PREREQUISITES

Date	03 November 2022
Team ID	PNT2022TMID29438
Project Name	AI-Powered Nutrition Analyzer for Fitness Enthusiasts

Prerequisites

In order to develop this project we need 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. Conda 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.

For this project, we used Jupyter notebook and Spyder

To install the Anaconda navigator and Jupyter Notebook & Spyder using Anaconda

- **Flask -** Web framework used for building Web applications.

We used anaconda navigator, to download the required packages using the below steps:

1. Open anaconda prompt as administrator
2. We used Pycharm IDE, We installed the packages through the command prompt and follow the same syntax as above.
3. 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:

Artificial Neural Networks:

ANN is an efficient computing system whose central theme is borrowed from the analogy of biological neural networks. ANNs are also named as “artificial neural systems,” or “parallel distributed processing systems,” or “connectionist systems.” ANN acquires a large collection of units that are interconnected in some pattern to allow communication between the units. These units, also referred to as nodes or neurons, are simple processors which operate in parallel

Convolution Neural Networks:

A convolutional neural network is a class of deep neural networks, most commonly applied to analyzing visual imagery.The construction of a convolutional neural network is a multi-layered feed-forward neural network, made by assembling many unseen layers on top of each other in a particular order. It is the sequential design that gives permission to CNN to learn hierarchical attributes. In CNN, some of them are followed by grouping layers and hidden layers are typically convolutional layers followed by activation layers.