iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 10 **Issue:** V **Month of publication:** May 2022

DOI: https://doi.org/10.22214/ijraset.2022.43594

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 10 Issue V May 2022- Available at www.ijraset.com

Diet Consultant App using AI

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Abstract: ***FitTrack is an android based efficient AI application which acts as your personal dietitian and nutritionist which helps you to keep track of your overall diet and activities.***
The main objective of this application is to provide the users/clients an easy way to be fully conscious about their health which unfortunately is very difficult for them due to their hectic day to day life.

I. INTRODUCTION

Just similar to a human dietitian, this AI Diet Consultant is based on android operating system which will act like your device dietitian. When you go to a doctor of nutrition, than she will ask you your personal details related to body and health such as your age, your height, your weight etc.
Just similar to this doctor, this artificial intelligent diet consultant also asks you similar questions in your device and you have to answer all those questions and then this AI Diet Consultant will also advice you about what should your intake in your diet and what should you ignore in order to keep yourself healthy via your diet.
Generally, you have to hire a dietitian in order to get advice. Hiring a nutrition doctor will not only waste your time and efforts for calling them, going to them and so on but also cost you very high as their charges per month are very high. A situation might also arise when they will not available for you and you have to search for some other dietitian urgently.
The main advantage of using this standalone AI Diet Consultant application is that the time required by the people to travel to the dietitian will be reduced and also it reduces the cost of hiring dietitians for some particular purpose.

II. LITERATURE REVIEW/SURVEY

In the Literature Survey part, we noticed the principal objective of our undertaking which was to be made and begun looking for distributed papers on it which will help us in building the application. We went across numerous IEEE and Bayes Papers and found many papers which was some or the alternate way associated with our task in view of wellbeing. We found many fascinating papers as well as straightforward ones, we accumulated the information from them. In the current medical services framework, the essential necessity and hindrance is actual presence of individual and dietician for each interview. In the current eating regimen advisor framework, you need to employ a dietitian to get guidance. Additionally, there is a high opportunity of confusion of information as well as event of mistakes. In addition, it is tedious.
With the expansion in volume of patients in the medical care establishments, customary strategy for the board has left stage. Subsequently, a high level Diet Consultant Management System has been the interest of time. A few Systems were constructed straightforwardly for sole motivation behind calories admission and some were Activity reason applications, a few ventures site based and some were versatile application based.
Our task was to be based on android so that individuals can get a decent UI and furthermore the application ought to be easy to understand. A portion of the applications were paid-to-utilize and some were free, we needed to assemble our task to be free to all. We began gathering data on the current framework and how it functions and furthermore a genuine dietitian works and computes an eating regimen in view of an individual's subtleties like level, age, weight, orientation and so forth.
Indeed, even the web helped us a ton for discovering a few fundamental recipes for computing the eating regimen and absolute calories. An individual's eating routine thoroughly relies on his BMI and BMR values.
The complete calories to be consumed ought to be adjusted extent of full scale supplements like Proteins, Carbohydrates and Fats. Additionally, there is a high opportunity of confusion of information as well as event of blunders. Additionally, it is bulky and tedious. With the expansion in volume of patients in the medical care organizations, particularly now after COVID pandemic conventional technique for the board has left stage. Therefore, a high level Health Care Management System has been the interest of time.

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III. METHODOLOGY

The system comprises of 2 major modules with their sub-modules as follows:

A. Admin

1) *Login:* Admin can login his personal account.
2) *Add Food:* Admin can add food with its nutritional detail in database.
3) *Create Custom Plan:* Admin can build a custom plan for user if the request is received from the user.
4) *View User:* Admin can see user data.
5) *View Feedback:* Admin can view feedback message received from registered user's.
6) *Logout:* Admin can logout from his account.

B. User

1) *Register:* User can register his detail.
2) *Login:* User can login his personal account by providing valid username and password.
3) *Diet Plan:* User can see his diet plan which is generated by the application with Macro Nutrients data under each Category.
4) *Diet Track:* User can make a record of the food he has eaten for the day or see the track history of the past and simultaneously can see how much calories he/she has consumed while eating the food.
5) *Custom Plan:* If User can not satisfy with application generated diet plan then he can request for custom plan.
6) *Feedback:* User can give feedback over his experience.
7) *Logout:* User can logout from his account.

IV. PROJECT WORKING DIAGRAM:

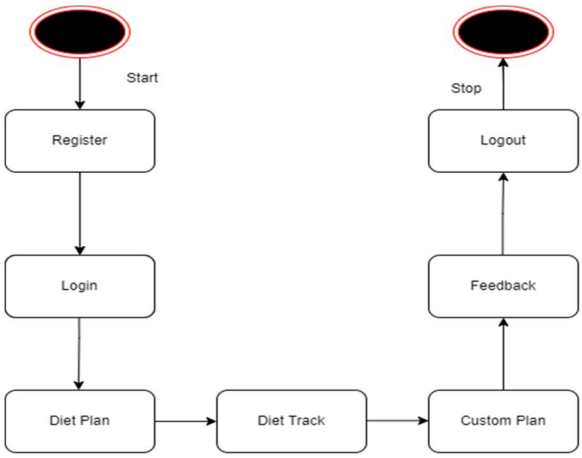


Fig1: Activity diagram for User

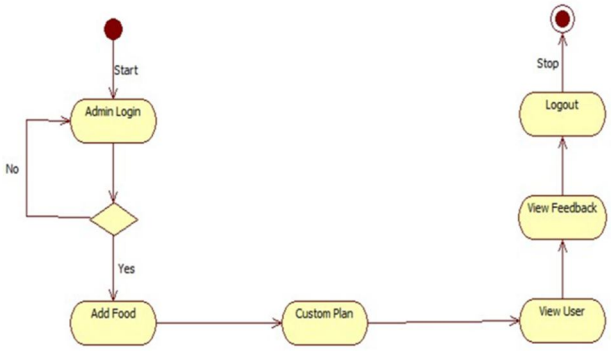


Fig2: Activity Diagram for Admin

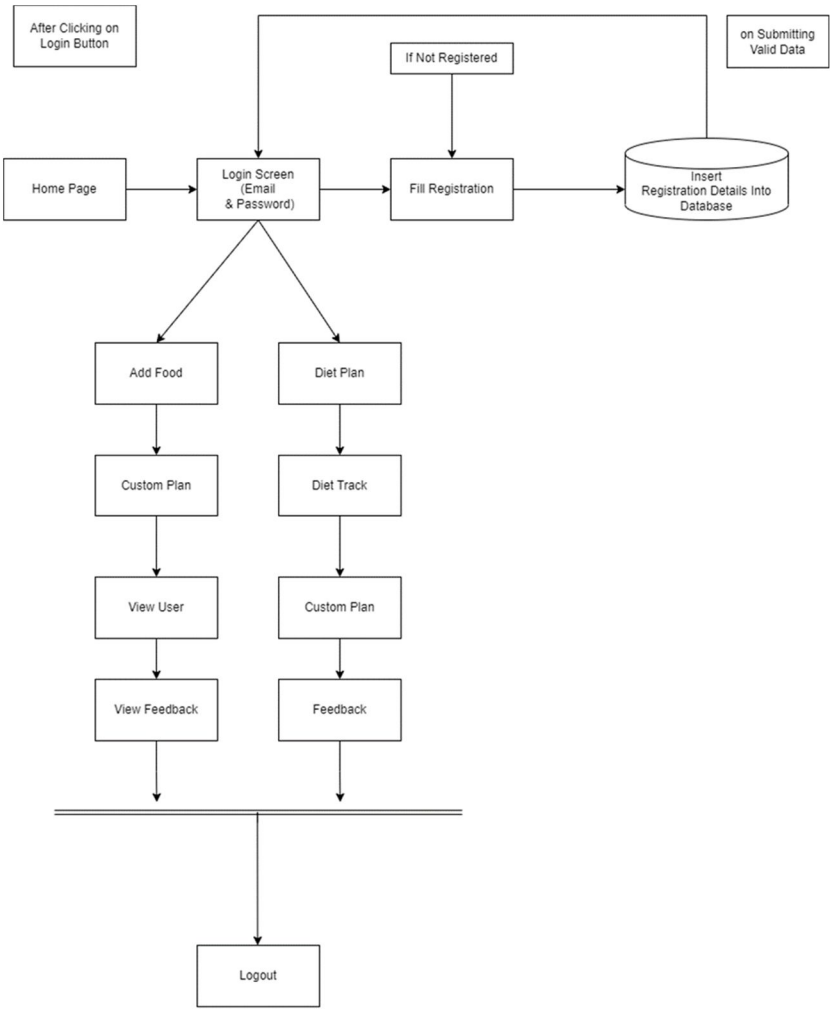


Fig3: Project Flow Diagram

A. Hardware Requirements

1) Laptop or PC

- i3 Processor Based Computer
- 1GB RAM
- 5 GB Hard Disk

2) Android Phone or Tablet

- 1.2 Quad core Processor or higher.
- 1 GB RAM

B. Software Requirements

1) Laptop or PC

- Windows 7 or higher.
- SQL Server 2008
- Java
- Android Studio
- Azure Data Studio

2) Android Phone or Tablet

- Android v5.0 or Higher

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V. WORKING

It goes about as an eating regimen specialist like a genuine dietician. This framework acts likewise as that of a dietician. An individual to know his/her eating routine arrangement needs to give a data to the dietician, for example, its body type, weight, level and age. Client's BMI and BMR will be determined and in view of BMR and BMI result, the eating regimen will be created.

Comparative way this framework likewise gives the eating regimen plan as per the data entered by the client. The framework asks every one of his information from the client and cycles it to give the eating routine arrangement to the client. Consequently, the client doesn't have to visit any dietician which additionally saves time and the client can get the expected eating regimen plan in only a tick.

The framework will give more exact outcomes as it acknowledges the information entered by the client and cycles it relying upon certain measurements definitely known to the application based on which an eating regimen plan is created and inquire as to whether the client acknowledges the eating routine arrangement or need a few changes. On the off chance that client needs transforms, he can put custom solicitation and the dietician will refresh the eating routine arrangement according to the solicitation so the eating regimen is kept up with as well.

The BMI (Body Mass Index) is determined by applying the accompanying condition:

SI, Metric Units:

BMI = 703 * mass(kg)/height^2(m)

USC Units:

BMI = 703 * mass(lbs)/height^2(in)

The BMR is determined utilizing the Mifflin-St Jor Equation,

For Men,

BMR = 10W + 6.25H - 5A +5

For Women,

BMR = 10W + 6.25H - 5A - 161

Where,

A= Age

W = Weight

H = Height

VI. RETE ALGORITHM

The RETE calculation is an example matching calculation planned by Dr Charles L. Forgy of Carnegie Mellon University. RETE is a Latin word which means net. It is an extremely effective calculation for matching realities against the examples in rules. Comprehension of the RETE calculation will make it more clear regarding the reason why composing rules In one manner is significantly more efficient.

The RETE network is a direct non-cyclic chart that comprises of hubs addressing designs in the states of the guidelines. The hubs act like channels; they test the approaching token and send just those that have finished the assessment. The RETE network comprises of two parts: alpha organization and beta organization. Alpha organization comprises of hubs known as alpha hubs. Every alpha hub comprises of one input that characterizes intra-components. Beta hubs are parts of Beta organization where two sources of info are taken from every hub to characterize between component conditions.

A token is made from the declaration of every reality. At first the tokens enter the root hub, for every symbolic kind, the organization then split a branch. A duplicate of the token is gotten by every thoughtful hub and it then plays out a SELECT activity to choose comparative tokens.

Alpha hubs get a duplicate of token hub from the benevolent hub. On getting the token, the alpha hubs play out a PROJECT activity furthermore, from that symbolic parts are removed that coordinate with design factors. The circumstances are essentially assessed by the alpha hubs. The conceivable cross item for a standard not entirely settled by the Beta hub. Then, at long last principles containing activity will be executed.

The RETE network starts with a root hub called as the RETE Node. A significant downside of RETE is that it is restricted to only one root hub and the whole cycle depends on just a single boundary. We will utilize three boundaries and these boundaries will assume a pivotal part in deciding the eating routine. Age, Height, Weight, Gender Body Metabolism Rate and Body Mass Index of the client will be thought about.

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Endless supply of these, appointed rules will be terminated and an eating routine will be chosen from our insight base. This diet will then, at that point, be changed thinking about the inclinations and ailments of the client. The client will likewise be given the choice of looking for options.

Model: If BMI<25 & BMI> 19 we will get a specific Diet according to the BMR value calculated using the BMI input.

VII. RESULTS

Subsequent to directing broad exploration in regards to the different issues looked by the people to take a solid eating regimen, we have effectively made an application that gives the answer for these issues by making a modified eating regimen plan for clients free of charge with a higher extent.

VIII. FUTURE SCOPE

1) Dietitians can utilize this system to ensure what they suggest patients.
2) This system can be very much utilized in clinical universities for educating and rehearsing purposes so understudy can gain from it.
3) This system can likewise be used in rec center especially for working out the clients' calories and diet plans.
4) Individual can likewise utilize this product particularly for themselves in home.

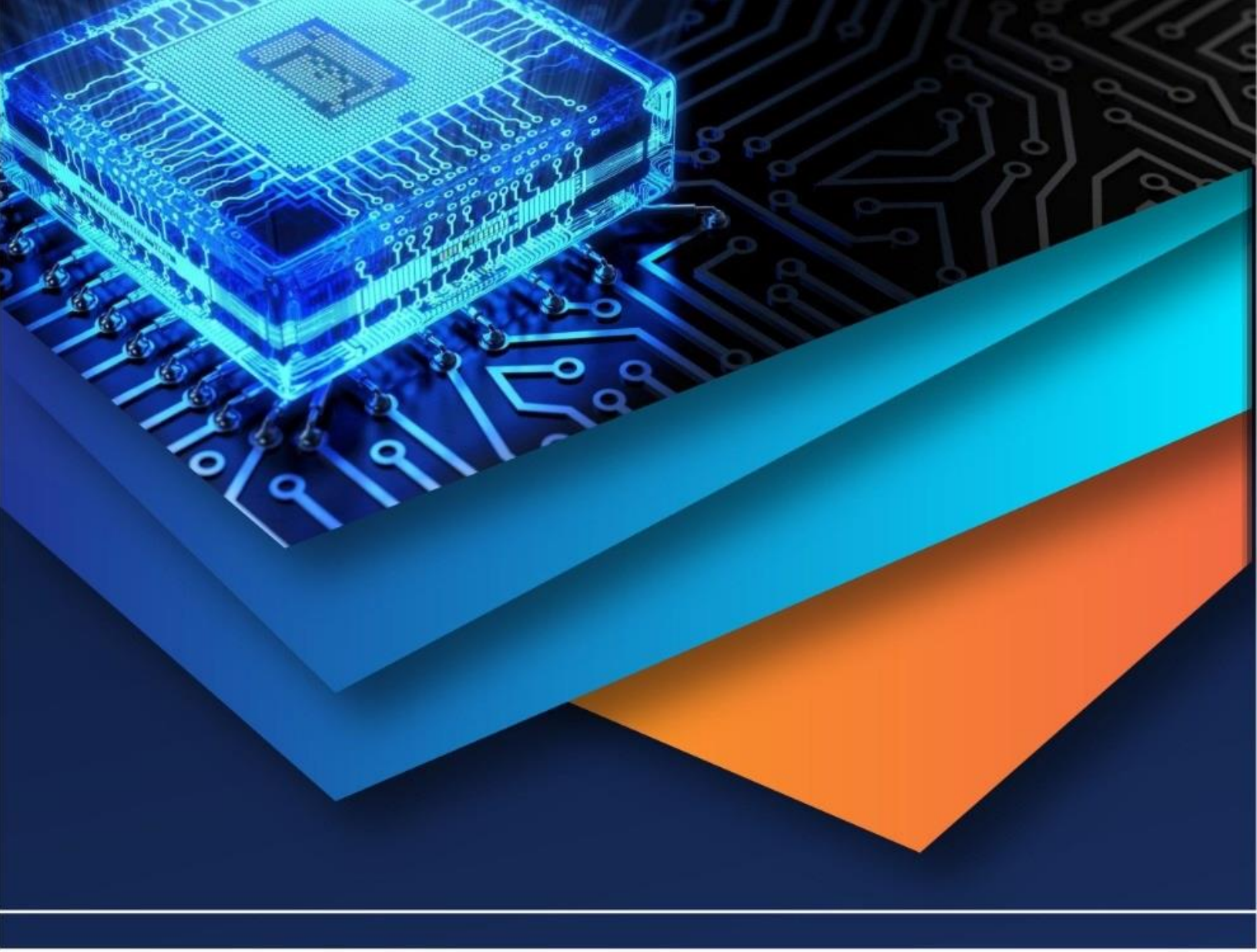
IX. CONCLUSIONS

The System is a valuable apparatus for instructing clients on healthful related themes with the assistance of enormous and dependable information base made with help of master dieticians. Many individuals counsel a dietician when needing a legitimate eating regimen to go with their activities. Since, our proposition will assist individuals with the eating routine; they won't have to visit dieticians. The clients will get diet conveyed to their screens for them which will save time as well as cash as the administrations given by our undertaking will be liberated from cost, in contrast to different choices available right now. Our application is utilizing man-made reasoning calculation called RETE calculation so every single client will get a customized diet as indicated by their need and inclinations.

REFERENCES

[1] Sneha Sadhwani [1], "way of life and wellbeing: advantages of utilizing wellness applications" medindia.net on 22nd June 2019
[2] Chinan Mehta [2], "Top advantages of building wellbeing and wellness applications: significance of wellbeing and wellness applications" SolutionAnalysts.com on third walk 2020.
[3] Oleksandr Sh [3], "How to make a wellness application that moves clients" cleverhead.com on 30th November 2020
[4] Antasia Khomych [4], "Ten should have highlights for wellbeing and wellness applications" blog.getsocial.im on 22nd september 2020
[5] Jen-Hao Hsiao and Henry Chang [5],"SmartDiet: An individual eating routine specialist for wellbeing feast arranging" IBM Research Collaboratory, Taiwan
[6] Divya Mogaveera and Vedant Mathur [6],"e-Health Monitoring framework with diet and wellness proposal utilizing AI", ICICT 2021
[7] Dr. Meera Gandhi and Vishal Kumar Singh [7], "IntelliDoctor - AI based clinical colleague", ICONSTEM 2019
[8] Sanchit Kalra, Garvit Arora and Rajat Aggarwal [8], “Application of Artificial Intelligence for weekly meal planning for children” IIT Delhi
[9] Fule Wang, Yuan Yuan, Yu Pan, Nin Hu [9], “Study on the principles of the intelligent Diet Arrangement System based on Multi Agent”, College of Management Science and Engineering, Nanjing University of Technology, Nanjing
[10] Shaikh Saqib, khan Vaqui, Shaikh Mohd Asfaque [10],”Online Dietician Using Artificial Intelligence”, Rizwi College of Engineering
[11] Kartik K , Vignesh K, M.Dhurgadevi [11],“Android based diet consultant using rule pattern based algorithm”, Nehru Institute of Engineering and Technology Coimbatore
[12] Prajakta Dadasaheb Jadhav [12], “AI Dietician”, Modern Education Society’s College of Engineering Pune,India.
[13] Siddharthan Chitra Suseendran [13],”Virtual Nutritionist using AI”, IJEAT(2019)
[14] Yulong Xu [14],”Research and Implementation of Improved Random Forest Algorithm Based on Spark”,Hebei University of Technology Tianjin, China (2017)
[15] Xiaolong Xu, Wen Chen [15], Implementation and Performance Optimization of Dynamic Random Forest”, IEEE (2017).

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