**Problem Statement:** Develop a CNN-based model capable of detecting and classifying plant diseases from images of leaves of various crops such as apple, cherry, grape, and corn. The model should accurately identify both healthy and diseased leaves while predicting the specific type of disease. 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 learns to classify them.

**5. Testing & Evaluation:** The model is tested using the test dataset. Evaluation metrics help determine the model's performance.