AI DIETITIAN

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Abstract - *As people across the globe are becoming more interested in watching their weight, eating more healthy food and avoiding junk food, a system that can measure calories and nutrition in every day meals can be very useful for maintaining our health. Food Calorie and Nutrition measurement system is very beneficial for dietitians and patients to measure and manage the daily food intake. The proposed system is a responsive website which contains the knowledge and data regarding the fitness of a person. We also referred data required to develop the website, from gym exercise book which makes the website a unique one. The basic information related to the fitness such as how to maintain good health by doing some workouts and by eating some food products which includes calories, proteins and carbohydrates etc. Also contains user login such as Admin and User. The online artificial dietitian is a chat bot with Artificial Intelligence about human diets. It acts as a diet consultant similar to a real dietitian. Dietitians are educated with nutrient value of foods. A dietitian consults a person based on his schedule, body type, height and weight. The system too asks all this data from the user and processes it. It asks about how many hour the user works, his height, weight, age etc. The system stores and processes this data and then calculates the nutrient value needed to fill up user needs.*

*Key Words***:** Artificial Intelligence, Dietitians, Nutrition, Food Calorie, body type, height, weight

1. INTRODUCTION

"HEALTH IS WEALTH" the most known phrase we all are aware about. Nowadays, people tend to eat unhealthy food and their careless behavior may cause severe disease. On the other hand busy schedule does not allow people to look after their health in better way. People are basically unaware about what to eat and what to do to stay fit and healthy. Survey proves around 70% people suffer from disease due to unhealthy diet. Hiring nutritionist can be costly per month and thus people basically avoid going to diet planner or nutritionist. Smart phones have brought advancement in lifestyle of people and they get the one hand information about everything they wish to.

So there came a thought of developing an AI based dietitian who actually acts as a diet consultant similar to a real dietitian. Artificial Intelligence is a technology that will help to make interaction between man and machine using natural language possible. It 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 dietitian which also saves time. This will help common people to maintain their health in better way with proper guidance.

AI domain gives an edge of generating a proper diet plan. Regularly, adjusting the eating routine requires master information on food items and is a tedious procedure. Few IOT systems has problem where it is not updated about user if he/she is at remote location. Diet plan varies from person to person, which was not kept in mind while developing most of systems and AI applications. The application is most important to keep track on health status of the user. No need of special dietitian and no more need of wasting money out for checking up yourself. This web application will help you out

2. PROPOSED WORK

In this project we analyze that now a day people are taking non healthy food and they got some severe diseases because of their careless behavior. A Human being can suffer from many health problems such as fitness problem, maintaining proper diet problem etc.

Therefore we are developing this web application for providing special dietitian information so every person should take proper diet for his/her own concern. The user fills the registration form and then login .After the login users have to fill personal information including age, weight, height, gender for the calculating BMI age, weight, height, gender are necessary. On the basis of calculated BMI then will display the proper dietitian for logged user.

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problem etc. Therefore we are developing this web application for providing special dietician information so every person should take proper diet for his/her own concern.

Figure -1: Application Process Diagram
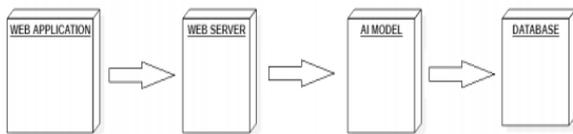
The user fills the registration form and then login. After the login users have to fill personal information including age, weight, height, gender to get a proper diet plan.

After the text edit has been completed, the paper is ready for the template. Duplicate the template file by using the Save As command, and use the naming convention prescribed by your conference for the name of your paper. In this newly created file, highlight all of the contents and import your prepared text file. You are now ready to style your paper.

3. Technology Used

a.   **AWS:**
Amazon Web Services is a subsidiary of Amazon providing on-demand cloud computing platforms and APIs to individuals, companies, and governments, on a metered pay-as-you-go basis.

b.   **Flask:**
Flask is a popular Python web framework, meaning it is a third-party Python library used for developing web applications.

c.   **Docker:**
Docker is a tool designed to make it easier to create, deploy, and run applications by using containers. Containers allow a developer to package up an application with all of the parts it needs, such as libraries and other dependencies, and deploy it as one package.

d.   **Machine Learning:**
Machine learning is an application of artificial intelligence (AI) that provides systems the ability to automatically learn and improve from experience without being explicitly programmed. Machine learning focuses on the development of computer

programs that can access data and use it to learn for themselves.

4. Methodology

The system is a responsive web application named 'AI Dietitian' which contains the knowledge and data regarding the fitness of a person. The basic information related to the fitness such as how to maintain a good health by doing some workouts and eating some food products which includes calories, proteins and carbohydrates etc. Also contains user login such as Admin and User. The online artificial dietitian predicts the health of a person whether he is fit or unfit by using collected user data and Machine Learning prediction model.

On the basis of this, the result contains the diet plan according to the predicted value. The system also contains the Chat bot which solves the different queries of user regarding the health and diet. The chat bot on backend uses a Deep Learning and Machine Learning Model which makes bot an intelligence bot and we have named it as AI Bot. It acts as a diet consultant similar to a real dietitian. Dietitians are educated with nutrient value of foods.

Figure -2: System Architecture Diagram
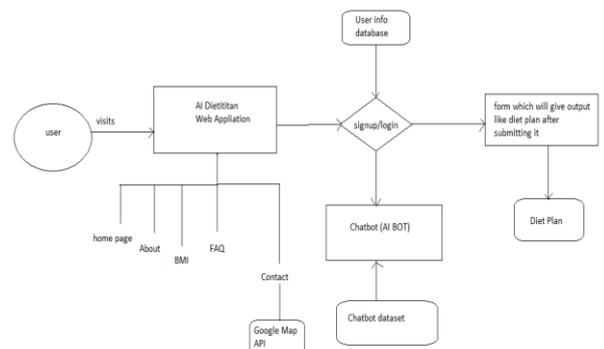
A dietitian consults a person based on his schedule, body type, height and weight. The system too asks all this data from the user and processes it. It asks about how many hour the user works, his height, weight, age etc. The system stores and processes this data and then calculates the nutrient value needed to fill up user needs. The 'AI Dietitan' application has several pages containing the overall information of the application.

BMI page is one of the main view pages which includes a section of BMI i.e. Body Mass Index. The parameters are height and weight of the user and on that basis the output retrieved is BMI of the user. The Contact page contains a Map that shows the doctors present near user. The map is linked

with the Google Map API which can be used directly and easily within the system.

5. Result

Homepage is the main page of our website that would be viewed by the clients every time they click on the domain. It consist all the information and links to other page. The homepage consist direct connection to the chat bot too.

Figure -3: Homepage
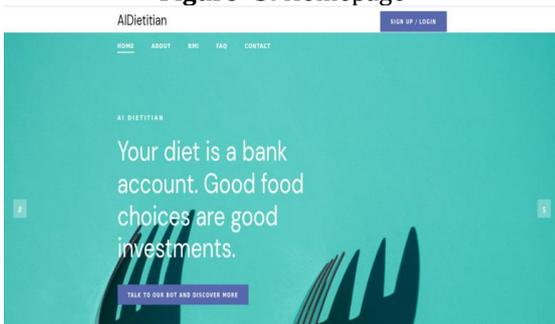
The sign-up page is one that permits the user to create the account if not exists. Ever user has its own credential that gets store in the database. This provides security to a system. After singing up every user will be able to fill up the form with his/her details simply known as prediction form.

Figure -4: Sign-Up
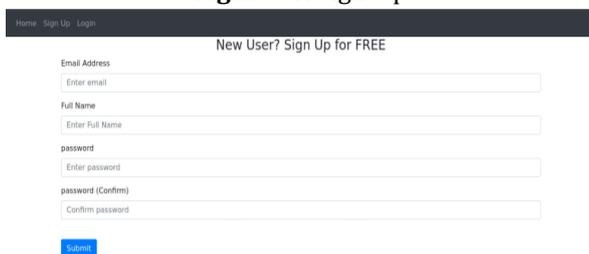
The one who has already created his/her account can directly login to account. After login there are two option that user can use. One is Prediction form other is Chatbot.

Figure -5: Login

The prediction form allows the user to enter the details and tells about whether the person is fit or unfit. The Diet chart to user is provided based on the entered details.

Figure -6: Prediction Form
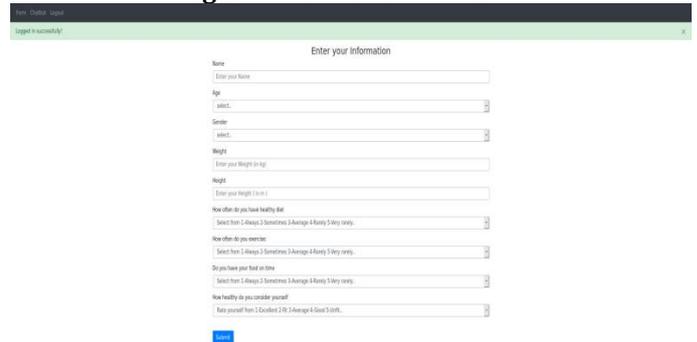
The BMI is general Body Mass Index calculation that user can use to know about his/her health status. For most adults, an ideal BMI is in the 18.5 to 24.9 range. For children and young people aged 2 to 18, the BMI calculation takes into account age and gender as well as height and weight. If your BMI is: below 18.5 – you're in the underweight range.

Figure -7: BMI
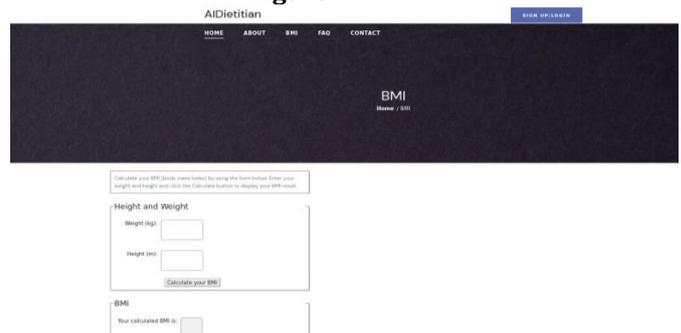
The Chat Bot is just an easy way of communication for the user. It provides quick answer to the questions and also guide about how one should maintain their health.

Figure -8: Chatbot

On the basis of inputs given by user in the prediction form, machine learning model will predict the result accordingly whether the user is fit or unfit.

Figure -9: Unfit

Figure -10: Fit

6. Conclusion:

The designed system will be useful for common people to maintain their health by taking proper diet suggested by AI Dietitian application. The predicted result shows whether the person is fit or unfit. On that basis, the application provides user a proper diet plan to maintain proper health. The chat bot named AI Bot will solve all the user queries related to the health and diet plans. AI Bot also suggests the nutritionists or dietitians availability near his or her location. The cost of a personal dietitian will be reduced. It will save time as it will be an excellent feature of use anytime anywhere.

ACKNOWLEDGEMENT

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BIOGRAPHIES

An IT enthusiast passionate to explore latest technology. Holding strong interest in Devops, Cloud Computing and Web Development.

A motivated learner always ready to deal with technical challenges. Specially interested in MLOPS, Cloud Computing.

An IT student having strong communication and strong interest in the Frontend Technologies.

An IT Professor of Bharati Vidyapeeth College Of Engineering in Information technology.