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An Online Healthy Diet System :An Overview

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Abstract :

The Internet, which brought the most innovative improvement on information society, has also brought many remarkable changes of healthcare services. Via the Internet, accessing information about healthcare services became relatively easier for service consumers who need adequate medical treatments. Moreover, consumers can communicate with doctors to get medical advices or to make appointment by e-mail or instant messengers, which are more convenient communication channels than by phone. Because of these benefits, much more healthcare service providers started publishing web sites for their service on the Internet competitively; as a consequence, consumers can obtain wide choice of services and better service quality.However, there are also negative effects caused by exponential growth of the healthcare web sites. Because of too much information available, consumers cannot easily choose proper healthcare service among them. Some of them might not be able to judge what healthcare services are helpful because evaluating those services usually requires medical expertise. Moreover, there might be over-advertising web sites that show off exaggerated information about services.

1. INTRODUCTION:

Healthcare services on the Internet may confuse service consumers and make them more questionable. To help users to choose a proper service among the available services on the Internet, many brokering web sites for healthcare services such as healthcare web portals and search engines have been developed . The users can use the brokering web sites as starting points and find appropriate healthcare services using them. This improvement allows the users to access information about the services much easier than before, and the healthcare providers to save more lives. The brokering web sites, however, showed their limitation that more sophisticated mechanism is required in the domain of healthcare. The most of the users who does not have any knowledge about

healthcare or any idea what is wrong with their bodies cannot find out proper healthcare services. What they need is not organized information about services, but a professional guideline to the most appropriate services for a specific user. Therefore, recommendation systems for better healthcare are proposed. Recommendation system for the healthcare is a web site that recommends healthcare services or provides useful information to the users considering. Healthcare Provider Recommendation System [3] is an example of well proposed healthcare recommendation system. User can search the healthcare providers using location, providers' specialty and reputation. However, what this system could not solve yet is that novice users and patients still may not be able to find out proper treatment for them when they do not know their exact health status. Because the most of people lack of medical knowledge, the system may not be effective in real life.

1. LITERATURE SURVEY :

Ahmed Al-Nazer et al.[1]2014,proposed semantic Web and ontology engineering technologies to analyze user's preferences, construct a nutritional and health oriented user's profile, and use the profile to organize the related knowledge so that users can make smarter food and health inquires. A semantic framework that uses the personalization techniques based on integrated domain ontology, pre-constructed by domain experts, to recommend the relevant food that is consistent with people's needs. The empirical evaluation of the proposed framework shows promising results for recommending the relevant food information with a superior user's satisfaction.

J. Chiang et al.[2]2014, in this paper a portable activity pattern recognition system designed to automatically recognize the daily activity habits of users, and provide visualized life logs on the wellness self-management platform for patients and clinicians. Based on the participants and the clinician's comments, appropriate modifications were made. Irini Genitsaridi et al.[3]2013, in this paper an evaluation study on PHR systems that provides an insight on their current status with regard to functional and technical capabilities and extensions to a specific PHR system. A requirement analysis that formulates the composite evaluation model which use to perform a systems review on numerous available solutions.

A.Aljumah et al.[4]2013,in this paper predictive analysis of diabetic treatment using a regression-based data mining technique. The Oracle Data Miner (ODM) was employed as a software mining tool for predicting modes of treating diabetes. The support vector

machine algorithm was used for experimental analysis. Datasets of Non Communicable Diseases (NCD) risk factors in Saudi Arabia were obtained from the World Health Organization (WHO) and used for analysis. The dataset was studied and analyzed to identify effectiveness of different treatment types for different age groups.

C.Lazarou et al.[5]2012,proposed that data mining is a computational method that permits the extraction of patterns from large databases. The data mining approach in data from 1140 children (9–13 years), in order to derive dietary habits related to children's obesity status. Rules emerged via data mining approach revealed the detrimental influence of the increased consumption of soft drinks, delicatessen meat, sweets, fried and junk food.

X. Tao et al.[6]2011, in this paper, a personalized ontology model is proposed for knowledge representation and reasoning over user profiles. This model learns ontological user profiles from both a world knowledge base and user local instance repositories. The ontology model is evaluated by comparing it against benchmark models in web information gathering. The results show that this ontology model is successful. Jen-Hao et al.[7]2010, proposed personalized diet planning approach not only translates nutrient recommendations into realistic dish choices, but also accepts feedbacks from users to fine-tune their meal plans. The results showed that daily nutrition needs can be fulfilled by the designated meals, and the interactive diet planning scheme helps a user adjust the plan in an easier way. The guidelines generated by Smart Diet are expected to potentially improve the overall health and reduce the risk of chronic diseases of individuals.

M.Thangaraj et al.[8]January 2014, proposed diagnosis of vitamin D deficiency for which rule based Decision Support System (DSS) was used. This diagnosis task was achieved through neuro–fuzzy classifier. Ontology related to food supplements for the management of vitamin D deficiency. The Semantic Web Rule Language (SWRL) is used to create rules corresponding to vitamin D deficiency management. Finally, Java Expert System Shell (JESS) has to be used for reasoning, which provides appropriate food items for vitamin D deficiency management.

Thangaraj Muthuraman et al.[9]2014,The proposed framework has the ability to automatically trigger the rules and make the treatment recommendations. Therefore it reduces the required time of care providers, patients and saves many medical resources. Kelly. A. Tappenden et al.[10]17 July2013,This article represents a call to action from the interdisciplinary Alliance to Advance Patient Nutrition to highlight the critical role of nutrition intervention in clinical care and to suggest practical ways to promptly diagnose

and treat malnourished patients and those at risk for malnutrition. The importance of an interdisciplinary approach to addressing malnutrition both in the hospital and in the acute post-hospital phase. It is well recognized that malnutrition is associated with adverse clinical outcomes.

3. ALGORITHM

The tremendous rise in the technological development in the healthcare systems has to be maintaining history through variety of methods. The Decision tree algorithm is one of the methods used in healthcare systems.

Decision tree is an interactive application, which is developed to support physicians, and healthcare professionals for decision making [8]. To analyze the characteristics of users the decision tree can provide the relevant information to users by recommendation, follow-up, and monitoring.

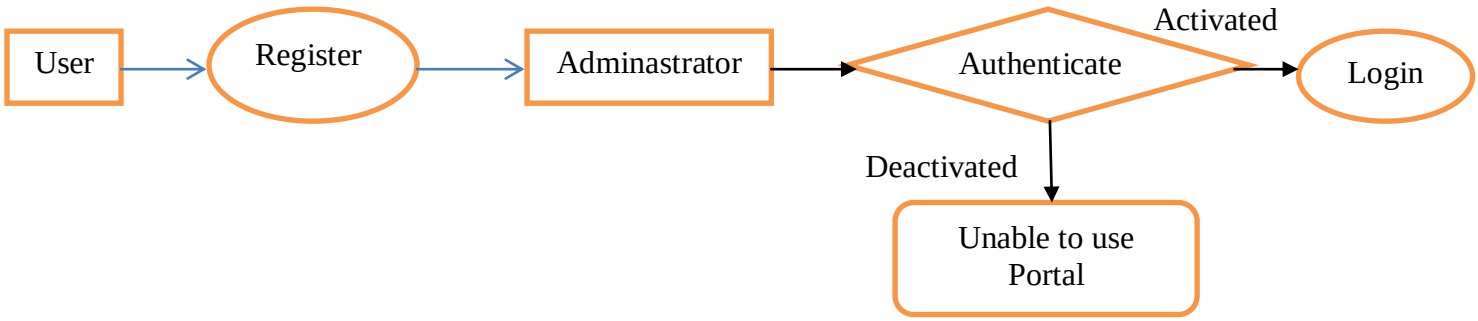
Here, we propose a simple algorithm steps for Healthcare recommendation

1. Start the process
2. Input User/Patient Name and his current medical condition
3. Search for the User/patient for his history.
   i. If Found, get his all major medical conditions stored in the history tables.
4. Calculate the food recommendation using a decision tree based on:
   i. Subset of Allowed food items for all of the medical conditions.
   ii. Daily requirement of the Nutrition based on the age of the patient.
   iii. Food preferences of the User/patient, likes and dislikes
   iv. His daily nutritional needs based on age and weight
   v. His economical status vi. Food allergies
5. Calculate the exercise recommendations using decision tree based on:
   i. Medical condition
   ii. Age/ weight
   iii. Allergies
   iv. Preferences
   v. Life style
6. Display the result of Food recommendation and Exercise recommendations calculate above.
7. Update the patient history with the current medical conditions and the recommendations provided.

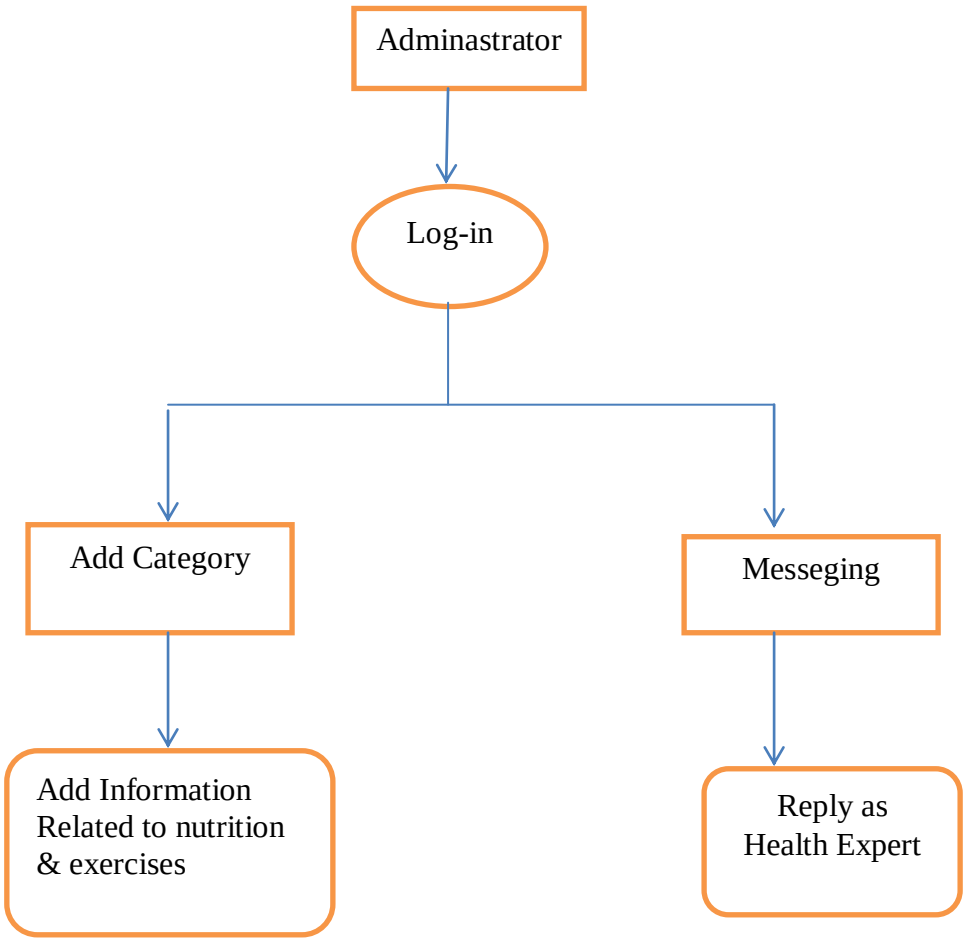
8. Stop process

Data flow Diagram

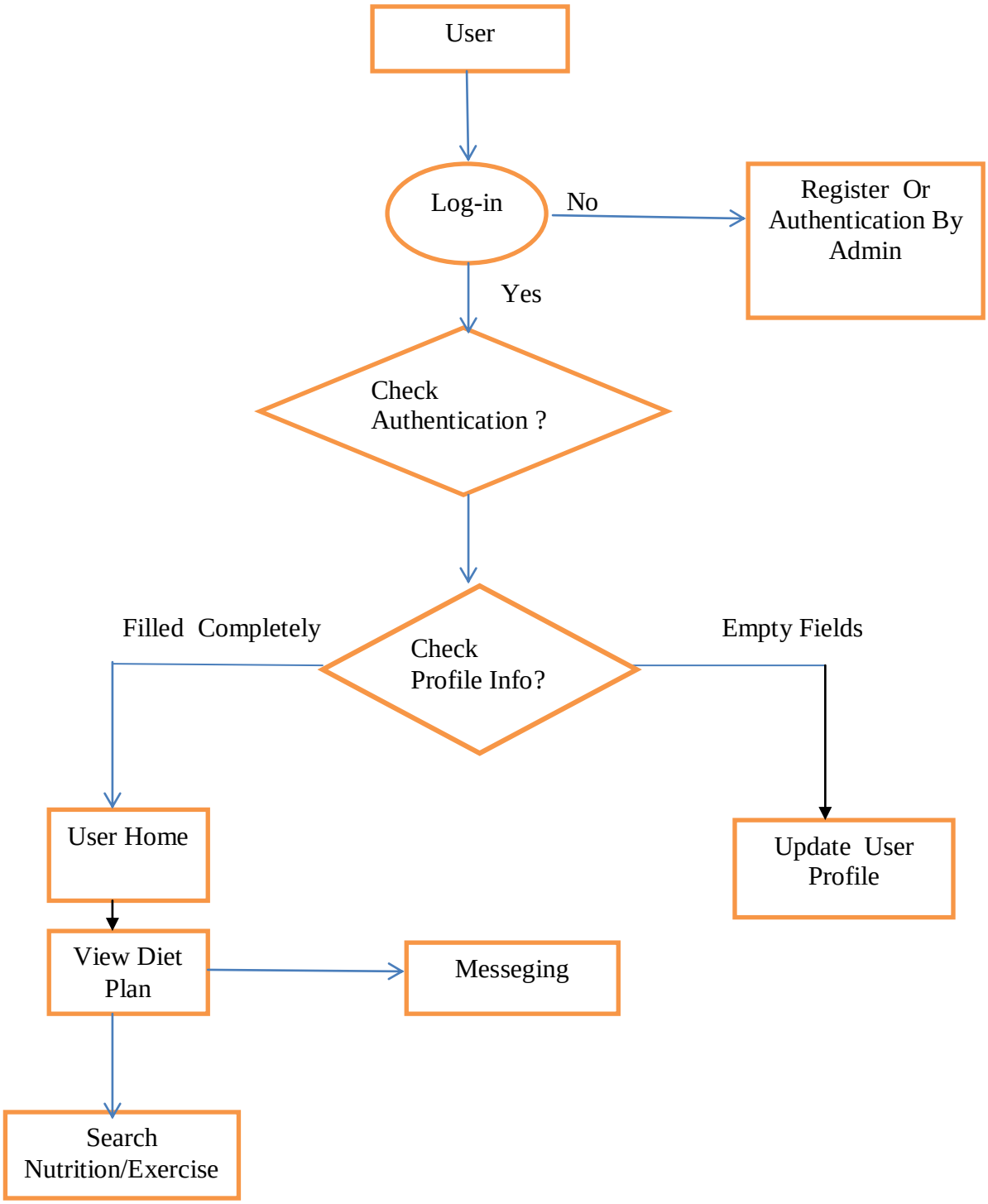
Level-1



Level-2

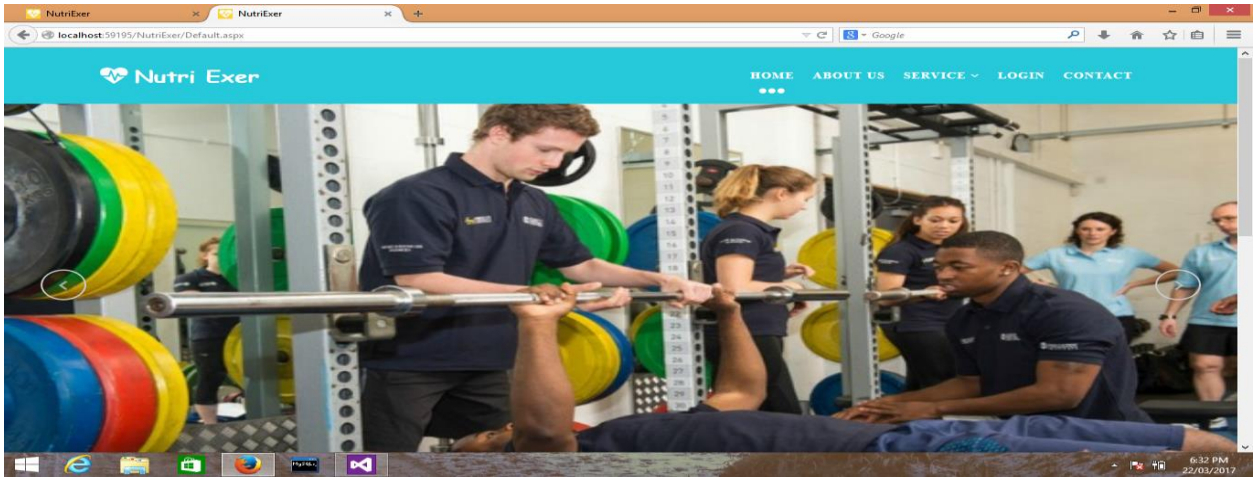


Level-3



4. IMPLEMENTATION :

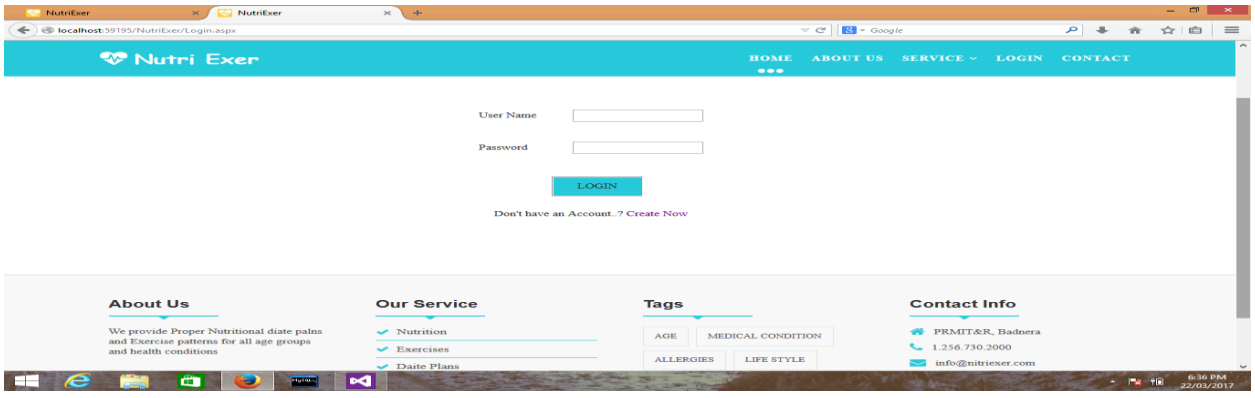
1 Main Screen



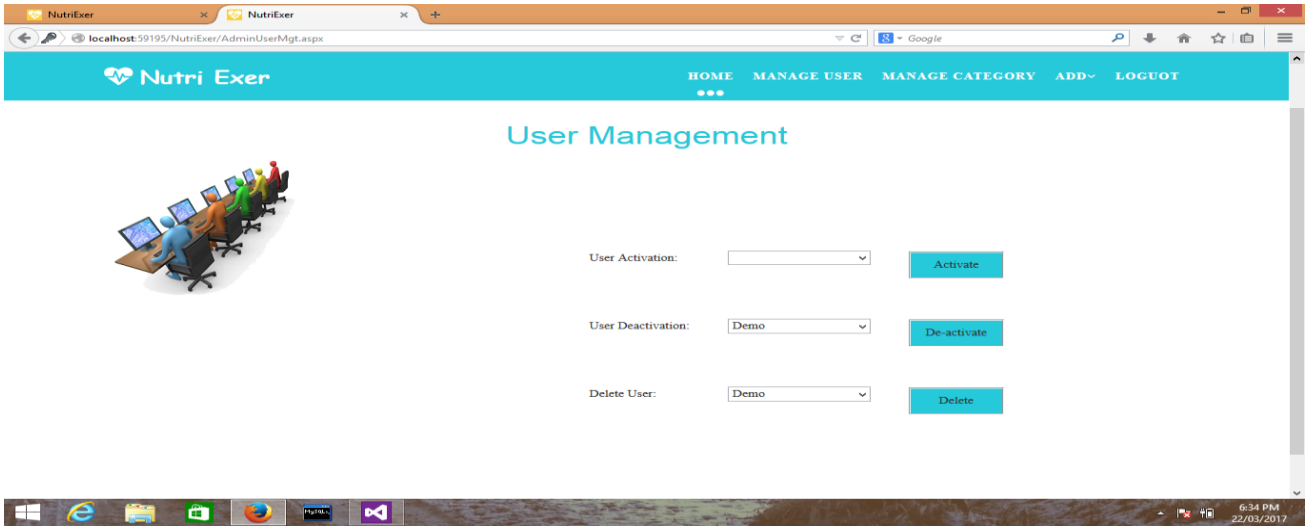
This is the main window of project . With using this window user can Login or can register his/her name and also can know services and contact details.

2 Log-In Screen

This window is used to get the login information about the user. It is used for the security purpose. This window is used to get login to both User and Admin.

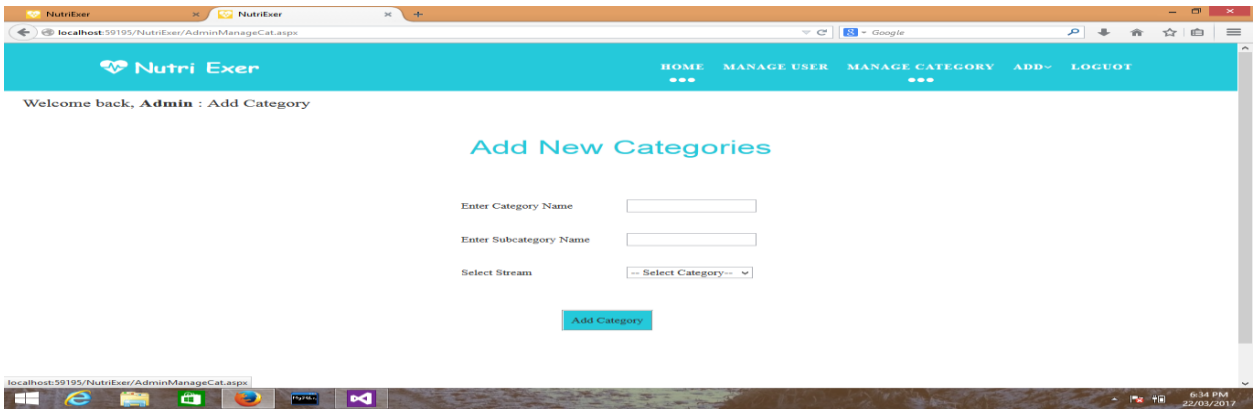


3 User Management Screen



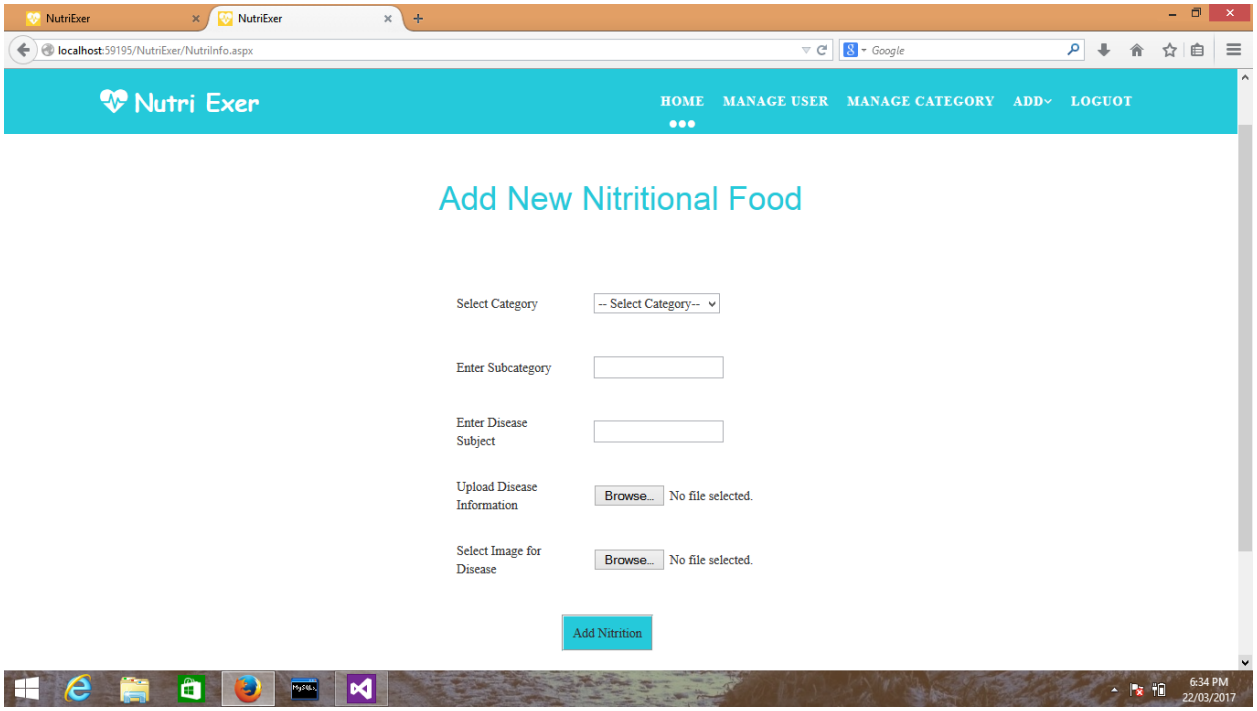
When Admin get log-in,this window will appear . With using this window, admin Can do user management in which admin can activate or deactivate registered Users also admin can manage categary and add category.

4 Add New Categories Screen



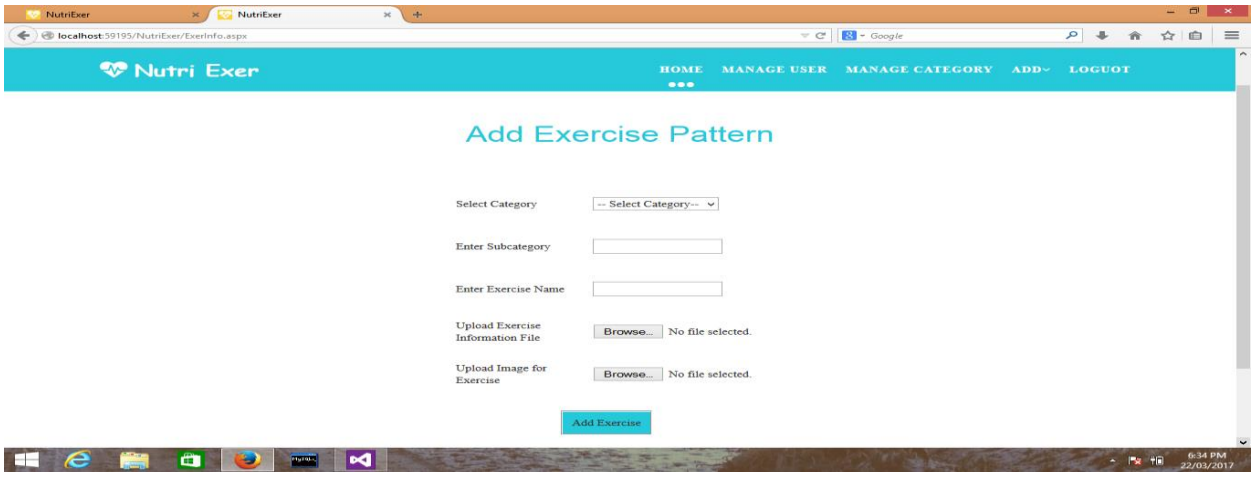
Here admin can add new category like allergies ,asthama,cancer then admin can its subcategories like drug allergies,blood cancer.

5 Add Nutritional Food



Here, at the top there is Add menu,using 'add' menu admin can add information about nutritional food by choosing category first like medical condition ,lifestyle, allergies and admin must add subcategory related to main category then admin can upload nutrition information and images related to subcategory.

6 Add Exercise Pattern Screen

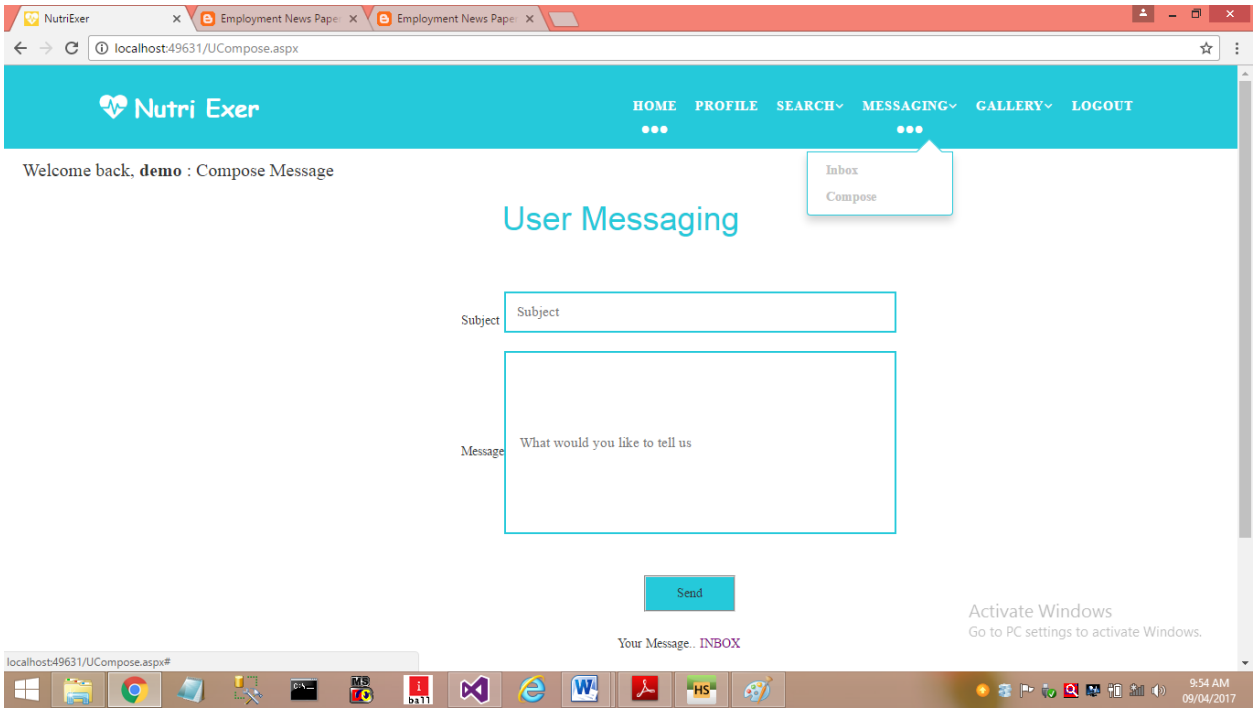


Here, Admin can add category like medical condition,lifestyle and allergies and can add its subcategories also its disease subject and can upload exercises for disease.

9 Search exercises and nutritions

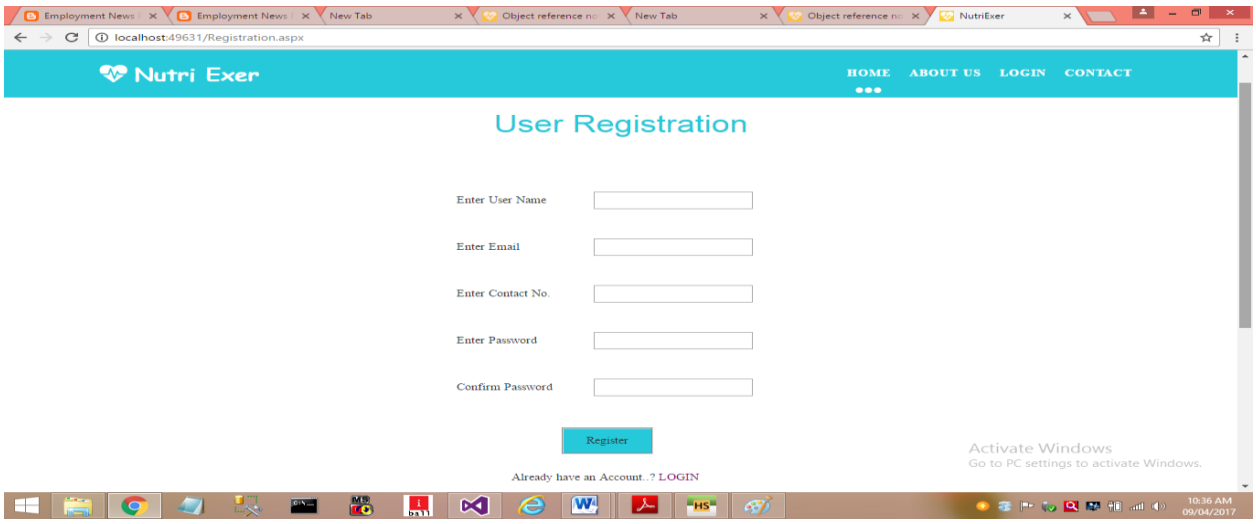
Here user can search nutritions and exercises information related to any medical conditions,life styles,allergies. This is very user friendly way to provide proper nutrition and exercise information to user.

10 User Messeging



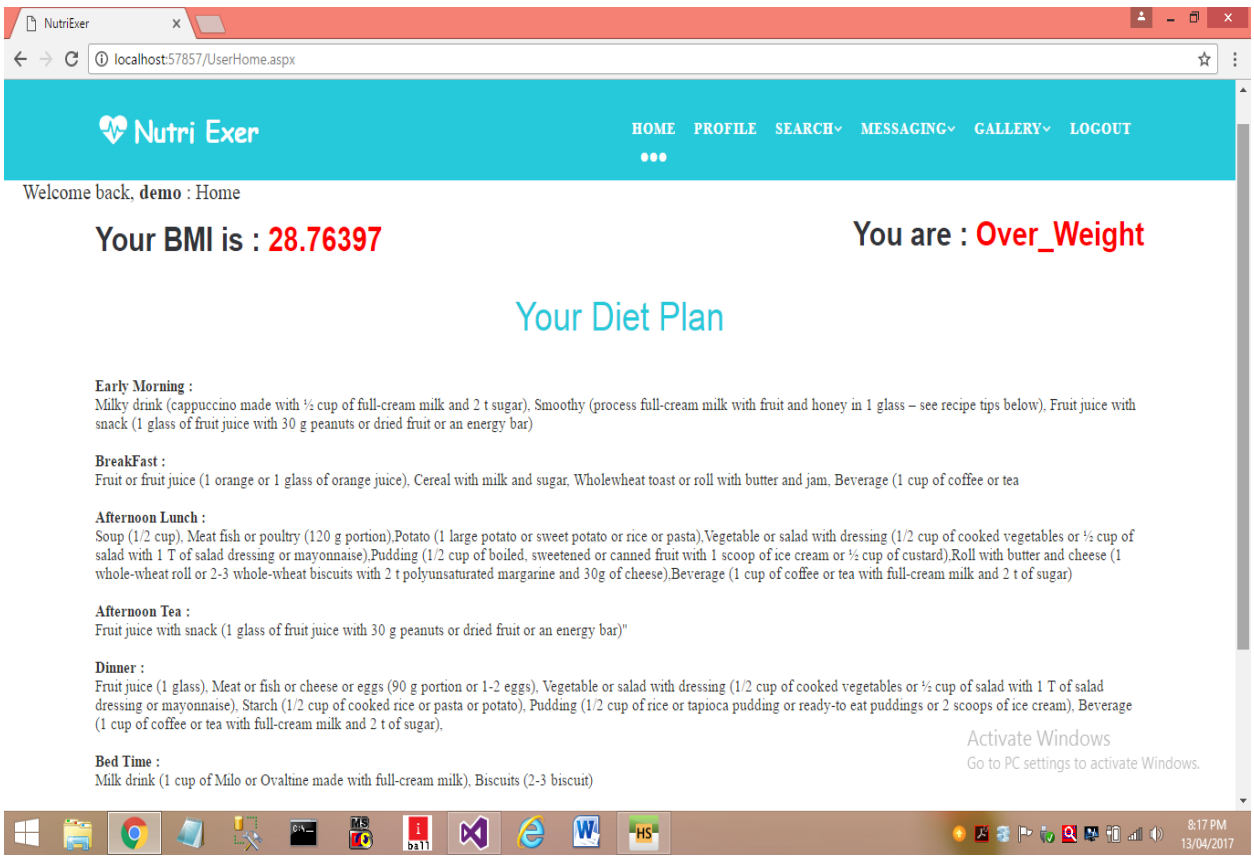
Here user can send any queries related to body exercises, nutritions to expert also user can view reply send by experts.

12 Register User



Here user or admin can registered himself/herslf using create now link on Log-in page.

13 Diet plan recommendation



Here healthcare system generated a diet for particular user based on BMI of user. This diet plan includes healthy routine breakfast, lunch, dinner food ,exercises should be done by the user.

5. ADVANTAGES

- Effective user interface of system
- Predict susceptibility to disease
- Improve disease detection
- Preempt disease progression
- Customize disease-prevention strategies.
- Reduce the time, cost, and failure rate of pharmaceutical clinical trials
- Eliminate trial-and-error inefficiencies that inflate health care costs and undermine patient care.
- Authentication and security of system activation of user is done by Admin.
- Diet plan is recommended by Health expert on the basis of BMI of user.

6. DISADVANTAGES

- Pain
- Exercise Related Injury
- Heart Problem
- Exercise Bulimia
- The Cost Factor
- Getting Heavy
- Hidden Calories

7. CONCLUSION

In this work, we propose a framework which recommends food and exercise based on user's requirement and constraints. This framework will use semantic web technology to analyze user's preferences. This system will found to be helpful to build a healthy and well nourished society. Our proposed system will use the profile to categorize the

associated knowledge so that users can make delicious food and exercise inquiries. As the framework is fully automated which gives relevant information to users profile with less intervention from domain experts.

The application and techniques will be efficient, feasible and user friendly tha would be less time consuming. In future work, we will work on enhancements and gather more feedback from users and also we can connect to the healthcare centers, which will allow healthcare providers that will assist the users who have medical problem.

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