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

| Team ID | PNT2022TMID00751 |
|---|---|
| Project Name | **AI-powered Nutrition Analyzer for FitnessEnthusiasts** |
| Maximum Marks | 4 Marks |

**Functional Requirements:**

Following are the functional requirements of the proposed solution.

| FR No. | Functional Requirement (Epic) | Sub Requirement (Story / Sub-Task) |
|---|---|---|
| FR-1 | User Registration | Users can create an account to use the application. This can be done by creating a persona on the application with a username and password or by making use of an existing email ID. |
| FR-2 | User Confirmation | Once a user registers onto the application, they receive a confirmation to their email id which they provide for registration. OTP authentication is integrated to ensure identity theft does not occur. |
| FR-3 | Calorie Calendar Creation | On creation of a user profile, a calendar is generated in association with the account. This calendar is private to the user and keeps track of the calories consumed in a day and related statistics. |
| 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 | Calorie Value Computation | Once the labels of the ingredients and their quantity have been found, the net calorie value of the meal is calculated by summing up the calories of each ingredient in their respective amounts. The calorie values are fetched from the internet while that of Frequently used items are fetched from a database. |
| FR-6 | Storage of Data | Data about the user and their log in details are stored in a backend database. Apart from these, calorific information of frequently consumed ingredients are also stored to minimize overhead and complexity. |
| FR-7 | Calorie Over-Consumption Notification | When a user exceeds their permissible calorie consumption amount for the day, the application issues a notification for the same. The application then suggests low-calorie diets to ensure minimum over-Consumption. |
| FR-8 | Diet Plan Specification | Users can select the kind of diet plan they want to follow with a target in mind such as weight loss, muscle building, etc. The application sources diet plans and food items that supplement their goals from the internet to help them achieve their goal. |

**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 processshould 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. |