NUTRITION ASSISTANT APPLICATION

LITERATURE SURVEY

Existing Related Solutions Summary:

There are many applications currently that suggest various diet plans for users to follow. However, most of them don't cater to what a user particularly needs. The application gives general diet plans. This doesn't actually work perfectly in day to day scenarios where users actually might not have the correct access to the mentioned food and are going for alternatives which might change the actual nutrition value.

So we would want to modify this by taking into account what types of food the user usually wants to have and make sure we give suggestions on the nutrition value for it and suggest on the same basis.

Existing Related Solutions/Papers:

- ☐ **Smartphone Application for Promoting Healthy Nutrition. Diet & nutrition**
  Year : 2019
  Authors: Steven & Coughlin, Mary's Whitehead. Jayce Q Sheats, Jeff Mastromonico
  Statement: In epidemiologic and health intervention studies involving dietary self-monitoring and assessment of energy and nutrient intakes, smartphones and PDAs have been successfully used to allow research

- ☐ **A real time food detection mobile application**
  Year: 2019
  Authors: Jianing sun,Katarzyna radecka,zeliko zilic
  Statement: We present detection results that include bounding box position and class label.

- ☐ **Food recognition and calorie measurement using image processing**
  Year: 2020
  Authors: V.Hemalathea reddy,Soumya kumari,vinitha muralidharan,k aran gigoo
  Statement: Mobile Application for calorie measurement to prevent obesity.

- ☐ **Android-based food recognition app for nutrition awareness**
  Year: 2022
  Authors: Arnel B.okay,Jane M.Fernandez,t hlma D.palaoag

Statement: The researcher's attempts to design and develop an android-based food recognition application that could be used as a health awareness tool for non-health conscious individual.

Existing useful API that we are going to use :

- Clarifai's AI food recognition model -

An API to recognize more than 1,000 food items in images down to the ingredient level. This model is great for anyone building a health and wellness related app.

What to Request : You can call the Predict API with the 'Food' model. Simply pass in an image input with a publicly accessible URL or by directly sending image bytes.

What Response : The Predict returns a list of concepts (such as specific food items and visible ingredients) with corresponding probability scores on the likelihood that these concepts are contained within the image.

- Nutrition API –

On giving the food details, the nutrition API displays all attributes of the food image uploaded. These details are stored and used further to give suggestion to user for a healthy diet.

We plan to give a good application for users to keep track of the nutrition attributes of their diet and also get suggestions to have a healthy diet. The application created would have an easy user interface as well as give the user the option of knowing about the nutrition aspect of food that they usually have. This makes sure that a healthy diet plan is followed by the user with foods that are available to them.

USE-CASE:

Main-Case Scenario:

1. User logins into the application.

2. User uploads an image of a food item the user wants to know the attributes of.

3. The uploaded image is sent to the backend and our application uses Clarifai's AI-Driven Food Detection Model Service to analyze the images.

4. The analyzed details are passed on to the Nutrition API which gives the required attributes of the food item.

5. The attributes are displayed on the screen for the user.

Use-Case Diagram: