Prerequisites

Date	29 October 2022
Team ID	PNT2022TMID02289
Project Name	AI-powered Nutrition Analyzer for Fitness Enthusiasts

To develop this project we have to install the following software/packages:

Anaconda Navigator:

Anaconda Navigator is a free and open-source distribution of the Python and R programming languages for data science and machine learning-related applications. It can be installed on Windows, Linux, and macOS. Anaconda is an open-source, cross-platform, package management system. Anaconda comes with great tools like JupyterLab, Jupyter Notebook, QtConsole, Spyder, Glueviz, Orange, Rstudio, Visual Studio Code.

Flask -Web framework used for building Web applications.

If you are using anaconda navigator, follow the below steps to download the required packages:

Open anaconda prompt as administrator

If you are using Pycharm IDE, you can install the packages through the command prompt and follow the same syntax as above.

Web framework used for building Web applications

- Python packages:
    - open anaconda prompt as administrator
    - Type “pip install numpy” and click enter.
    - Type “pip install pandas” and click enter.
    - Type “pip install scikit-learn” and click enter.
    - Type “pip install tensorflow==2.3.0” and click enter.
    - Type “pip install keras==2.4.0” and click enter.
    - Type “pip install Flask” and click enter.

Deep Learning Concepts :

Deep learning is a subset of machine learning, which is essentially a neural network with three or more layers. These neural networks attempt to simulate the behavior of the human brain—albeit far from matching its ability—allowing it to “learn” from large amounts of data.

Artificial Neural Networks (ANN):

ANNs are also named as “artificial neural systems,” or “parallel distributedprocessing systems,” or “connectionist systems.” Artificial Neural Networks (ANN) are multi-layer fully-connected neural nets that look like the figure below. They consist of an input layer, multiple hidden layers, and an output layer. Every node in one layer is connected to every other node in the next layer.

Convolutional Neural Networks (CNN) :

A convolutional neural network is a class of deep neural networks, most commonly applied to analyzing visual imagery Convolutional neural networks are composed of multiple layers of artificial neurons. Artificial neurons, a rough imitation of their biological counterparts, are mathematical functions that calculate the weighted sum of multiple inputs and outputs an activation value. When you input an image in a ConvNet, each layer generates several activation functions that are passed on to the next layer.