

Virtual Diet Assistance

Kusum Lata Dhiman¹, Akash Manish Suryavanshi², Darshan Pankaj Magare³,

Abhishek Bhupendra Vishwakarma⁴, Vraj Alpeshkumar Modi^{5*}

^{1,2,3,4,5}Parul University, Vadodara, India

Abstract: Diet is biological being to perform its day-to-day activities of humans. The amount of food to be depends on a Person age, Height, weight, and gender. input to generate the amount of food a person can consume every day. A chart of foods to eat according to the calorie, energy and protein limit is generated alongside. The generated calorific and nutrient requirement can be stored and accessed as per the user's wish/doctor advices.

Keywords: diet.

1. Introduction

A. General Introduction

Virtual diet manager is a platform which provides a generic diet to its users. It acts as a diet consultant similar to a real diet. This system acts in a similar way as that of a diet. A person in order to know his/her diet plan needs to give some information to the diet such as its body type, weight, height and working hour details. Similar way this system also provides the diet plan according to the information entered by the user to the Doctor.

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 diet which also saves time and the user can get the diet plan in just a online appointment with a doctor. The system will give more accurate results as it accepts the data entered by the user and processes on the basis of which a diet plan is generated and ask the user if the user accepts the diet plan.

B. Objectives

- The purpose of such websites is to build trust, be an online presence so the interested people can find the required information about your fitness.
- A fitness website is a place to introduce people to the fitness parlor and the philosophy.
- Our aim is to provides our users to achieve desire diet and all diet related information and suggestion at a one place or in their hand.

2. Literature Review

In [1], Robert E. Ward, Abby D. Benninghoff, Korry J. Hintze stated that diet is essential in shaping the gut microbiome. They described how different fiber sources, oxidation products that result from cooking, and dietary fat emulsifiers mound the composition of the gut microbiome

and impact gut health. Humans obtain approximately 10% of their daily energy intake from short-chain fatty acids (SCFAs) derived from microbial fermentation. Many studies have been performed examining the relationship between the gut microbiome and health, and it is now known that symbiosis of the gut microbiome is associated with numerous diseases, including metabolic syndrome, inflammatory bowel syndrome, and colorectal cancer.

In [2], Steven S. Coughlin, Mary Whitehead believed that Smartphone Applications can help Promote Healthy Diet and Nutrition among individuals. Numerous applications provide features such as goal-setting, healthy recipes, grocery or restaurant choices, tracking of energy and nutrient intake, weight report, fitness challenges etc.

In [3], Mehnoosh Samadi, Shima Moradi believed that adherence to healthy diet is related to better linear growth with open growth plate in adolescent girls. Nutritional status has various effects on the bone health and growth during puberty by affecting growth plate cells. They hypothesized that there is a relationship between dietary patterns and bone age on girls who have experienced height loss.

In [4], Andreas G. Arens-Vollanda cited that many diet approaches can be stored in computers and electronic devices in correlation to the technological world. For example, FFQ or dietary recalls. Both food logs and barcode scanning are offered by most of the mobile applications. Integration with a personal health record or a health care workflow is found in mobile applications.

In [5], Patrick J. Skerrett and Walter C. Willett stated that there are several fundamental strategies for women to inculcate healthy eating. Healthy unsaturated fats, wholegrains, good protein sources and fruits and vegetables serve as examples for good strategies. Avoiding consumption of Trans fats and saturated fats, highly refined grains like plain flour and sugary beverages such as sodas. Diet that is based on these principles is healthy through all life stages.

In [6], Fatemeh Azizi Soeliman and Leila Azadbakht reviewed that regaining weight is a common problem for all those obese or overweight who have lost weight recently. Diet therapy, behavioral therapy, exercise or all of them combined have been advised as solutions. Switching to healthy food, lower card, low GI foods, protein rich meals, and moderate fat consumption have resulted in significant results on weight maintenance. Along with these, not being

awake late at night, substituting sugar-sweetened beverages, and following a healthy diet pattern play major role in weight maintenance.

Pros:

- If you proactively wish to monitor your calorie intake and take steps to curb your unhealthy habits, then this platform is effective in that they help you keep track of your calories and workouts.
- In doing so, they make you aware of what you are eating and make you accountable.

Cons:

- The main downside of this platform is it not so precise when it comes to calorie tracking as for an accurate result lots of data has to be taken for which we lack the capability now.
- If there is a more severe obesity issue, then a visiting to a doctor is better recommended, as this platform may not work effectively enough by itself.

Technologies used in this proposed system are:

- HTML
- CSS
- JAVA SCRIPT
- PHP
- BOOT STRAP

3. Methodology

A. Existing Methodology

- We can use agile methodology. Which is analysis the plan > Collaborative design > create and implement > take review from user and cycle is repeat.
- A way to manage a project by breaking it up into several phases. It involves constant collaboration with stakeholders and continuous improvement at every stage.

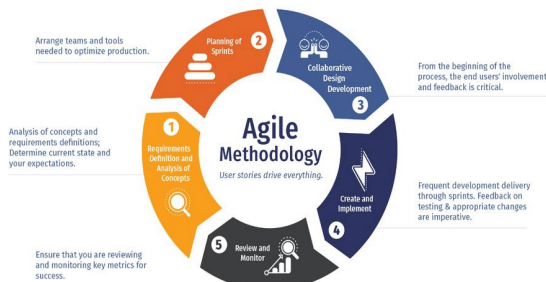


Fig. 1. Agile methodology

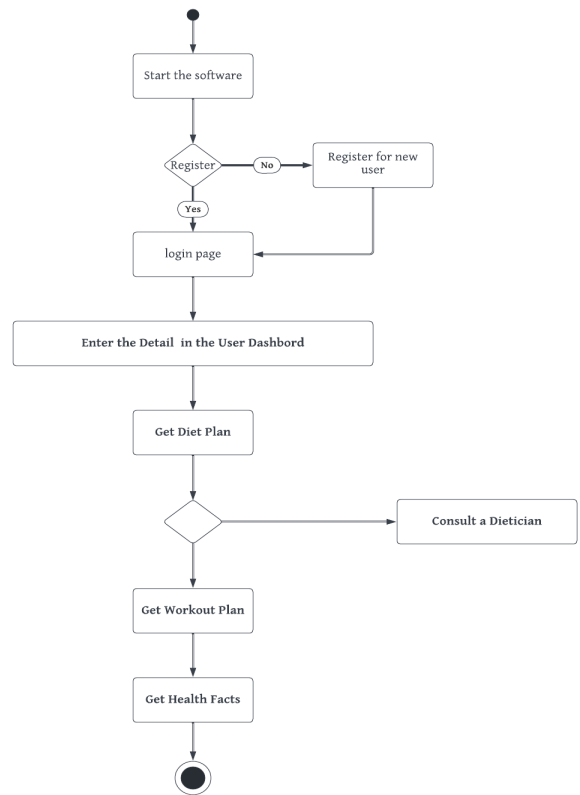


Fig. 2. Flowchart of virtual diet assistance

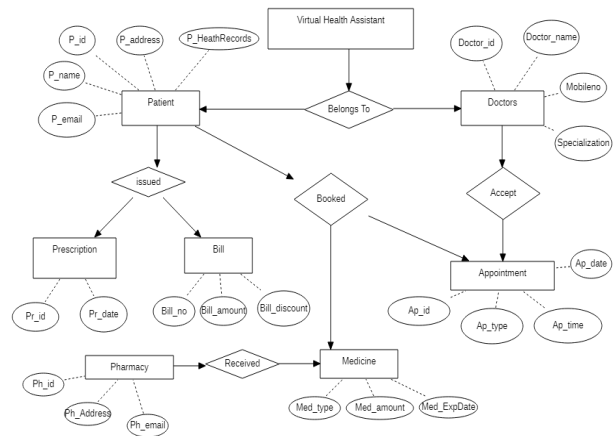


Fig. 3. ER diagram for virtual diet assistance

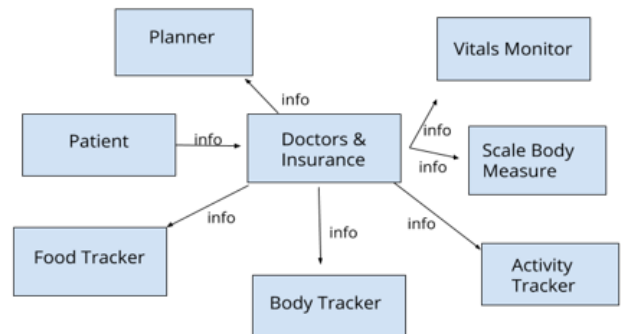


Fig. 4. DFD diagram for virtual diet assistance

4. GUI

A. Module Description

This system consists of three major modules, which makes VDA user friendly and more efficient. These two modules are as follows:

1) Customer module

In this module we can design and provide some functionality like as Login/logout page which is for customer. Users of the system, must be provided the following functionality.

- Register user
- Login/logout
- Admin Dashboard module
- Home
- Dashboard
- Signup

2) Admin Module (Database)

A database is that stores related information across multiple tables and allows you to query information in more than one table at the same time. In database you could set up multiple tables, for customers. The customer' would include a unique number for each customer, along with the name, address and phone number.

The database table would include:

- 1) Admin Module
- 2) Diet Module
- 3) Cart Items
- 4) Customer Details
- 5) Wise Details
- 6) Service Areas

5. Conclusion and Future Scope

A. Future Scope

- The project is easily extensible and can be improved by further incremental releases of the same.
- We plan to focus on improving the overall performance of the system. Also, interaction between guider and dietitian through video calling and secure prescription will be focused upon.
- We also plan start delivery option after for customised diet meals as a service.

B. Conclusion

- The proposed website, we will be able to bring the Diet platform in the hand of every individual. The platform can be deployed on the cloud by integrating different servers through the cloud in its future iterations. With respect to the feedback of the platform users, further improvements can be incorporated within the system

to make it more user friendly.

- In our approach for implementing this project is we have implemented a virtual diet assister. Our system comprises of main components such as of a user login and an admin login. The software system allows the user to create their profiles and upload all their details and their calculated by the system. The admin can check each user details and can remove faulty accounts. People who are in need of a serious healthcare but are busy with their schedules, can start using our platform and start following the diet and workout programs. With the help of this platform, user doesn't have to go to an actual dietician for a diet. he can have a diet in his hands.

C. Application

- We can provide best possible diet food recipe which will be preferred by doctor.
- Our aim is for our users to stay healthy and good.

References

- [1] Robert E. Ward, Abby, D. Benninghoff, Korry J. Hintze, Food matrix and the microbiome: considerations for preclinical chronic disease studies, June 2020.
- [2] Mehnoosh Samadi, Shima Moradi, Leila Azadbakht, Mansour Rezaei, Niloofar Hojati, "Adherence to healthy diet is related to better linear growth with open growth plate in adolescent girls," April 2020.
- [3] Steven S. Coughlin, Mary Whitehead, Joyce Q. Sheat, Jeff Mastromonico, Dale Hardy, and Selina A. Smith, "Smartphone Applications for Promoting Healthy Diet and Nutrition: A Literature Review," J Food Nutr. 2015;2(3):021.
- [4] Andreas G. Arens-Vollanda, Ljubomira Spassovaa, Torsten Bohnba Luxembourg, "Promising approaches of computer-supported dietary assessment and management—Current research status and available applications August2015.
- [5] Patrick J. Skerrett and Walter C. Willett, "Essentials of Healthy Eating: A Guide," 2012.
- [6] Fatemeh Azizi Soeliman and Leila Azadbakht J. Res, "Weight loss maintenance: A review on dietary related strategies, Med Sci., 19(3):268–275, March 2014.
- [7] Stephen J. Simpson; David Raubenheimer, "The Nature of Nutrition: A Unifying Framework from Animal Adaptation to Human Obesity, Princeton University Press, 2012.
- [8] Mary Kay Mitchell W. B. Saunders, "Nutrition across the Life Span," 1997.
- [9] Charles Tanford, "Nature's Robots: A History of Proteins," Oxford University Press, 2001.
- [10] Mark Lawrence, "Public Health Nutrition: From Principles to Practice," 2007.
- [11] Wellman, Nancy S.; Johnson, Mary Ann, Translating the Science of Nutrition into the Art of Healthy Eating," vol. 28, no. 3, 2004.
- [12] Hassan, Louise M.; Shiu, Edward M. K.; Michaelidou, Nina, "The Influence of Nutrition Information on Choice: The Roles of Temptation, Conflict and Self-Control," The Journal of Consumer Affairs, vol. 44, no. 3, 2010.
- [13] Farena, Stephen J.; Ness, Daniel, "Calories, Energy, and the Food You Eat," Science Scope, February 2012.