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Malnutrition Detection and Administration Organization

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Abstract:

The World Health Organization (WHO) cites malnutrition as the greatest single threat to the world's public health. Forty-five-thousand children died by malnutrition every year in the state, according to „A report on nutritional crisis in Maharashtra" by the Pune-based SATHI (Support for Advocacy and Training to Health Initiatives). One-third of adults are underweight, and 15% severely underweight. Currently our government maintains the malnutrition data on paper manually so there may be a chance of loss of data. Also it takes time to conclude anything, so computer based system is must needed to overcome this problem.

Keywords — **Data Mining, Malnutrition, E-government, Rule Based Classification, Forecasting.**

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I. INTRODUCTION

Malnutrition is the condition that results from taking an unbalanced diet in which certain nutrients are lacking, in excess (too high an intake), or in the wrong proportions. A number of different nutrition disorders may arise, depending on which nutrients are under or overabundant in the diet. In most of the world, malnutrition is present in the form of under nutrition, which is caused by a diet lacking adequate calories and protein.

We purpose the Database Management system having role based security. The system is having numbers of roles that all are working on the malnutrition data or for the malnutrition. The system providing the security to the roles. The system also having malnutrition detection engine to detect malnutrition in people.

II. EXISTING SYSTEM

According to current research in the world, there is a mobile multi-agent based system to monitor e-health. As well as agents developed to control unknown diseases and Alzheimer patients. By analyzing the current situation of e-government, it is clearly highlighted that there are no ongoing projects which are initiated by e-government to reduce malnutrition in many developing countries. Due to these reasons from this research propose to use Agent Technology to overcome this situation.

In Existing system, some major problems occurred like:

1) Safekeeping: In any database system we store the important as well as personal data so chances of data loss may be increase. So, for that security matter

2) A health care system like ICDS requires scalability, data integration, numerous system interfaces and other complexities. In the agile methodology followed, a health care system is first developed for a certain city and then extended further. This will affect the interoperability issue later. Thus scalability is not supported by agile methodology.

III. PROPOSED SYSTEM

As discussed earlier the existing schemes has some limitations according to the information's which will feed in the system.. Thus our main aim is to find the solution over an it. Where, our system will show the dashboard representation where we can see all the variation in increasing and decreasing order. Detection of malnourished people is main task of our system. The proposed scheme should be efficient and the system will be scalable.

Through this exploration it is highlighted that e-government initiative has been expanded to some extent, there are lack of health related projects.

SYSTEM ARCHITECTURE:
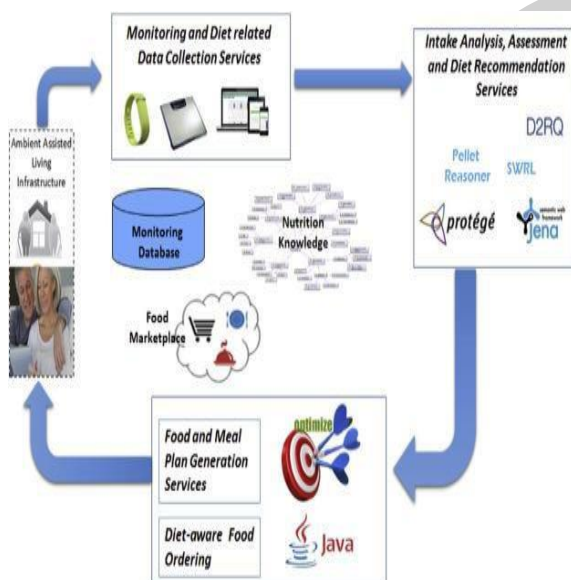
The system architecture is having following parts:

Fig. 1. Malnutrition prevention & self management

A. Role Based Security:

As we said our system is Data Based Management System, the system is having numbers of roles to manage the system. All roles are having their functions. The system contains the roles like:
1) Admin
2) Resource mediator
3) Advice mediator
4) User Identify mediator /Doctor
5) Nutritionist

1. Admin / Government:

Admin/Government is the Super User for this system. This system is specially design for the government so the government can be the super user of the system. As the system have the number of users, so there is need of someone who take care of the system and the system users. The admin is the whole and soul of the system. Create of system users roles. Update or Delete the Roles is done by the admin. The states are dividing into the regions. To keep a track of the region is also done by admin. Creation of region is done by the admin .Create, Update or Delete the Users and allocate regions to users is also done by the admin. Provide security to users with respect to roles. Report analysis and approval is all done by the admin, that"s why the admin is the super user of the system..

2. Reserve Mediator:

The resource mediator is the one and only agent who interact with the people in the system. The resource Agent is the backbone of the system. Resource Agent will collect raw data of the people with some mandatory parameters in his allocated region. Feed collected information into the system from graphical user interface. Update any person or patient information if required. After this the data is passing on to another agent for rest analysis. when all is done by the system the data of patient or report of the patient is pass to the resource agent. Then he gave that report to the patient with final interaction with that patient.

3. Advice Mediator:

The Advice mediator is receive questions raised on health by patients via resource agent. Refers the children's data from database for tagging the questions with child id/ patient id. With reference to children's data post the questions to user Identify Agent through discussion forum. Get respective answers for posted questions from UIA and pass on to resource agent. Receive Nutritional suggestions from UIA and pass it on to resource agent.

4. User Identify Mediator:

User Identify mediator is nothing but a Doctor. The user Identify Agent is run the Detection Engine Process on daily bases to filter Malnutrition Children data & to generate output file. This file will go to Nutritionist for his inputs on nutritional

advice for affected children. Receive Nutrition related information in updated file from Nutritionist. Check the status of file if file is not send by nutritionist. Pass nutrition related suggestions to Advice Agent. Answer the questions asked by Advice Agent through Forum.

5. Nutritionist:

The Nutritionist feed all the Master Data related to malnutrition into the system. He receives the Malnutrition Children data file from Detection Engine having Malnutrition children's details. Update above file with Nutritional suggestions. Send that file to User Identify Agent.

B. Reporting Generation:

The Report Generation is the second part of the system. Form the result of Detection Engine the report of the patient is generated. The report content are result of detection engine that is the patient is malnourish or not, the medical advice on that result, nutrition advice. All these things are present in the report. This generated report is maintained in the system. For the patient convenient the generated report will give it to the them. Provision to update excel report, Share reports with Government/Admin as per needs

C. Detection Engine:

The detection engine is detect the malnutrition in patient:Detection Engine is one of the important part of the system. As the name define it is for the detecting the malnutrition. Detection Engine is nothing but a java program. This is designed on the basics of some certain rules ,and that rules are define by the World Health Organization (WHO). The Detection Engine is the automated system to detect the malnutrition. The Detection Engine is run by the User Identify Agent. The result of the detection Engine is that the feed data of candidate or the person is malnourish or not. The Detection Engine is run on the data that are collected by resource agent

D. Dashboard Representation:

The Dashboard is the graphical representation of the data in the for of bar graph or in the pi chart. In our system we are showing both graph that is bar graph and pie chart. The dashboard represent the

graphical view of the data that is maintain in the database of a system. The graphical representation of data is display on the basic of selected region. If you are selecting the country then the system give you the graphical view of country with exact count of malnourish people. The region graph is showing the division on the basic of age of person or people. For the graphical representation of data we got the exact count, so for the data we can forecast the things related to malnutrition. If some region is have large number count of malnourish people then will focuses on that particular region.

E. Discussion forum:

Discussion forum is one type of discussion platform like blocs. At the discussion forum the users of our system can discuss on the some patient. It shows the discussion between all the systems Agent related to anyone patient/child. From this all the Agent can understand what actual problem behind the particular child and get the suggestion over an it.

F. ALGORITHM

Rule Based Algorithm: In Rule Based Algorithm there are several methods which can use to extract the rules from the data set. From the sequential covering algorithm rules are generated in a greedy fashion based on a certain evaluation measure. The algorithm extracts the rules one class at a time from the data set. The criterion for deciding which class should be generated first depends on factors such as class prevalence or cost of misclassifying records from a given class.

Direct Method:
Sequential Covering Algorithm:
Input:
D, a data set class-labeled tuples,
Att_vals, the set of all attributes and their possible values.
Output: A Set of IF-THEN rules.
Method:
Rule_set={ }; // initial set of rules learned is empty
For each class c do
Repeat
Rule = Learn_One_Rule(D, Att_valls, c);

Remove tuples covered by Rule form D;

Until termination condition;

Rule_set=Rule_set+Rule; // add a new rule to rule-set

End for

Return Rule_Set;

Sequential Covering:

Let E be the training set

– Extract rules one class at a time

For each class C

1. Initialize set S with E

2. While S contains instances in class C

3. Learn one rule R for class C

4. Remove training records covered by the rule R

Goal: to create rules that cover many examples of a class C and

Fig. 2. Sequential Covering Algorithm Diagram

IV. CONCLUSIONS

Our system focuses on the problem of malnutrition in India. It uses an improved communication structure and relational database to solve the existing problems. It provides the effective services to address malnutrition and is targeted to the areas where the malnutrition is highest. Although it assumes that there is no constraint on funds being provided by government, economic growth alone is insufficient to bring about significant reductions in the prevalence of malnourishment among children. Without a major shakeup in policy and an improvement in the effectiveness of its implementation, the attainment of the healthy and young India looks extremely unlikely. In this work we have studied the concept of data mining. And we also studied the existing system from which we will modifying our proposed system. We propose an efficient approach of detecting malnutrition in child and dividing the data using clustering algorithm using data mining and ruled based classification. And through this we are done with modeling phase successfully.

ACKNOWLEDGMENT

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[12] [16]S Pradeep and Yogesh Kumar Sharma (2019), "Using OpenCV for Machine Learning in Real Time Computer Vision and Image Processing", "International Journal of Recent Technology and Engineering (IJRTE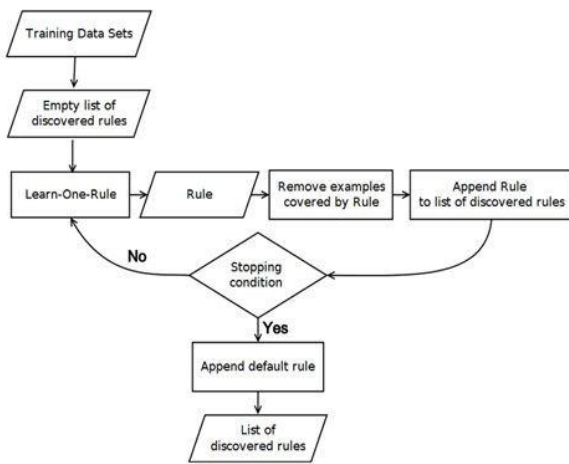)", ISSN: 2277-3878, Volume-8, Issue-1, May 2019.