AIML PROJECT TITLE: **Machine Learning Model for Fruit Plant Disease Identification**

Team NO:SECTION-ECE 2B

PROBLEM STATEMENT:

* The project will develop a machine learning model capable of correctly identifying and classifying the disease in fruit plants from their leaf images. This will be a useful tool to assist enthusiasts of plants and farmers in recognizing the onset of diseases so that intervention measures can be taken early to restore health to the plant. It has to be emphasized that the timely detection of diseases is crucial for minimizing losses of crops and ensuring better yield.

ALGORITHMS USED:

This architecture is such that it follows the most common deep learning algorithm for image classification tasks: a Convolutional Neural Network, or CNN in short. CNNs are very good at automatically learning relevant visual features, including shapes, textures, and colours from images, which make them particularly effective in distinguishing healthy and diseased leaves. Having said that, features extracted in plant leaf images using CNNs will enable the model to predict the type of disease with an increased percentage of accuracy.

DATASET:  
So, the model is trained using **PlantVillage Dataset (PVD)**-one of the publicly known datasets concerning the detection of plant diseases. While this dataset does have very limited representations, as its images were taken in a controlled environment, in pragmatic applications, the images of plants vary by background, lighting condition, and multiple leaves. These can reduce the chances of detecting a disease, so some other steps may be taken such as data augmentation and domain adaptation techniques to improve the generalizability of the model.

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