**Project Design Phase – I**

**Solution Architecture**

Food is essential for human life and has been the concern of many healthcare conventions. Nowadays new dietary assessment and nutrition analysis tools enable more opportunities to help people understand their daily eating habits, exploring nutrition patterns and maintain a healthy diet. Nutritional analysis is the process of determining the nutritional content of food. It is a vital part of analytical chemistry that provides information about the chemical composition, processing, quality control and contamination of food.

  The main aim of the project is to building a model which is used for classifying the fruit depends on the different characteristics like color, shape, texture etc. Here the user can capture the images of different fruits and then the image will be sent the trained model. The model analyses the image and detect the nutrition based on the fruits like (Sugar, Fibre, Protein, Calories, etc.).

In this project, we have collected images of 3 types of food items apples, 'banana', 'Mango', they are saved in the respective subdirectories with their respective names:85 % of the images from these are used for training, and 15 % are used for testing the model. The accuracy of the proposed model was 98.74 %. 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.

