Project Design Phase-I
PROPOSED SOLUTION

Date	21 October 2022
Team ID	PNT2022TMID41375
Project Name	AI-Powered Nutrition Analyzer for Fitness Enthusiasts
Maximum Marks	2 Marks

Proposed Solution Template:

S.No.	Parameter	Description
1.	**Problem Statement (Problem to be solved)**	❖ The food industry is complicated, and the route to food sector innovation is extensive, from concept development to commercialization. Machine learning and AI in nutrition analyze raw data to identify competitive traits that are useful for forecasting improved dietary plans. ❖ Food patterns and diet are important factors to improve the lifestyle by preventing diseases. The food industry comprises complexities, and the journey for innovation in the food industry is long, from idea generation to commercialization.
2.	**Idea / Solution description**	❖ It is reported that diet significantly influences the evolution of CNCD (chronic non-communicable diseases), including, cardiovascular diseases, depression, and obesity. Further, product ideas and advanced packaging

		demand thorough data collection, testing, and certification before approaching consumers.
3.	**Novelty / Uniqueness**	❖ Randomized trials in the nutrition field are complex because this technique demands sticking to a diet for years, resulting in higher human error chances. There are several factors of dietary recommendations that influence everyone differently; hence, the ideology of a universal diet. Artificial intelligence allows researchers to analyze big data and better understand how diet affects human health patterns, including factors influencing their nutritional needs. ❖ Healthcare Industries are applying AI to make a better and faster diagnosis than humans. ❖ AI can help doctors with diagnoses and can inform when patients are worsening so that medical help can reach to the patient before hospitalization.
4.	**Social Impact / Customer Satisfaction**	❖ According to Global Newswire, it is predicted that the human nutrition market will approach $465.4 million with a CAGR of 6.6% annually by 2025. ✓ **Markets and Markets:** predicted that personalized nutrition would grow faster through

		programs, testing kits, and apps at 15%. ✓ **Wellness Creative:** predicted that obese people have higher medical costs of about $1428 than normal healthy persons, about 40% of the US population.
5.	**Business Model (Revenue Model)**	✓ **Distribution and Supply Chain:** AI in nutrition helps via predictive analytics in minimizing wastes, saving costs, visual pattern recognition, agile, and accurate forecasting. ✓ **Customer Experience:** Artificial intelligence monitors customer traffic and engagement and learns from insights to promote self-service and sales systems. ✓ **Manufacturing:** It involves reducing risk and predictive maintenance with IOT (internet of things) to create better-connected businesses.
6.	**Scalability of the Solution**	❖ This study proposes the activity -based nutrition management model with the use of the cluster analysis of similar group for healthcare. ❖ The proposed method is to conduct the cluster analysis of similar group for nutrition management and to develop the real-time activity information based nutrition management algorithm with the

		use of big data in order to improve the quality of healthcare management service. It is to re-process an existing nutrition database and add voice recognition function in line with the service so as to improve convenience of intake-food inputs. In addition, the Bluetooth Low Energy (BLE) communication based standard collection of bio signals occurring in real-time is developed. This study also proposes the method of improving an existing algorithm of drawing a daily recommended allowance with the use of real-time activity information, and the proposed service provides the essential information of nutrition management with the use of public big data.