Ideation Phase

Problem Statement

Date	19 September 22
Team Id	PIN2022TMID39847
Project Name	AI-Powered Nutrition Analyzer For Fitness Enthusiasts
Maximum Marks	2 Mark

Problem Statement:

It is very important in today's time that people should be aware of what they are consuming and what will be its impact on the body. So, a system that can help individuals to maintain their calories intake is very important. Most of the world's population live in countries where overweight and obesity kills more people than any other health disease. The problem here is not about having enough food, it is about the people not knowing what is in their diet. If people could estimate their calorie intake during a day, they can easily decide on the number of calories they want to consume. However, managing calorie intake is a very cumbersome task which involves the people to manually keep a track of food item they have consumed throughout the day and they must determine the calories they have consumed. This process is not only manual but also inaccurate as the calorie estimation not only depends on what you are eating but also depends on how much are having. With the advancement in the field of image processing techniques, the image recognition models are in demand. Researchers are aggressively deploying image recognition model for various uses such as self-driving cars, cancer detection, video frame analysis etc. Researchers have also shown keen interest in predicting the calories present in the food item with the help of the image. Researchers have used various machine learning and deep learning techniques to perform the task of calories estimation with the help of
supplied images.

A deep learning-based model which takes a food image clicked from the mobile camera which is capable of estimating calorie for the mixed portion of the food item as well. The dataset used contained 3000 images clicked under different condition with different camera model and then the clicked image is given as input. They used color segmentation, k-mean

clustering, and texture segmentation tools. They employed Cloud SVM and deep neural network to increase the performance of the image identification model. For calorie prediction they used the reference object approach wherein they mandated the presence of the thumb in the image so that their model can use the thumb present in the mage as reference for the size estimation of food item present in the image which helped in calorie estimation.