Artificial Dietitian

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Abstract— In today's lifestyle, people are moving towards achieving a fit and healthy body. This shift has changed the way of living in almost every household. Now everyone craves for healthy and nutritious food to be placed on their plates. Hence, healthy eating and nutritious food have become an essential part of everyone's lifestyle to achieve a balanced and healthy life in such busy and hectic environment. Hence, to make their fitness path a bit smoother and to enhance their experience, I have created an Android [Personal Dietician] application to provide a broader approach in providing a better living through nutritious and fit diet plan to the users. In this project, the Personal Dietitian android application will use food ontology APIs, which is a part of knowledge representation and semantic web technology to produce diet plans for the users. Additionally, the app will provide an activity tracker which will track the steps walk, climb, and run by the user. The activity tracker is built using an API which uses accelerometer and gyroscope sensors built into the Android device. The application will start by signing up or logging the user with the Personal Dietitian application. The signup and login screen which will be useful to the user to manage their activities in the application. The application provides four main user functionalities, namely, the activity tracker, meal planner, reports, and healthblog.

Keywords: Expert system, benefits, knowledge, artificial dietitian

I. INTRODUCTION

In today's lifestyle, people are moving towards achieving a fit and healthy body. This shift has changed the way people are living right now in almost every household. Hence, healthy eating and nutritious food have become an essential part of everyone's lifestyle to achieve a balanced and healthy life in such busy and hectic environment On the other hand, an imbalanced diet can lead to disastrous results on one's health, which may lead to diseases such as obesity, diabetes, etc. However, such conventional diseases and their symptoms can be reduced or prevented by active living and by including better nutritional diet. Hence, those in search of healthy and nutritious food have used the internet to research the food's nutrition values. According to the Analytics of the world, "the mobile development world saw a sudden 72% increase in the usage of health apps in 2018-19". As a result, many companies and developers introduced healthcare applications on mobile devices.

In the Android market, there are many healthcare applications available that provide diet plans for their clients. However, there is no such app available that can provide a diet plan as well as activity tracker functionality to their user day by day. Hence, to make their fitness path a bit smoother and to enhance their experience, I have built an Android website called Artificial Dietitian, to provide a broader approach in providing a healthier living through nutritious diet plan to the users. We have developed website that useful for the mass crowd of the world for taking care of health.

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II. METHODS AND MATERIAL

We have created website using HTML, CSS, JavaScript, PHPfor the diet plan. We have implemented our backend using PHP, MySQL, for user interface. We add BML, Calories calculators for user's fitness and nutrient check-up. We add dietician bot which is powered by SnatchBot Plug-in. We added food pyramid and Calorie guide for some data on bases of Calorie calculator. We have also added the basic introduction for health guide. We used the Google API for its large and widely used interface that can easily use by both young and old.

No need of consulting doctor for diet plans. This system provides full details of the nutrient constitution in body and if required more or not along with the plan by just answering to some queries. Save money and very effective and give accurate results as it is coded with keeping diet chart in mind. These are alternative diet chart provided by the system if the user doesn't like any.

This system asks about how many hours the user works, his height, weight, age etc. and then calculates the nutrient value needed to fill up users need.

III. IMPLEMENTATION

We implement the ARTIFICIAL DIETITIAN application with the help of MySQL, PHP, CSS, and JavaScript.

User will get the information about a diet that they want to visit if they are at that diet in just one- click. User can give their preferences, as to which diet they want to prefer, even the user can bookmark the diet-plan they want to take, user can avail notify me option to get notifications on tracking hours of different diet that they want to take. User doesn't want to notifications; they can switch off the notification through their profile. In the Proposed solution the website "Artificial Dietitian" will use knowledge representation and semantic web technology in the form of the Food Ontology APIs to produce the diet plans for the users. Additionally, the application will provide an Activity Tracker which will tracks the steps walked, run, and climbed by the user using mobile device inbuilt APIs, that is the accelerometer and gyroscope sensors. Through that sensor,

the application will also show the current activity the user is doing at that time, for example, if the user is walking the application will display walking on the activity tracker screen.

The meal planner of the application will help the user to add meal plans for breakfast, lunch, and dinner to the user's food log. The application shows the exact calories the user needs for a day by calculating the user's BMR (Basal Metabolic Rate) through the user's general information (Height, Weight, Gender, and Age) and his/her activity level. Additionally, through this application, the user can also scan the products directly on the market shelves to see the nutrition values and calories that product contains and later add the item to his/her food log. The proposed application will also help the user to see his/her activity by providing the weekly progress report in a bar chart format by simply clicking the icons in both activities (Activity Tracker and Meal Planner). User can also see the weekly and monthly reports in the form of a line and pie charts. Personal Dietitian also offers different health blogs through a "blog API" to make the user more active and motivated. The notification system of the proposed application also helps the user to add their foods to their food logs throughout the day. The main objective of this is to develop a system that reduce the travelling cost and time of people, also gives good health service. No need of consulting doctor for diet plans.. Save money and very effective and give accurate results as it is coded with keeping diet chart in mind. These are alternative diet chart provided by the system if the user doesn't like any.

IV. RESULTS AND DISCUSSION

There are many functions that are present in the application to enrich the users experience in using it. After the registration the user's data gets stored in the database and the user can use the login, for both of these functions.

After the login the user is introduced to his/her profile, if the user is new member and how want to look out for his diet, he can make a meal plan where everything related to that meal plan will be shown there and if he want to check his health blog like BMI etc. it will also be shown there according to Fig.1. Adding to this user can track their activities by a tracker where all the results will be shown like the calorie counter, their monthly/weekly report, calorie calculator, etc.
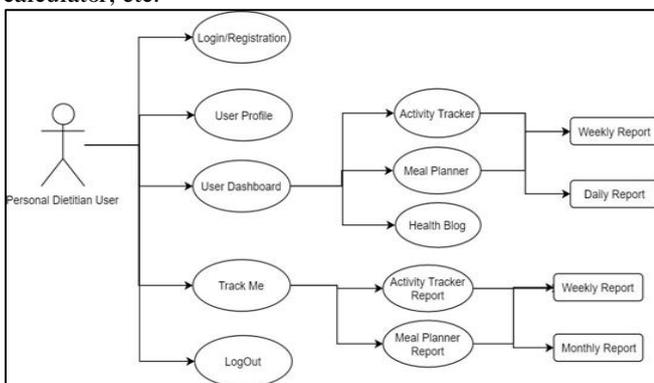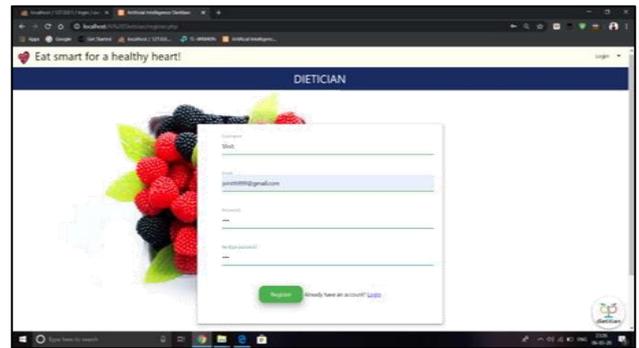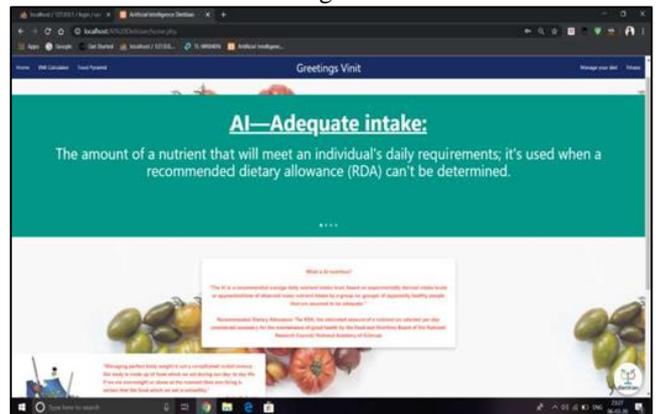

Fig. 1:

Fig. 2:
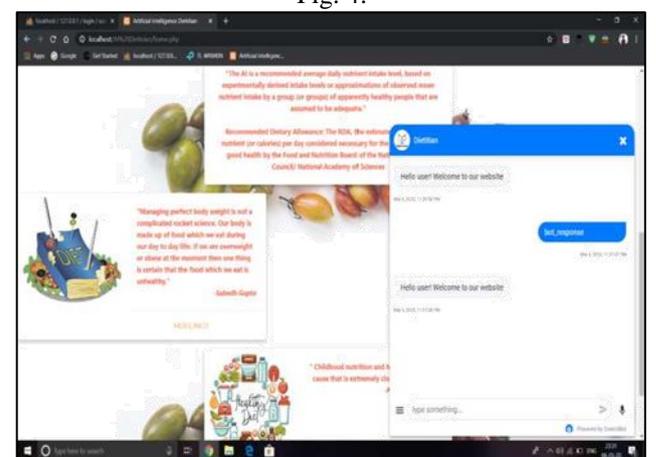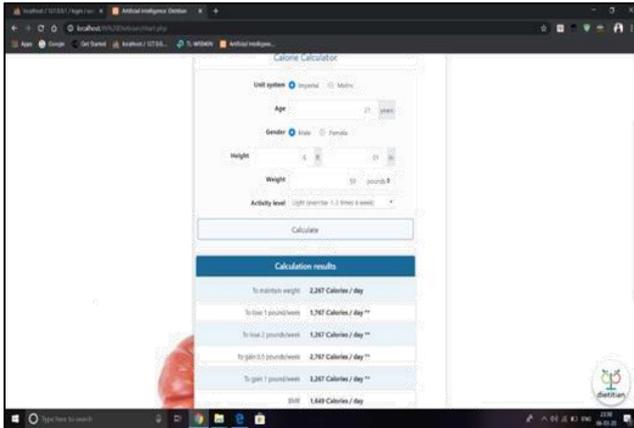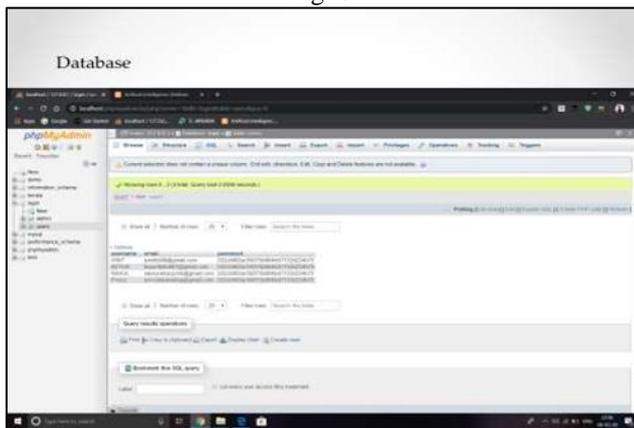

Fig. 3:

Fig. 4:

Fig. 5:

Fig. 6:

Fig. 7:

V. CONCLUSION

These are building diet planner and dietitian guide for users. Users can measure their daily calories need and weight control guide according to calories they need to consume in day to maintain their health. Users have to follow the given info generated by our health measurement tool and have to strictly stick to it. application can enhance its functionality by adding image reorganization which can be used to analyze the food image and produce the result with the nutrition values contained in that particular food item. Its implemented on large scale the number of users will definitely increase. A Google map can be added to track the distance covered by the user using the Activity Tracker to provide a more visual representation of the activity to the user. The activity tracker can also be updated using the Google fit API for the more accurate result.

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