**PLANT DISEASE DETECTION SYSTEM FOR SUSTAINABLE AGRICULTURE**

**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.

**Aim:**

To design and implement a CNN-based model that accurately detects and classifies plant diseases from leaf images, identifying both healthy and diseased conditions. The system aims to support precision agriculture by enabling early diagnosis and improving crop management practices.

**Pipeline for the project:**

**1.Data Collection:**

Data collection means collecting of the plant diseased images and healthy plant images of various types. From that collected data, we need to create a dataset by dividing them into two classes like healthy leaves and diseased leaves.

**2.Uploading the Zip file:**

The dataset which containing 2clasess should be compressed into zip file and that file has to be stored in a google drive for further usage for the model development.

**Format of dataset:**

The Dataset must contain 3folders like train, test and valid. In that 3folders, there should be classes like healthy plant and diseased plant. This is the format of dataset.

**3.Image preprocessing & Image Augmentation:**

The dataset has to be pre-process and augments for the better result. This will place the great role in the model development because it will balance the dataset and helps to provide accurate result for the user.

**4.Developing CNN model:**

Has we are doing the project on images, the best model for images is CNN (convolution neural network). This CNN model will fit for my project.

**5.Testing the model:**

The Developed model will be test using API like Streamlit, flask etc. These are the user-friendly applications which contains easy interface.