**Problem Statement:**

Develop a CNN-based model that can automatically detect and classify plant diseases from images of leaves of various crops such as apple, cherry, grape and corn. The proposed CNN-based model will be trained to differentiate between healthy and diseased leaves and further classify the diseased samples into specific categories based on type of disease present. This system will aid in precision agriculture by enabling early detection and effective disease management.

**Pipeline:**

The pipeline discussed during the lecture includes the following steps:

1. **Data Collection & Data Loading:** The dataset is categorized into train, test and validation sets. Each set contains images belonging to different categories (e.g., category1, category2). These datasets are loaded and prepared for training.
2. **ZIP & Mounting:** The dataset is zipped and uploaded to Google Drive. It is then mounted in Google Colab for further use. Python code is used to unzip the dataset into the Colab environment.
3. **Image Processing & Augmentation:** The images are processed to a consistent size (e.g., 128x128 pixels). Augmentation techniques may be applied to improve model generalization.
4. **CNN Model:** A CNN is used to train the model using the training dataset. The processed images are fed into the CNN, which leams to classify them.
5. **Testing & Evaluation:** The model is tested using the test dataset. Evaluation metrics help determine the model’s performance.