Project Design
Phase-II
Solution Requirements
(Functional & Non-functional)

Date	14 October 2022
Team ID	PNT2022TMID16369
Project Name	Project - AI-powered Nutrition Analyzer for Fitness Enthusiasts
Maximum Marks	4 Marks

Functional Requirements:

It will generate the diet plan as well as monitor the user's health to classify the category of the disease and to create the diet plan. It will also reduce the cost of consulting the person nutritionist.

The task of food detection/classification is not easy as it seems. All possible options related to the given Image.

Image classification, object detection, segmentation, face recognition. Classification of crystal structure using a convolutional neural network

Nutrition is vital to the growth of the human body. Nutritional analysis guarantees that the meal meets the appropriate vitamin and mineral requirements, and the examination of nutrition in food aids in understanding the fat proportion, carbohydrate dilution, proteins, fiber, sugar, and so on. Another thing to keep in mind is not to exceed our daily calorie requirements

Computer-Assisted Nutritional Recognize Food Images – In order to solve this issue, a brand-new Convolutional Neural Network (CNN)- based food picture identification system was created, as described in this study. We utilized our suggested strategy on two sets of actual food picture data.

Here the user can capture the images of different fruits and then the image will be sent to the trained model. The model analyzes the image and detects the nutrition based on the fruits like (Sugar, Fiber, Protein, Calories, etc.)

The Ultimate Workout at Home Solution This fitness AI software is designed with personalized training
regimens for each individual. It began as "gym only software," but has now improved its system to satisfy "at home fitness" expectations.

You take a picture, dial in data such as whether you are eating breakfast or lunch and add a quick text label, and the app estimates the calorie content.

This software collaborated with IBM's natural language capability to provide 24-hour assistance and dietary recommendations.

For Example:
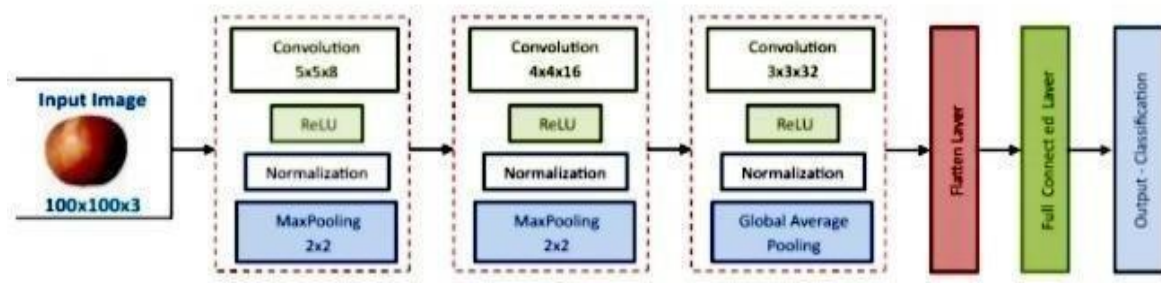
The comparison of the proposed model with the conventional models shows that the results of this model are exceptionally good and promising to use in real-world applications.

This sort of higher accuracy and precision will work to boost the machine's general efficiency in fruit recognition more appropriately.

A generic model for the dietary protein requirement (as with any nutrient) defines the requirement in terms of the needs of the organism,
i.e. metabolic demands, and the dietary amount which will satisfy those needs, i.e. efficiency of utilization, thus: dietary requirement = metabolic demand/efficiency of utilization.

Following are the functional requirements of the proposed solution.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	Home page	The home page shows the Objective and Aim of the project
FR-2	Classify	The classify page has choose and Analyze buttons
FR-3	Upload Image	Select the image by clicking the choose button and pick the image from the files
FR-4	Image Capturing and Processing	The application allows users to capture images of the ingredients they consume. These are given to the model for predicting their labels, i.e. identify the fruits. Further, the quantity of the fruits should be discerned. The application should be able to work with images of low quality and low resolution as well.
FR-5	Analyze	The choosen picture is analyzed and tells the sugar level, protein, calories, fiber, fat and carbohydrates

Non-functional Requirements:

Following are the non-functional requirements of the proposed solution.

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The users should be able to use the application without any difficulties. The interface should be easy to use and understand. The image capture process should be smooth and not tedious.
NFR-2	**Security**	Details of the users and their personal calories calendar should not be disclosed or shared to other users. Privacy of data should be ensured.
NFR-3	**Reliability**	The application should correctly identify the fruits from the captured image and fetch its nutritional value. The count and calculation of the calories should be done accurately.
NFR-4	**Performance**	The application should be built on a highly efficient prediction model such that the results are accurate. It should keep in mind time and space complexity.
NFR-5	**Availability**	The application should be available to its users at all times and should work efficiently. It should not suffer from issues such as application crashes.
NFR-6	**Scalability**	The application should be able to support updates in terms of features and functionality. The system should be built such that it can upgrade using the existing underlying architecture.