**Problem Statement: AI/ML-Based Plant Disease Detection System Using Streamlit and Machine Learning**

In modern agriculture, plant diseases pose a significant threat to crop productivity and food security. Early and accurate detection of plant diseases is critical for timely intervention, minimizing crop loss, and reducing the use of harmful pesticides. Traditional methods of disease identification rely heavily on manual inspection by experts, which is time-consuming, expensive, and not scalable for large farms.

This project aims to develop an AI/ML-based plant disease detection system that leverages machine learning techniques and a user-friendly web interface built using the **Streamlit** library. The system will take images of plant leaves as input, process them using a trained machine learning model, and classify them into predefined disease categories or identify them as healthy.

The core objectives include:

* Building or fine-tuning a machine learning model (e.g., CNN) trained on a dataset of plant leaf images labeled with corresponding diseases.
* Preprocessing and augmenting image data to improve model robustness.
* Developing an interactive Streamlit-based web application that allows users (e.g., farmers, agronomists) to upload leaf images and receive instant disease classification results.
* Providing brief information and suggested remedies for detected diseases to support informed decision-making.

The solution should be scalable, accessible, and efficient, with the potential to integrate further into IoT-based agriculture monitoring systems.

**Pipline of the project:**

1. **Data Collection and Data Loading**

**DataSet---------Train**

**|---------Test**

**|--------- Valid**

**2)Download dataset Zip folder**

**3)Upload the Zip folder on google drive**

**4)Mount Drive on google collab**

**5)Image processing Image Augumentation**

**6)CNN Model**

**7)Test / Evaluate**

**IMP:All images should have in same dimensions.**