast food, Medical study and heart attack, diabetics etc.

1. Introduction

In a machine learning process, the classification can be de-scribed as а supervised learning algorithm. Data records are belonging to class on the bases of knowledge of class it assigns a class labels to data to co- design and co-develop software and hardware, and hence, such components. However, incorporation of that deal with knowledge extraction from database records and prediction of class label from unknown data set of records. We can define classification is a development in which specified set of data records is separated into training and test data sets. For validating the model, we required the test data record and for constructing the classification model training data set is required. The constructed classification model is used for classifying and predicting new data set records. These new data set records are different from training and test data set. For getting higher classification accuracy or accurate prediction we required a prior knowledge of the class label data record which makes attribute selection effortless.

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For higher classification accuracy supervised learning algorithm (like classification) is preferred to unsupervised learning algorithm (like clustering). In current scenario, data mining technology has been widely used in education, real estate, stocks, health care and other fields. A number of widespread classification algorithms used in data mining and decision. Data preprocessing mainly renovate and progression the source data acquired in data collection phase and construct the data warehouse of associated themes to generate basic plat- form for data mining process. Data preprocessing is preparation for data mining and it mainly includes data scrubbing, data integration, data conversion, data reduction, etc... Basically, in the data preprocessing step convert the data into the form which is accepted by the data mining algorithm.

Information filtering is the main step of the recommendation system. In the existing association rules are applied in the con-tent base filter. In the performance analysis of diet recommendation healthy system, introduced a new architecture based on data mining algorithm for constructing a healthy diet recommender system. A healthy diet recommender system is an intermediary program (or an agent) with a user interface that automatically and intelligently extracts the useful information of people 's eating habit which suits an individual 's needs. Figure shows the process in the information filter. The content-based filtering (CBF) is a consequence and persistence of information filtering research. It constructs the recommendation based on the correlation

between difference resources. In content-based recommendation systems, resources are described as a vector of attributes. The system then learns a profile of the user 's interests based on the features presented in the objects the user has rated. When making a prediction on the customers preferences, the system analyzes the relationship between the products rated by the users and other products by calculating the similarity between their attribute vectors. In our healthy eating recommendation system, the healthy eating dataset first apply to the content base filter it analysis the user behavior or the content of dataset for example the whether the user is vegetarian or suffering from some kind of diseases. The content base filters analysis the user profile. For classifying data, we apply the decision rule mining on user access pattern. We ap-ply the ID3 algorithm for classify the data. Decision rule mining construct the rule that is apply on user access pattern and generate the result. The output of the content base filter is the food that is beneficial for your health. For improving the accuracy of the system, we apply bagging on user access pattern. In healthy diet recommendation system framework. database using the Relational Database Management System (RDBMS) is designed and constructed. This database stores the URLs (i.e., Web pages), keywords for the Web pages. the recommended set of rules from content-based filtering, user login information, and user profiles. MySQL provides a multi-threaded, multi-user, and robust SQL (Structured Query Language) database management system, which is suitable for the application of recommender systems.

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Recommendation systems are used to predict the desire value. By applying the data mining algorithm on data set in recommendation system predict the data according to the user preference. Prediction can be categorized into: classification, density estimation and regression. In classification, the predicted variable is a binary or categorical variable. Various well-liked

2. Problem statement:

Now days the technology develops along with other health issues every human being responsible for his own health issues due to poor diet intake and some diseases may occur by birth or from parental history. We have to take healthy diet with respect to our health improvement. Prevention is better than cure like that we have to follow good food intake to avoid the using of medical bills and medicines intake.

2.1 Existing system

Most of the people unable to follow the recommended diet due to their economic problems or lack of knowledge of how much diet should be taken per day. And lack of knowledge how long physical exercise should be done according to their age and weight.

Unrecommended diet can damage our physical and mental health conditions and reduce our ability to lead an enjoyable and active life. Inadequate and inappropriate intake of food is known to cause various health issues and diseases. Due to lack of concise information about healthy diet, people have to rely on medicines instead of taking preventive measures in food intake. Due to diversity in food components and large number of dietary sources, it is challenging to perform real-time selection of diet patterns that must fulfill one's nutrition needs. In the short term, improper nutrition can contribute to stress, tiredness and our capacity to work, and over time, it can contribute to the risk of developing some illnesses and other health problems such as:

Peripheral neuropathy

- 1. Overweight or Under weight
- 2. Tooth Decay
- 3. High blood pressure
- 4. High cholesterol
- 5. Heart disease and stroke
- 6. Diabetes
- 7. Osteoporosis
- 8. Some cancers
- 9. Depression
- 10. Eating disorders.
- 11. Psychological Disorders

2.2 Proposed system.

In this Food Recommendation with heart and Diabetic prediction system can recommend us how much number of varieties of different healthy food items can be consumed and how much of time physical exercise should be done based on person's Age, Gender, Height, weight, and systolic and Diastolic rate and Risk factor of occurrence of Heart stroke and diabetic attack chances may also know us. And perfect recommend diet and physical exercise can play a vital role in controlling various diseasesthat helps us to stay healthy and be active.



Advantages f Proposed System

Good nutrition, based on healthy eating is one essential factor that helps us to stay healthy and be active. In this project deals with the appropriate diet recommendation according to person's physical statistics and risk factor of calculating heart stroke disease and chances of diabetic Due this to perfect diet recommendation system the one should take balanced diet and maintains sound health system. There is a saying that "sound mind in a sound body".

System Requirements SDLC methodology INPUT DESIGN

Input Design plays a vital role in the life cycle of software development, it requires very careful attention of developers. The input design is to feed data to the application as accurate as possible. So, inputs are supposed to be designed effectively so that the errors occurring while feeding are minimized. According to Software Engineering Concepts, the input forms or screens are designed to provide to have a validation control over the input limit, range and other related validations.

This system has input screens in almost all the modules. Error messages are developed to alert the user whenever he commits some mistakes and guides him in the right way so that invalid entries are not made. Let us see deeply about this under module design.

Input design is the process of converting the user created input into a computer-based format. The goal of the input design is to make the data entry logical and free from errors. The error is in the input are controlled by the input design. The application has been developed in user-friendly manner. The forms have been designed in such a way during the processing the cursor is placed in the position where must be entered. The user is also provided within an option to select an appropriate input from various alternatives related to the field in certain cases. Validations are required for each data entered. Whenever a user enters an erroneous data, error message is displayed and the user can move on to the subsequent pages after completing all the entries in the current page.

OUTPUT DESIGN

The Output from the computer is required to mainly create an efficient method of communication within the company primarily among the project leader and his team members, in other words, the administrator and the clients. The output of VPN is the system which allows the project leader to manage his clients in terms of creating new clients and assigning new projects to them, maintaining a record of the project validity and providing folder level access to each client on the user side depending on the projects allotted to him. After completion of a project, a new project may be assigned to the client. User authentication procedures are maintained at the initial stages itself. A new user may be created by the administrator himself or a user can himself register as a new user but the task of assigning projects and validating a new user rests with the administrator only.



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The application starts running when it is executed for the first time. The server has to be started and then the internet explorer in used as the browser. The project will run on the local area network so the server machine will serve as the administrator while the other connected systems can act as the clients. The developed system is highly user friendly and can be easily understood by anyone using it even for the first time

Process Model Used With Justification

SDLC is nothing but Software Development Life Cycle. It is a standard which is used by software industry to develop good software.

HARDWARE CONSTRAINTS:

Processor: Any Processor above 500 Mhz.
Ram: 128Mb.
Hard Disk: 10 Gb.
Compact Disk: 650 Mb.
Input device: Standard Keyboard and Mouse.
Output device: VGA and High-Resolution Monitor.

SOFTWARE CONSTRAINTS:

Operating System: Windows 7/10. **Techniques**: Python, Anaconda **Front End**: Html, Flask **IDE**: Py Charm / Spyder **Database**: Net4J

SYSTEM DESIGN

Identifying Design Goals

There are several reasons to identify the design goals of any system. These goals will help to design the system in an efficient manner. There are several criteria to identify

these goals. Some of the criteria were explained below:

Performance criteria:

- a) **Response time:** The response time of the method is very low because the system simple design developed on the high-performance system.
- b) **Throughput:** The throughput of the system is high.
- c) **Memory:** memory used by the system is very low.

Dependability criteria:

- a) **Robustness:** the system should be designed to work efficiently on images of any type of formats without any problem.
- b) **Availability:** the system should be ready to accept command from user at any point of time.
- c) **Fault Tolerance:** the system should not allow the user to work with fault input. It displays error messages foe every specific fault occurred.

Maintenance criteria:

- a) **Portability:** the system should work on all the platforms like Linux, windows.
- b) **Readability:** the code generated should be able to understand the purpose of the project, so as to make the user to make the modifications easily.
- c) **Traceability:** the code generated should be easy to map with the functions with the operations selected by the user.



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RESULTS AND DISCUSSION













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5. Conclusion

This paper presented PrivRank, an adjustable and constant security saving web-based life information distributing system. It ceaselessly secures client determined information against deduction assaults by discharging jumbled client action information, while as yet guaranteeing the utility of the discharged information to control customized positioningbased proposals. To give tweaked insurance, the ideal information confusion is found out with the end goal that the security spillage of client indicated private information is limited; to give consistent protection assurance, we consider both the verifiable and online action information distributing; to guarantee the information utility for empowering positioning-based suggestion, we bound the positioning misfortune caused from the information obscurity process utilizing the Kendall- rank separation. We appeared through broad examinations that PrivRank can give a productive and viable assurance of private information, while as yet protecting the utility of the distributed information for various positioning-based proposal use cases. Later on, we intend to broaden our system by considering the information types with ceaseless qualities as opposed to discretized values, and investigate further information utility past customized proposal.

Future Scope of the project:

In this project we can develop for feature development such as Vitamins and minerals importance and deficiency caused for in appropriate food consumption and it preventive measures by taking healthy food products and adopt healthy food habits. And we can further implement regional based diet recommendation system also. Good Teachers are worth more than thousand books, we have them in Our Department

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